
Dynamic Scheduling with Microsoft® Project 2013 Solutions Guide

This document provides answers to the Review Questions included at the end of each chapter of the book *Dynamic Scheduling with Microsoft® Project 2013*.

Most of the answers can easily be found in the text of the module. In other instances, for example where a question asks readers to develop specific scenarios, more detailed answers are included here.

Questions are shown in upper and lower case; ANSWERS ARE IN UPPERCASE.

Please send any discussion on the solutions presented or any suggestions for improvement directly to the authors at: learning@iil.com

Thank you for your efforts to make this document better!

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Answers to Review Questions

At the conclusion of each chapter, except Chapter 14, you will find a set of review questions. The proposed answers are some possible solutions although there may be others.

Chapter 1: Concepts of Project Management

Review Questions:

1. What is a project and what makes it different from other kinds of work?

A PROJECT IS A **TEMPORARY** ENDEAVOR TO CREATE A **UNIQUE PRODUCT, SERVICE, OR RESULT**. IT DIFFERS FROM OPERATIONS IN THAT IT TYPICALLY IS NOT REDUNDANT AND INVOLVES WORK THAT BRINGS ABOUT CHANGE IN THE ORGANIZATION.

2. Are there organizations that never have any projects?

IT IS SAID THAT IF AN ORGANIZATION DOES NOT CHANGE WITH THE TIMES, IT DIES. IF THIS IS TRUE, IT WOULD BE DIFFICULT TO ENVISION AN ORGANIZATION THAT DOESN'T UNDERGO CHANGE AND THEREFORE DOESN'T PURSUE NEW PROJECTS.

3. Are there organizations that only have projects?

THIS ALSO WOULD BE DIFFICULT TO ENVISION. FOR EXAMPLE, TAKE A CONSTRUCTION COMPANY THAT EXISTS TO DO PROJECTS. THIS IS THE TYPICAL EXAMPLE OF A PROJECTIZED ENVIRONMENT. EVEN IN PROJECTIZED ORGANIZATIONS, SOMEONE NEEDS TO HANDLE ACCOUNTING, FINANCES, ETC. THESE ARE WHAT WE CHARACTERIZE AS OPERATIONS.

4. What is the difference between project management, program management, and portfolio management?

PROJECT MANAGEMENT INVOLVES MANAGING PROJECTS THAT ARE INDEPENDENT FROM ONE ANOTHER. PROGRAM MANAGEMENT DEALS WITH MANAGING RELATED PROJECTS IN A WAY THAT BENEFITS THE ORGANIZATION FROM ECONOMIES OF SCALE IN A WAY THAT MANAGING THEM INDIVIDUALLY WOULD NOT. PORTFOLIO MANAGEMENT IS THE INVESTING OF AN ORGANIZATION'S RETAINED EARNINGS AND OTHER SOURCES OF CAPITAL IN ORDER TO PRODUCE THE BEST OVERALL RETURN. THIS INVOLVES CHOOSING AND MANAGING THOSE PROJECTS, SERVICES, AND OPERATIONS THAT BEST SERVE THE STRATEGIC OBJECTIVES OF THE ORGANIZATION AND ENSURING THAT THEY CONTINUE TO ALIGN WITH THESE OBJECTIVES THROUGH THEIR BUSINESS LIFE CYCLES. SOME HAVE SAID THAT PORTFOLIO MANAGEMENT IS DOING THE RIGHT PROJECTS. PROJECT MANAGEMENT IS DOING PROJECTS RIGHT.

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5. What are the PM knowledge areas according to the PMBOK® Guide - Fifth Edition from PMI®?

SCOPE MANAGEMENT, TIME MANAGEMENT, COST MANAGEMENT, QUALITY MANAGEMENT, RISK MANAGEMENT, HUMAN RESOURCE MANAGEMENT, PROCUREMENT MANAGEMENT, COMMUNICATION MANAGEMENT, STAKEHOLDER MANAGEMENT, AND INTEGRATION MANAGEMENT.

6. What are the competing demands in project management and why are they important?

THE COMPETING DEMANDS ARE TIME, COST, SCOPE, QUALITY, RISK, AND RESOURCES. THEY ARE AN EXTENSION OF WHAT USED TO BE TERMED THE “TRIPLE CONSTRAINTS (TIME, COST AND SCOPE).” THERE ARE SEVERAL IDEAS THAT COME FROM THESE SIX CONSTRAINTS.

FIRST, THESE CONSTRAINTS FORM THE BOUNDARY ON A PROJECT MANAGER'S AUTHORITY. THE PM CAN MAKE NECESSARY DECISIONS WITHIN THESE CONSTRAINTS. IF IT BECOMES NECESSARY TO GO OUTSIDE THESE CONSTRAINTS, THE PM SHOULD CONSULT THE OWNER OF THAT AREA OF RESPONSIBILITY.

SECOND, THESE ARE SOMETIMES VIEWED AS AN EQUILIBRIUM THAT SHOULD BE KEPT IN BALANCE. IF ONE DEMAND CHANGES, ONE OR MORE OF THE OTHER DEMANDS NEEDS TO CHANGE IN ORDER TO COUNTER-BALANCE THE EFFECT OF THE CHANGE.

FINALLY, THESE ARE ALSO REFERRED TO AS “IMPACTS” TO BE MEASURED ANYTIME A CHANGE TAKES PLACE OR IS ABOUT TO TAKE PLACE WITH A PROJECT. THIS MIGHT HAPPEN DURING A SCOPE CHANGE, A WHAT-IF SCENARIO, OR AN OPTIMIZATION ATTEMPT.

7. What is the rolling wave approach to project planning?

ROLLING WAVE IS OFTEN RELATED TO PROGRESSIVE ELABORATION. IN PROGRESSIVE ELABORATION, THE SCOPE OF THE PROJECT IS CONTINUALLY REFINED WITH MORE DETAIL ABOUT THE PROJECT AS THE PROJECT PROGRESSES AND MORE IS KNOWN. ROLLING WAVE BEGINS BY UNDERSTANDING THAT WE DON'T KNOW EVERYTHING ABOUT A PROJECT IN THE VERY BEGINNING. PERHAPS WE ONLY KNOW ABOUT THE FIRST THREE MONTHS IN ANY AMOUNT OF DETAIL. BEYOND THAT, WE MAY ONLY KNOW GENERALITIES ABOUT MONTHS FOUR, FIVE, SIX, ETC. WE CREATE OUR SCHEDULE IN THE SAME MANNER PUTTING IN SPECIFICS FOR THE FIRST THREE MONTHS AND THEN, FOR SUCCEEDING MONTHS, WE PUT IN GENERALITIES SUCH AS MILESTONES AND GENERIC RESOURCES. AS WE MOVE THROUGH THE FIRST THREE MONTHS WITH ACTUAL PERFORMANCE, WE THEN FIRM UP THE NEXT THREE MONTHS WITH MORE DETAIL. HENCE THE NAME “ROLLING WAVE.”

8. What are the six activities of project planning and are they always done in sequence?

IDENTIFY SCOPE, AGREE ON THE APPROACH, IDENTIFY AND DESCRIBE THE ACTIVITIES, ESTIMATE AND SCHEDULE THE WORK, OPTIMIZE THE PLAN, AND ADJUST AS NEEDED (KEEP THE PLAN CURRENT.) THESE STEPS ARE NOT NECESSARILY SEQUENTIAL. THEY ARE DEPENDENT ON THE OUTCOME OF PREVIOUS STEPS AND RESULTS FROM ACTUALLY EXECUTING THE PROJECT. THEY ARE SOMETIMES ITERATIVE, SOMETIME CYCLIC, AND SOMETIMES LINEAR. THE BEST YOU CAN SAY ABOUT THESE STEPS IS THAT THEY ARE SITUATIONAL AND MAY IMPACT ONE OR MORE OF THE PREVIOUS AND SUBSEQUENT STEPS.

9. What advantages does a dynamic model have over a static chart?

WHILE BOTH STATIC AND DYNAMIC SCHEDULES HAVE THEIR PLACE IN PROJECT MANAGEMENT, THE DYNAMIC SCHEDULE (MODEL) ALLOWS FOR THE TOOL (MS PROJECT) TO DO THE HEAVY LIFTING. BY THIS, WE MEAN THAT IF ONE TASK IN THE SCHEDULE IS MOVED OUT, TASKS THAT DEPEND ON THE PRIOR TASK WILL ALSO MOVE OUT. IT IS THIS AUTOMATIC UPDATING THAT FACILITATES THE MAINTENANCE OF SCHEDULES. A DYNAMIC SCHEDULE IS CONSTANTLY A REFLECTION OF THE PROJECT'S PROGRESS AGAINST AN APPROVED BASELINE. IT IS THE SCHEDULE'S VARIANCE TO THE BASELINE THAT PROVIDES ONE OF THE NECESSITIES OF RE-PLANNING AND WARNS THE PROJECT TEAM OF IRREGULARITIES IN PERFORMANCE. A DYNAMIC SCHEDULE ALSO PROVIDES A PREDICTIVE ELEMENT TO THE SCHEDULE BY SHOWING THE PROJECT MANAGER AND TEAM WHERE THE PROJECT IS HEADED GIVEN THE INPUTS THAT HAVE BEEN ENTERED.

Chapter 2: Getting Started with Project 2013

Review Questions:

1. Why should I want to use Project 2013 instead of Microsoft Excel?

WHILE AT FIRST GLANCE PROJECT LOOKS SIMILAR TO EXCEL, PROJECT HAS MANY AUTOMATED FEATURES THAT WOULD REQUIRE SOPHISTICATED PROGRAMMING TO MIMIC IN EXCEL. FOR EXAMPLE, PROJECT AUTOMATICALLY IDENTIFIES THE CRITICAL PATH, CALCULATES START AND FINISH DATES, AND IDENTIFIES RESOURCES THAT ARE OVER ALLOCATED.

2. What is the function of the Global.mpt file?

WHEN YOU OPEN A NEW PROJECT THE GLOBAL.MPT PROVIDES DEFAULT OBJECTS, SUCH AS VIEWS, TABLES, FILTERS, REPORTS, AND OTHER ELEMENTS THAT CAN BE IDENTIFIED IN THE ORGANIZER.

3. In which situations would you recommend the use of project templates?

ANYTIME THAT YOU CAN EXPEDITE BUILDING A SCHEDULE BY USING A TEMPLATE THAT INCLUDES A STANDARDIZED WBS, RESOURCES, AND COSTS THAT WOULD PERTAIN TO A SPECIFIC PROJECT. THIS WILL SAVE THE PROJECT MANAGER TIME BY JUMPSTARTING THE SCHEDULE DEVELOPMENT PROCESS.

4. Which view would you use for:

Tab	Recommended View
Entering tasks?	GANTT CHART
Entering resources?	RESOURCE SHEET
Entering assignments?	GANTT CHART, TASK USAGE, OR TEAM PLANNER
Checking the network logic?	NETWORK DIAGRAM OR A COMBINATION VIEW THAT DISPLAYS THE GANTT CHART WITH THE RELATIONSHIP DIAGRAM IN BOTTOM
Viewing workloads?	RESOURCE GRAPH, RESOURCE USAGE OR RESOURCE ALLOCATION, AND THE TEAM PLANNER
Recording To-do lists?	CALENDAR VIEW WITH FILTER USING RESOURCE... THE NOTES ON EACH TASK IN THE GANTT CHART

5. Why would you use a split view (combination view) in Project 2013?

BECAUSE THE INTERACTION BETWEEN TOP AND BOTTOM VIEW CAN BE VERY USEFUL FOR DATA ENTRY AND ANALYSIS OF CERTAIN SITUATIONS. A COMBINATION VIEW BRINGS TOGETHER INFORMATION THAT ASSISTS IN HIGHLIGHTING UNIQUE INTERRELATIONSHIPS.

6. What steps do you recommend as a process for creating a new project schedule?

- CREATE A NEW PROJECT SCHEDULE FILE FROM BLANK, A TEMPLATE, OR AN EXCEL SPREADSHEET.
- SAVE THE FILE
- DESCRIBE THE PROJECT IN THE PROJECT INFORMATION DIALOG BOX ON THE INFO TAB OF THE BACKSTAGE AREA.
- SET THE SCHEDULE AND ADVANCED OPTIONS
- SET THE PROJECT CALENDAR
- SET THE PROJECT START DATE.

7. How do the **Hours per day** setting in the Project Options and the working hours in **Change Working Time** of the Standard (Project) Calendar relate to each other?

THEY HAVE TO BE ALIGNED WITH EACH OTHER. IF THEY ARE NOT ALIGNED FORECASTS THE SCHEDULE PRODUCES ARE EITHER TOO OPTIMISTIC OR TOO PESSIMISTIC. ALSO, IF NOT ALIGNED THERE COULD BE ISSUES REGARDING POSSIBLE MISSING HOURS (AT THE BEGINNING OR END OF THE DAY).

8. How can you change the default calendar, i.e., how can you edit the Standard Project Calendar in *Global.mpt* file?

YOU CAN CHANGE THE DEFAULT CALENDAR BY CHANGING THE STANDARD CALENDAR IN A PROJECT FILE AND THEN COPYING IT BACK INTO THE GLOBAL.MPT, OVERRIDING THE STANDARD CALENDAR THAT WAS IN THE GLOBAL.MPT. YOU CAN COPY IT BACK USING THE ORGANIZER IN THE BACKSTAGE VIEW ON THE INFO TAB. TO APPLY A DIFFERENT CALENDAR IN YOUR PROJECT, GO TO PROJECT TAB, PROPERTIES GROUP, AND CLICK PROJECT INFORMATION, THEN IN PROJECT INFORMATION DIALOG BOX, SELECT THE CALENDAR.

9. a. What functions are on the Backstage view?

APART OF ACCESSING THE PROJECT OPTIONS DIALOG, YOU CAN USE THE BACKSTAGE VIEW TO PERFORM MOST FILE-RELATED FUNCTIONS SUCH AS OPEN, SAVE, SAVE AS, PRINT, SHARE, AND CLOSE. YOU CAN ALSO USE THE BACKSTAGE VIEW TO MANAGE YOUR PROJECT SERVER AND SERVICES CONNECTIONS SUCH AS ONEDRIVE OR OFFICE 365.

b. What functions are on the Ribbon?

RELATED COMMANDS ARE PLACED TOGETHER IN GROUPS AND DISPLAYED IN A SERIES OF TOPIC-SPECIFIC TABS ACROSS THE TOP OF THE PROJECT WINDOW/SCREEN. FOR EXAMPLE, WHEN YOU CLICK ON THE TASK TAB, YOU WILL SEE COMMANDS THAT RELATE TO MANIPULATING TASKS SUCH AS COPY, PASTE,

LINK, AND INDENT/OUTDENT. THE COMMANDS THEMSELVES ARE ORGANIZED INTO LOGICAL GROUPS SUCH AS CLIPBOARD, FONT, AND SCHEDULE.

c. What functions are on the Quick Access Toolbar?

YOU CAN USE THE QUICK ACCESS TOOLBAR TO ADD THOSE COMMANDS YOU WANT TO HAVE ACCESS TO REGARDLESS OF THE VIEW YOU ARE CURRENTLY IN. BY DEFAULT, THE QUICK ACCESS TOOLBAR INCLUDES COMMANDS LIKE SAVE AND UNDO.

d. Can you customize the Ribbon and the Quick Access Toolbar?

BOTH RIBBONS AND THE QUICK ACCESS TOOLBAR CAN BE CUSTOMIZED. A GOOD PRACTICE IS TO NOT CUSTOMIZE THE EXISTING RIBBONS, BUT TO ADD A NEW TAB. THIS WAY, ANY CLASSES YOU TAKE ON MS PROJECT AND BOOKS YOU MIGHT READ ON PROJECT WILL ACCURATELY DESCRIBE WHAT YOU SEE IN YOUR SCHEDULE. PLACING ALL CUSTOMIZATIONS ON NEW TABS WILL PROTECT THE STANDARD RIBBONS.

Additional Practice:

For experience working with the features you've learned about in this chapter, we strongly suggest that you do the additional exercises for this chapter that are included in the Case Studies appendix, available to download in the WAV Download resource center at www.jrosspub.com.

Chapter 3: Entering Tasks

Review Questions:

1. What is the definition of a WBS according to PMI's *PMBOK® Guide* - Fifth Edition?

“A HIERARCHICAL DECOMPOSITION OF THE TOTAL SCOPE OF WORK TO BE CARRIED OUT BY THE PROJECT TEAM TO ACCOMPLISH THE PROJECT OBJECTIVES AND CREATE THE REQUIRED DELIVERABLES.” (*PMBOK® GUIDE*, FIFTH EDITION, P.567)

2. Why is the WBS an important project tool?

THE WBS IS A KEY COMPONENT OF DESCRIBING THE PROJECT SCOPE. IT SERVES AS AN INPUT TO MANY KEY PROJECT DOCUMENTS LIKE THE PROJECT SCHEDULE AND BUDGET. IT ALSO SERVES AS A COMMUNICATION TOOL BETWEEN THE PROJECT TEAM AND PROJECT STAKEHOLDERS AND HELPS MANAGE EXPECTATIONS.

3. What is a deliverable and why is it important that your WBS be deliverable-oriented?

“A DELIVERABLE IS ANY UNIQUE AND VERIFIABLE PRODUCT, RESULT, OR CAPABILITY TO PERFORM A SERVICE THAT IS REQUIRED TO BE PRODUCED TO COMPLETE A PROCESS, PHASE, OR PROJECT.” (*PMBOK® GUIDE*, FIFTH EDITION, P. 537)

ALTHOUGH THE FIFTH EDITION OF THE *PMBOK® GUIDE* NO LONGER REFERS TO THE WBS AS “DELIVERABLES ORIENTED,” DELIVERABLES ARE STILL THE MOST IMPORTANT COMPONENT OF A WBS AND A SCHEDULE. DELIVERABLES REPRESENT THE ESSENCE OF WHAT WE ARE DOING IN A PROJECT AND WHAT STAKEHOLDERS ARE MOST CONCERNED WITH.

4. What are the differences between a to-do list and a WBS?

A TO-DO LIST IS A LIST OF ACTIVITIES THAT LACK ANY ORGANIZATION OR RELATIONSHIP TO DEFINABLE OUTCOMES. A WBS ORGANIZES ALL THE ACTIVITIES REQUIRED TO COMPLETE A DELIVERABLE IN A MANNER THAT FACILITATES COMMUNICATION. IT ALSO REPRESENTS 100% OF THE WORK NECESSARY TO COMPLETE THE DELIVERABLES.

WBS	TO-DO LIST
MULTIPLE HIERARCHICAL LEVELS	ONE LEVEL
CAN BE PHASES, DELIVERABLES, OR TASKS	CAN BE TASKS ONLY
THERE IS A MINIMUM THRESHOLD FOR THE AMOUNT OF EFFORT ASSOCIATED WITH A TASK; THEY SHOULD FALL WITHIN THE 1% -10% RULE	NO MINIMUM THRESHOLD. TASKS CAN BE ONE MINUTE OR LESS LONG; DURATION OFTEN SMALLER THAN 1%

WBS	TO-DO LIST
STATUS: CONTINUUM OF PERCENTAGE BETWEEN 0 AND 100%	0% COMPLETE OR 100% COMPLETE

5. Why is using consistent naming conventions for your deliverables, activities, and milestones important?

PRIMARILY IT FACILITATES COMMUNICATION WITH STAKEHOLDERS. ON A PRACTICAL NOTE, IT MAKES IT EASY TO DISTINGUISH PHASES FROM DELIVERABLES, TASKS, AND OTHER ELEMENTS OF THE WBS.

6. How do you know you have found the appropriate level of detail in your WBS? Why is finding the right level of detail important?

FINDING THE RIGHT LEVEL OF DETAIL IN A WBS OR SCHEDULE IS IMPORTANT BECAUSE IF YOU HAVE TOO MUCH DETAIL, WHILE THIS MAKES MINUTE-TO-MINUTE DECISIONS EASIER, YOU RISK LOSING THE OBJECTIVES. HAVING TOO MANY DETAILS ALSO MAKES IT MORE DIFFICULT TO KEEP THE SCHEDULE CURRENT. CONVERSELY, TOO FEW DETAILS AND THE PROJECT TEAM CAN LOSE CONTROL OVER THE PROJECT. THE BASIC GUIDELINES FOR AN APPROPRIATE LEVEL OF DETAIL INCLUDES:

- INCLUDE DETAIL NECESSARY FOR THE PROJECT MANAGER AND PROJECT TEAM TO MANAGE THE PROJECT EFFECTIVELY.
- DON'T INCLUDE ANYTHING THAT IS NOT GOING TO BE MAINTAINED OR KEPT UP TO DATE.
- INCLUDE DETAILS THAT MANAGEMENT WANTS REPORTS ON.
- USE REPORTING PERIODS TO GUIDE YOUR LEVEL OF DETAIL. TRY TO ALLOW FOR ONE PERIOD TO FIND AN ISSUE AND ANOTHER TO RESOLVE THE ISSUE.
- AS A GUIDE, USE THE 1-10% RULE TO GAUGE THE SIZE OF EACH TASK. IF GREATER THAN 10%, BREAK THE TASK INTO SMALLER ACTIVITIES TO FACILITATE CONTROL. IF THE TASK IS SMALLER THAN 1% OF THE PROJECT'S OVERALL DURATION, THEN GROUP THE TASKS TOGETHER AND MANAGE THEM AS A UNIT.

7. What is the difference between manually scheduled tasks and auto-scheduled tasks in the schedule? What are some of the advantages that manually scheduled tasks offer? What are some of the disadvantages?

PRIOR TO VERSION 2010, PROJECT ONLY HAD ONE MODE OF OPERATION AND THAT WAS AUTOMATIC SCHEDULING OF TASKS. WITH PROJECT 2010, MICROSOFT INTRODUCED MANUALLY SCHEDULED TASKS. MICROSOFT'S HOPE WAS THAT IT WOULD MOVE MANY PROJECT MANAGERS TO CONSIDER USING PROJECT RATHER

THAN EXCEL FOR SCHEDULING TASKS. MANY OF THE “EXCEL-LIKE” FEATURES IN PROJECT 2010 APPEALED TO THOSE NEW TO SCHEDULING. MANUALLY SCHEDULED TASKS PERMIT FREE FORM ENTRY OF INFORMATION INTO FIELDS LIKE THE DATE FIELD. IT ALSO, KEEPS PROJECT’S SCHEDULING ENGINE FROM AUTOMATICALLY MOVING TASKS AND DATES DUE TO LOGICAL DEPENDENCIES.

MANUALLY SCHEDULING A PROJECT DOESN’T TAKE ADVANTAGE OF PROJECT’S POWERFUL SCHEDULING ENGINE IN ORDER TO PERFORM THE HEAVY LIFTING SUCH AS RESCHEDULING TASKS TO RESPOND TO CHANGES. THIS INABILITY TO AUTOMATICALLY UPDATE TASKS SEVERELY LIMITS YOUR ABILITY TO FORECAST AFTER ACTUALS ARE ENTERED.

DESPITE THIS LIMITATION, MANUAL SCHEDULING CAN BE VERY USEFUL IN THE DEVELOPMENT OF YOUR SCHEDULE WHEN MANY OF THE DETAILS ARE STILL UNKNOWN. MANUAL SCHEDULING FACILITATES TOP-DOWN SCHEDULING AND ROLLING WAVE PLANNING.

8. Why would it be beneficial to export task lists to SharePoint 2013 with Project 2013?

BY EXPORTING TASKS TO A SHAREPOINT TASK LIST, YOU ARE TAKING ADVANTAGE OF SHAREPOINT’S COLLABORATIVE NATURE TO INCLUDE OTHER STAKEHOLDERS IN THE DEVELOPMENT OF YOUR SCHEDULE, WHERE THEY MIGHT NOT OTHERWISE HAVE ACCESS TO PROJECT 2013 AND MIGHT NOT BE ABLE TO DIRECTLY PARTICIPATE IN SCHEDULING ACTIVITIES.

Additional Practice:

For experience working with the features you’ve learned about in this chapter, we strongly suggest that you do the additional exercises for this chapter that are included in the Case Studies appendix, available to download in the WAV Download Resource Center at www.jrosspub.com.

Chapter 4: Entering Estimates

Review Questions:

1. Why is estimating the duration of project activities difficult?

ESTIMATING CAN BE DIFFICULT IF YOU CANNOT ACCESS EITHER RELEVANT HISTORICAL DOCUMENTATION OR THE STAKEHOLDERS AND SUBJECT MATTER EXPERTS, OR IF YOU LACK MINIMAL EXPERIENCE IN ESTIMATING; BUT IF YOU HAVE THESE ELEMENTS IN PLACE AND BREAKDOWN THE SCHEDULE TO AN APPROPRIATE LEVEL OF DETAIL, IT IS POSSIBLE.

2. You are the project manager. While working with your team members on task estimates, someone makes one of the following statements. What would you say?

Statement	Your response
Your team member says: "I can't give you an estimate because I can't predict the future!"	BREAK THE WORK DOWN INTO MANAGEABLE PIECES THAT YOU CAN ESTIMATE AND PROVIDE A RANGE OF ESTIMATES PER TASK
Your team member says: "Listen, we went over this already. I'm not going to give you any more estimates because my estimates are always off! My estimates don't help you anyway!"	ESTIMATES ARE NOT ACTUALS, SO WE DON'T EXPECT 100% ACCURACY. YOUR TASKS AND THEIR ESTIMATES ARE AN INTEGRAL PART OF OUR DYNAMIC SCHEDULE, WHICH ALLOWS US THROUGH THIS BOTTOM UP APPROACH TO OBTAIN AN ESTIMATE FOR THE ENTIRE PROJECT. THEY ALSO ALLOW US TO FORECAST THE CONSEQUENCES AS A RESULT OF UPDATES
Your executive says: "You are one of our most experienced and best project managers. Can't you do this project in three weeks?"	LET ME SHOW YOU THE DYNAMIC SCHEDULE WE CREATED; IT OUTLINES EACH TASK, THEIR ESTIMATE, AND ORDER. GIVEN THE SCOPE, DESIRED QUALITY, AND AVAILABLE RESOURCES THIS SCHEDULE IS REALISTIC.

3. In your own words, what is the difference between Duration and Work?

DURATION IS THE ELAPSED TIME AND WORK IS THE PERSON HOURS OR EFFORT

4. What formula is working behind the screens of Project 2013 that relates Duration to Work?

$DURATION * UNITS = WORK$

5. What is the difference between a pure work time estimate and a gross work time estimate?

PURE WORK TIME IS WORKING 100% OF YOUR TIME WITH 100% FOCUS ON THE PROJECT TASK. PURE WORK TIME IS 100% PRODUCTIVE TIME WITHOUT INTERRUPTIONS.

GROSS WORK TIME INCLUDES TIME SPENT ON THINGS OTHER THAN PROJECT TASKS

6. Somebody gives you an estimate of 100 person hours of effort for a task and says that the estimate assumes uninterrupted and fully focused work time. You just created a new project schedule that has all options set to the default settings in Project 2013.

What other fields or dialog boxes would you have to change in order to get a valid finish date forecast for this task from Project 2013?

IF YOU HAVE NOT ALREADY MADE THE ADJUSTMENTS TO THE PROJECT CALENDAR TO ACCOUNT FOR NON-WORKING TIME, IT WILL BE NECESSARY TO ADJUST THE PROJECT CALENDAR REDUCING THE NUMBER OF HOURS WORKED PER DAY. ALTERNATIVELY, AND IF NOT ALREADY ADJUSTED, YOU CAN DECREASE THE MAX UNITS OF THE RESOURCE TO REFLECT THAT THEY WILL WORK WITH PURE WORK TIME ESTIMATES.

In which field would you enter this estimate in Project 2013?

IN THE TASK-RELATED “**WORK**” FIELD SINCE IT IS IN PERSON HOURS.

7. What are manually scheduled tasks? How can these be used in the rolling wave approach for estimating when some information is unavailable for future activities.

AN UNSCHEDULED TASK OR MANUALLY SCHEDULED TASK IS NOT DRIVEN BY THE SCHEDULING ENGINE. IT LEAVES FIELDS SUCH AS DURATION, START, AND FINISH BLANK, AND ALLOWS YOU TO INPUT ANY VALUE AS A PLACEHOLDER. WHEN USING THE ROLLING WAVE APPROACH TO PLANNING YOUR SCHEDULE, YOU CAN CREATE UNSCHEDULED TASKS TO REPRESENT ACTIVITIES THAT WILL OCCUR IN THE FUTURE AND ARE DIFFICULT TO PLAN UNTIL AFTER THE PLANNING WINDOW HAS MOVED FORWARD.

Additional Practice:

For experience working with the features you’ve learned about in this chapter, we strongly suggest that you do the additional exercises for this chapter that are included in Case Studies appendix, available to download in the WAV Download Resource Center at www.jrosspub.com.

Chapter 5: Entering Dependencies

Review Questions:

1. Why should a project manager set all the dependencies in her schedule?

WITH A DYNAMIC SCHEDULE, WHEN ONE THING CHANGES IN YOUR PROJECT, YOU ONLY HAVE TO CHANGE ONE FIELD IN PROJECT 2013 AND THE SOFTWARE WILL CREATE VALID FORECASTS FOR ALL IMPACTED TASKS. THIS IS THE FUNDAMENTAL PRINCIPLE OF DYNAMIC SCHEDULES. TO CREATE THE DYNAMIC SCHEDULE YOU NEED TO SET ALL THE RELATIONSHIPS BETWEEN TASKS.

2. How are dependencies handled in manually scheduled tasks?

MANUALLY SCHEDULED TASKS RESPECT THE DEPENDENCY, WHEN YOU FIRST ESTABLISH THE DEPENDENCY. BUT IF YOU CHANGE SOMETHING IN A MANUALLY SCHEDULED TASK, FOR EXAMPLE ITS DURATION, ANY PREDECESSOR TASKS WILL MAINTAIN THE SAME PREVIOUS DATES AND WON'T HONOR THE NEW DATE UNLESS YOU USE THE RESPECT LINKS COMMAND (TASK TAB, SCHEDULE GROUP).

3. What is the difference between **Duration**, **Start**, and **Finish** fields, versus **Scheduled Duration**, **Scheduled Start**, and **Scheduled Finish** fields?

THE FIELDS: **SCHEDULED DURATION**, **SCHEDULED START**, AND **SCHEDULED FINISH** ARE ADDED TO MANAGE MANUALLY SCHEDULED TASKS. THESE ARE THE EQUIVALENT TO THE **DURATION**, **START**, AND **FINISH** FIELDS FOR AUTOMATICALLY SCHEDULED TASKS. WHEN YOU ESTABLISH A DEPENDENCY AND ENTER A **DURATION** FOR MANUALLY SCHEDULED TASKS, THE **SCHEDULED START** AND **SCHEDULED FINISH** FIELDS ARE COPIED TO THE **START** AND **FINISH** FIELDS.

4. What are the criteria for a good and solid network of dependencies that creates an entirely dynamic schedule?

CRITERIA FOR A GOOD AND SOLID NETWORK OF DEPENDENCIES THAT CREATES AN ENTIRELY DYNAMIC SCHEDULE INCLUDE:

- THE NETWORK OF DEPENDENCIES IS COMPLETE
 - THE NETWORK LOGIC IS SIMPLE ENOUGH AND MAKES SENSE
 - THE NETWORK IS FREE OF CIRCULAR DEPENDENCIES
 - THE RESOURCE DEPENDENCIES CONSIDERED
 - MANUALLY-SCHEDULED TASK WARNINGS ARE CONSIDERED OR RESOLVED IN YOUR LOGIC
 - THE NUMBER OF CONSTRAINTS HAS BEEN MINIMIZED
5. If you are dependent upon supplies to arrive for one deliverable in your project, what would you recommend in terms of scheduling this situation?

CREATE AN EXTERNAL DEPENDENCY MILESTONE EVENT.

6. This chapter covered multiple ways of setting dependencies. Please name at least 4 of them.

FS, SS, FF, AND SF.

7. Are the following valid entries in the lag field? Yes or no? Why?

a. 5d

YES, THIS WILL BE INTERPRETED AS +5 DAYS

b. -3d

YES, THIS WILL BE INTERPRETED AS -3 DAYS (NEGATIVE LAG OR LEAD)

c. +30%

YES, THIS WILL BE INTERPRETED AS +30% OF THE DURATION OF THE PREDECESSOR AND CREATE AN OVERLAP

d. +5ed

YES, THIS WILL BE INTERPRETED AS +5 ELAPSED DAYS; IF THE SUCCESSOR HAS AN ELAPSED DURATION, IT CAN START DURING NON-WORKING TIME (EVENING/ WEEKEND)

8. Should you allow logic on summary tasks? Why or why not?

THERE ARE ADVANTAGES AND DISADVANTAGES OF SETTING DEPENDENCIES ON SUMMARY TASKS.

ADVANTAGES OF SUMMARY DEPENDENCIES

- SETTING DEPENDENCIES ON SUMMARY TASKS SEEMS EASIER AND QUICKER
- SUMMARY LOGIC IS HIGH-LEVEL LOGIC THAT EXECUTIVES SOMETIMES LIKE TO SEE
- IN CERTAIN SITUATIONS, YOU CAN MAKE DO WITH ONE SUMMARY DEPENDENCY INSTEAD OF SETTING SEVERAL DEPENDENCIES ON DETAIL TASKS. WHEN DETAIL TASKS ALL START AT THE SAME TIME INDEPENDENTLY OF EACH OTHER, ONE DEPENDENCY ON THEIR SUMMARY TASK MAKES SENSE.

DISADVANTAGES OF SUMMARY DEPENDENCIES

- IT CAN BE DIFFICULT TO CHECK WHETHER THE NETWORK OF DEPENDENCIES IS COMPLETE.
- THE CRITICAL PATH IS MORE DIFFICULT TO FIND WHEN THE DEPENDENCIES RUN OVER DETAIL TASKS AND SUMMARY TASKS IN PARALLEL.
- ON SUMMARY TASKS, YOU CAN ONLY SET ROUGH, HIGH-LEVEL LOGIC. HIGH-LEVEL LOGIC OFTEN DOES NOT ALLOW YOU TO CREATE THE TIGHTEST SCHEDULE POSSIBLE.

- NOT ALL TYPES OF DEPENDENCIES CAN BE USED ON SUMMARY TASKS; YOU CANNOT LINK FF OR SF TO SUMMARY TASKS.

EVEN THOUGH THERE SEEMS TO BE SOME ADVANTAGES TO SETTING DEPENDENCIES ON SUMMARY TASKS, THEY DON'T MEASURE UP AGAINST THE DISADVANTAGES. TIME GAINED WITH SETTING FEWER DEPENDENCIES IS LOST THREEFOLD WHEN CHECKING THE LOGIC AND ANALYZING THE CRITICAL PATH. THEREFORE IT IS BETTER TO KEEP THE DEPENDENCY LOGIC ON DETAIL TASKS AND MILESTONES ONLY.

9. How would you schedule ordering materials and receiving materials with a delivery time of 3 weeks? Would you use a **Finish-to-Start** dependency with a 3-week lag? Or would you split the task bar for 3 weeks? Explain your answer.

FINISH-TO-START + 3 WEEKS.

YOU SHOULD USE A FINISH-TO-START DEPENDENCY WITH A 3-WEEK LAG RATHER THAN SPLITTING THE TASK BAR FOR 3 WEEKS. THIS WILL PROVIDE A MORE DYNAMIC SCHEDULE BECAUSE YOU CAN'T SET DEPENDENCIES ON THE INSIDE OF SPLIT TASKS.

10. For each of the following situations determine:

- Which task is the predecessor and successor: A or B?
- What type of dependency you need: FS, SS, FF, or SF?
- Whether you would add a lead or a lag to the dependency? If so, as a relative lag or absolute lag? And how much?

	Predecessor (A or B)	Type of Dependency	Add Lag? Relative/absolute? How much?
You <i>gather requirements</i> (A) and then you <i>analyze requirements</i> (B).	A	FS	0 DAYS, OR PERHAPS WITH OVERLAP OF 30%, SINCE SOME ANALYSIS CAN BE DONE WHEN THE FIRST REQUIREMENTS ARE KNOWN
After you <i>apply for a permit</i> (A), you have to wait 3 weeks for <i>permit received</i> (B).	A	FS	+3 W
Halfway through <i>perform system analysis</i> (A) we typically <i>start programming code</i> (B).	A	FS	-50%
You have to <i>pour foundation</i> (A) and let the concrete dry before you <i>lay bricks</i> (B) to erect the walls.	A	FS	+4 DAY LAG TO LET THE CONCRETE CURE

	Predecessor (A or B)	Type of Dependency	Add Lag? Relative/absolute? How much?
One day after the finish of <i>conduct courses</i> (A), <i>write evaluation report</i> (B) has to be completed.	A	FF	+1 DAY
<i>Prepare for the PMP exam</i> (A) and <i>take the PMP exam</i> (B).	B	SF	0 DAYS

11. You have a task, *test unit*, with a 10-day duration, and you need to decide between using a FS-5d or a SS+5d dependency with this task as the predecessor. The FS-5d dependency will give the successor a different start date than the SS+5d when:
- The start date of *test unit* changes.
NO, THE START DATE WILL BE THE SAME
 - The finish date of *test unit* changes (while its start date stays the same)
YES, THE FS WILL BE AFFECTED, BUT NOT THE SS
 - The duration of *test unit* changes
YES, THE FS WILL BE AFFECTED BUT NOT THE SS
 - The finish date or the duration of *test unit* change
YES, BEST AND MOST COMPLETE ANSWER
12. You have two tasks, *survey clients* and *summarize survey results*, and you need to decide between using a FS-30% or a SS+70% dependency between the two tasks. The FS-30% dependency will cause a different start date of the successor than the SS+70% dependency when:
- The start date of *survey clients* changes
NO, THE TWO DEPENDENCIES WILL WORK SIMILARLY
 - The finish date of *survey clients* changes (while its start date stays the same)
NO, THE TWO DEPENDENCIES WILL WORK SIMILARLY
 - The duration of *survey clients* changes
NO, THE TWO DEPENDENCIES WILL WORK SIMILARLY
 - None of the above will cause an impact between FS-30% and SS+70%
YES

Additional Practice:

For experience working with the features you've learned about in this chapter, we strongly suggest that you do the additional exercises for this chapter that are included in the Case Studies appendix, available to download in the WAV Download Resource Center at www.jrosspub.com.

Chapter 6: Entering Deadlines, Constraints, and Task Calendars

Review Questions:

1. What is the difference between how Project 2013 treats constraints and deadline dates?

EVEN THOUGH BOTH CAN BE USED FOR SIMILAR PURPOSES, CONSTRAINTS WILL IMPACT THE SCHEDULING OF TASKS IN YOUR PROJECT BY RESTRICTING THE DYNAMIC NATURE IF YOU ENTER CHANGES. ON THE OTHER HAND, DEADLINES ALLOW FOR DYNAMIC SCHEDULING, AND IF A TASK'S FINISH DATE EXCEEDS THE DEADLINE DATE, A WARNING WILL APPEAR IN THE INDICATOR COLUMN.

2. What is the question to be answered from a project model that is scheduled forward? What about one that is scheduled backward?

FORWARD SCHEDULING TELLS YOU THE EXPECTED FINISH DATE FOR THE PROJECT. UNDER FORWARD SCHEDULING, TASKS ARE SCHEDULED AS SOON AS POSSIBLE (ASAP) BY DEFAULT.

BACKWARD SCHEDULING (FROM THE PROJECT FINISH DATE) WILL TELL YOU THE WHEN TO START THE PROJECT TO MEET THIS DATE. UNDER BACKWARD SCHEDULING TASKS ARE SCHEDULED AS LATE AS POSSIBLE (ALAP) BY DEFAULT.

3. Which constraint types will possibly create scheduling conflicts for the start successor task when predecessor task is late?

FINISH NO LATER THAN (FNLT)
 START NO LATER THAN (SNLT)
 MUST START ON (MSO)
 MUST FINISH ON (MFO)

4. Would you set a constraint in the following situations? If so, which type of constraint? If you would recommend using a constraint, indicate the type in the table below.

Situation	Type of Constraint
You have a board meeting coming up on January 16 in which a go/no-go decision will be taken on the next stage of your project. The board expects certain reports to be ready.	A SNET CONSTRAINT FOR THE BOARD MEETING WILL SET THE DATE AND WILL SHOW THE TIME BETWEEN THE LAST TASK AND THE BOARD MEETING TASK. A MFO OR MSO CONSTRAINTS WILL WORK FIXING THE DATE FOR THE BOARD MEETING CONSIDERING THE DECISION WILL BE AN AUTOMATIC NO-GO IF THE INFO IS NOT READY. A DEADLINE WILL SET THE DATE FOR THE BOARD MEETING AND PROVIDE WARNINGS IF THE FINISH DATE EXCEEDS THE DEADLINE THE COMBINATION OF A SNET AND A DEADLINE IS THE BEST CHOICE AND KEEPS THE DYNAMIC SCHEDULE NATURE.

Situation	Type of Constraint
A vendor needs to deliver custom-made computers to you that you need for testing activities in your project (computers delivered).	THIS IS AN EXTERNAL DEPENDENCY FOR WHICH AN EXTRA MILESTONE SHOULD BE CREATED TO CAPTURE THE EVENT OF THE DELIVERY. A SNET CONSTRAINT SHOULD BE SET ON THIS MILESTONE.
You have planned a “project burial” ceremony to close off your project. You have invited senior executives and other dignitaries for this special day.	THIS IS A PUBLIC CEREMONY THAT MIGHT BE EMBARRASSING IF THE DATE IS NOT MET (SET MSO CONSTRAINT). IF THE CEREMONY WOULD STILL TAKE PLACE EVEN IF THE PROJECT WAS NOT ENTIRELY COMPLETED, YOU COULD USE DEADLINE TO MEASURE HOW DELAYED IS THE PROJECT.
A testing lab is only available to your project from March 1 to March 15.	THE TESTING TASK COULD LAST 1 OR 15 DAYS. SO INSTEAD OF CREATING A CONSTRAINED TASK, YOU CAN SET A TASK CALENDAR ON THE TEST TASK ALLOWING THE TASK TO MOVE BETWEEN THESE DAYS OR YOU CAN ENTER <i>THE LAB</i> AS A RESOURCE AND THEN SET TEMPORARY AVAILABILITY FOR THE RESOURCE WHEN IT IS AVAILABLE IN THE RESOURCE INFORMATION DIALOG BOX. NO CONSTRAINT WOULD BE NEEDED.

5. Why would you want to minimize the number of constraint dates in your project model?

USING CONSTRAINTS OTHER THAN ASAP RESTRICTS SCHEDULE MOVEMENT. FOR EXAMPLE IF A PREDECESSOR FINISH DATE SLIPS, PROJECT 2013 WILL PUSH OUT THE START OF THE ASAP SUCCESSOR TASK. THIS WILL CONTINUE THROUGHOUT THE SCHEDULE LIKE A FALLING DOMINO EFFECT.

6. As a car manufacturer, you would like to use an outdoor test lab that consists of a 10-mile highway stretch on which different weather conditions can be simulated. The lab is fully booked, but there is a window of opportunity for your project from November 10-17 in 2015 or after April 1st in 2016. How would you model this in Project 2013?

YOU CAN SET A TASK CALENDAR ON THE TEST TASK OR YOU CAN ENTER *THE LAB* AS A RESOURCE AND THEN SET TEMPORARY AVAILABILITY FOR THE RESOURCE WHEN IT IS AVAILABLE ON THE RESOURCE INFORMATION DIALOG BOX. NO CONSTRAINT NEEDED.

Additional Practice:

For experience working with the features you’ve learned about in this chapter, we strongly suggest that you do the additional exercises for this chapter that are included in the Case Studies appendix, available to download in the WAV Download Resource Center at www.jrosspub.com.

Chapter 7: Entering Resources

Review Questions:

Review A

Is it possible to model the following cost situations in Project 2013? If so, how? If not, what would be a possible workaround?

1. Up-front fee of \$500 for a bulldozer at a rate of \$1,000/d for onsite work

UP-FRONT FEE OF \$500 FOR A BULLDOZER **COST PER USE** AT A RATE OF \$1000/D FOR ONSITE WORK **STANDARD RATE**.

2. A consultant who charges \$400/d until January 1, then \$450/d

STANDARD RATE IN THE COST RATE TABLE IN THE **RESOURCE INFORMATION** DIALOG, **COSTS** TAB, \$400/d ON ROW 1, AND ON ROW 2 INDICATE AN **EFFECTIVE DATE** OF JANUARY 1 FOR THE **STANDARD RATE** OF \$450/d.

3. Penalty of \$1,000/d for delivering late

CREATE A *PENALTY* RESOURCE. IN THE COST RATE TABLE (**RESOURCE INFORMATION** DIALOG, **COSTS** TAB) , ON ROW 2 SET THE **EFFECTIVE DATE** TO THE AGREED UPON CONTRACT DATE AND ENTER A **STANDARD RATE** OF \$1000/D. ASSIGN THE *PENALTY* RESOURCE AGAINST THE SUMMARY TASK THAT WILL SLIP PAST THE CONTRACT DATE.

4. Harry, who works as a business analyst at \$500/d and as a systems analyst for \$400/d

IN THE **RESOURCE INFORMATION** DIALOG, **COSTS** TAB, **COST RATE TABLE A**(BUSINESS ANALYST) RATE \$500/D AND **B** (SYSTEM ANALYST) FOR HARRY \$400/D. USE THE **NOTES** TAB TO DESCRIBE THE RATES.

5. Overtime hours accumulated throughout the year and paid at the end of the year

THESE HOURS ARE CLEARLY NOT TREATED AS PROJECT-RELATED AND **SHOULD NOT** BE ENTERED INTO PROJECT 2013. PROJECT 2013 IS NOT AN HR SYSTEM.

6. Courier costs for packages

YOU COULD CREATE A **COST** RESOURCE FOR COURIER COSTS OR ENTER THE COST IN THE TASK- RELATED **FIXED COST** FIELD.

7. Low and high season hotel room rates

ENTER A **WORK** RESOURCE WITH A **STANDARD RATE** AND ADJUST THE **COST RATE TABLES** FOR THE LOW AND HIGH SEASON DATES IN PROJECT 2013.

Review B

Is it possible to model the following availability situations in Project 2013? If so, how?

1. Movers who only work on weekends

YES, SET THE **RESOURCE CALENDAR** APPROPRIATELY.

2. A server that needs to be tested for 48 continuous hours starting on a Friday

YES, SET THE **RESOURCE CALENDAR** AND THE **TASK CALENDAR** TO THE **24 HOUR CALENDAR**.

NOTE: AT THE TASK LEVEL, IT IS POSSIBLE TO IGNORE RESOURCE CALENDARS. TO DO THIS IN THE **TASK INFORMATION** DIALOG (DOUBLE CLICK THE TASK), IN THE **ADVANCED TAB**, SELECT **SCHEDULING IGNORES RESOURCE CALENDARS**.

3. Somebody who works a compressed workweek of 10 hours per day and 4 days per week

YES, INCREASE THE **WORKING TIMES** FOR MONDAY-THURSDAY TO **10 HOURS PER DAY** AND SET FRIDAY TO **NON-WORKING** IN THE RESOURCE'S CALENDAR

4. An expert resource who will be available to your project for 10% in March, 20% in April and 50% in May; after that, she is unavailable

YES, SET THE **RESOURCE AVAILABILITY** PROFILE ACCORDINGLY BY DOUBLE-CLICKING ON THE **RESOURCE** ON THE **RESOURCE SHEET** AND SELECTING THE **GENERAL TAB**.

5. A part-time resource who only works mornings on Tuesdays and Thursdays

YES, YOU CAN SET THIS IN THE **RESOURCE CALENDAR**.

Review C

Which of the following resources should have its workload leveled in Project 2013? Enter **Yes** or **No** in the appropriate cell and explain your answer.

Resource	Level Workloads?
1. Expert	YES, EXPERTS ARE SCARCE BY DEFINITION AND SHOULD BE LEVELED
2. Computer	YES, IF YOU WANT TO MAKE SURE THE COMPUTER IS NOT OVER-ALLOCATED (USED BY MORE THAN ONE PERSON AT A TIME). ENTER AS A WORK RESOURCE. NO, IF YOU DON'T WANT TO ADD ITS EFFORT TO THE TOTAL WORK. ENTER AS A MATERIAL RESOURCE.
3. Mortar	NO, MATERIALS DO NOT HAVE CAPACITY AND ARE NEVER LEVELED
4. Boardroom	YES, IF YOU WANT TO MAKE SURE THE BOARDROOM IS NOT OVER-ALLOCATED (USED BY MORE THAN ONE GROUP AT A TIME). NO, IF YOU DON'T WANT TO ADD ITS EFFORT TO THE TOTAL WORK.

Additional Practice:

For experience working with the features you've learned about in this chapter, we strongly suggest that you review the Case Studies appendix, available to download in the WAV Download Resource Center at www.jrosspub.com.

Chapter 8: Entering Assignments

Review Questions:

Review A

1. What is the definition of an assignment?

WHEN A RELATIONSHIP EXISTS BETWEEN A TASK AND A RESOURCE, YOU HAVE AN ASSIGNMENT. AN ASSIGNMENT IDENTIFIES WHICH RESOURCE, IN MANY CASES PERSON (OR PEOPLE), WILL WORK ON A TASK. ASSIGNING RESOURCES TO TASKS IS ALSO CALLED RESOURCE LOADING, AND WHEN YOU'RE DONE YOU HAVE A RESOURCE-LOADED SCHEDULE. AFTER RESOURCES ARE ASSIGNED, IT IS IMPORTANT TO NOTE THAT A NEW COLLECTION OF ASSIGNMENT FIELDS GETS POPULATED.

2. In your own words, describe what the following fields represent:

- a. Units field in the Task Form

THIS REPRESENTS THE PERCENTAGE OF WORKING HOURS THE RESOURCE IS ASSIGNED ON THE TASK

- b. Units field in the Resource Information dialog, General tab

THIS REPRESENTS THE AVAILABILITY FOR THE RESOURCE UP TO THE NEXT EFFECTIVE TO DATE

- c. Max Units field in the Resource Sheet

THE MAXIMUM AVAILABILITY A RESOURCE CAN BE ASSIGNED AND NOT BE CONSIDERED OVER ALLOCATED ON THE CURRENT TIME PERIOD.

- d. Work field in the Gantt Chart

THE WORK FIELD SHOWS THE TOTAL AMOUNT OF TIME SCHEDULED ON A TASK FOR ALL ASSIGNED RESOURCES

- e. Work field in the Task Form

THIS IS WHERE YOU CAN SEE THE ASSIGNMENT RELATED WORK FIELD, WHICH DISPLAYS THE EFFORT OF ONE RESOURCE ON ONE TASKS

- f. Work field in the Resource Sheet

THE SUM OF ALL WORK THE RESOURCE IS SCHEDULED FOR ON ALL ASSIGNED TASKS. FOR MATERIAL RESOURCES, IT IS THE TOTAL NUMBER OF UNITS USED IN THE PROJECT.

3. In your own words, what is a Work Contour?

WORK CONTOUR DETERMINES HOW THE WORK FOR A TASK IS SPREAD OVER TIME. WORK COUNTOUR MODIFICATIONS CAN BE DONE IN THE ASSIGNMENT INFORMATION DIALOG FROM TASK USAGE OR RESOUCUE USAGE VIEWS.

4. A project manager realizes that she wants to model her project on a high level. She will only enter consolidated resources (pooled resources) in her Resource Sheet. What setting would you recommend she use in the “Show assignment units as” choice in the Project Options?

FOR CONSOLIDATED RESOURCES WE RECOMMEND SETTING **DECIMALS**, SINCE 10 MOVERS ARE EASIER TO UNDERSTAND THAN 1000% MOVERS.

5. What are the three task types? How does each task type function? How would you use this feature of Project 2013?

FIXED DURATION, FIXED WORK, AND FIXED UNITS ARE THE TASK TYPES. EACH TASK TYPE FIXES ONE VARIABLE SUCH AS DURATION, WORK, OR UNITS, AS THE OTHER TWO VARIABLES CHANGE, ONE BY THE CHANGES MADE BY THE USER AND THE OTHER IS CALCULATED BY MICROSOFT PROJECT BY USING THE FORMULA $DURATION * UNITS = WORK$.

IF A TASK HAS SET **FIXED DURATION**, ADDING MORE RESOURCES OR MORE WORK WILL NOT SHORTEN THE DURATION. FOR AN EXAMPLE, THE PRINT SHOP HAS INDICATED THAT IT WILL TAKE TWO DAYS TO PRINT YOUR TRAINING MANUALS, SO ADDING MORE PEOPLE TO EXPEDITE THE PROCESS WILL ONLY INCREASE THE AMOUNT OF WORK. THE RESULTS COULD VARY IF IN ADDITION WE HAVE EFFORT DRIVEN ACTIVE.

A TASK WITH THE **FIXED WORK** TASK TYPE WILL KEEP THE EFFORT CONSTANT WHILE ADDING MORE RESOURCES OR MORE DURATION. FOR EXAMPLE, WRITING A REPORT REQUIRES A WORK EFFORT OF EIGHT HOURS, ONE PERSON ASSIGNED FULL TIME WILL CONCLUDE THE REPORT IN ONE DAY, IF TWO PERSONS ARE ASSIGNED, THE DURATION WILL BE 0.5 DAYS WHILE THE WORK WILL REMAIN FIXED TO EIGHT HOURS.

A TASK WITH THE **FIXED UNITS** TASK TYPE, IS APPROPRIATE WHEN NO MORE RESOURCES CAN BE USED WHILE ADJUSTING THE WORK AND THE DURATION. FOR EXAMPLE, PREPARING A BUDGET IS A UNIQUE TASK FOR A MANAGER, CHANGING THE DURATION WILL CALCULATE THE AMOUNT OF WORK, WHILE CHANGING THE WORK, IT WILL RETURN THE CALCULATED DURATION. THE RESULTS COULD VARY IF THE EFFORT DRIVEN IS ACTIVE.

6. In your own words, what are the three rules that will help you control what Project 2013 does when creating and changing assignments?

-
- ENTER THE FIRST VALUE AS A DURATION ESTIMATE OR WORK ESTIMATE AND **FIX** THAT NUMBER BY SETTING THE TASK TYPE ACCORDINGLY. THIS WILL PREVENT PROJECT 2013 FROM CHANGING THE NUMBER.
 - PROVIDE THE SECOND VALUE IN THE FORMULA $DURATION * UNITS = WORK$ AND LET PROJECT 2013 CALCULATE THE THIRD VALUE. ALWAYS PROVIDE ONLY TWO OF THE THREE VALUES BY PROVIDING BOTH THE DURATION AND THE WORK, PROJECT 2013 ONLY NEEDS TO KNOW WHO WILL DO THE TASK AND IT WILL CALCULATE THE NUMBER OF RESOURCES NEEDED (UNITS).
 - BEFORE MAKING A CHANGE TO ANY OF THE THREE VALUES IN THE FORMULA, RECONSIDER THE TASK TYPE BY ASKING YOURSELF: *WHAT TYPE OF TASK DO I NEED FOR THIS PARTICULAR CHANGE?*
7. Before you make a change to an assignment, what question should you ask yourself and what field(s) should you check?

DETERMINE THE APPROPRIATE TASK TYPE BY ASKING YOURSELF: *I WILL BE MAKING A CHANGE TO A VALUE IN THE FORMULA; WHICH VALUE DO I WANT TO KEEP THE SAME?* THE ANSWER TO THIS QUESTION WILL TELL YOU WHICH TASK TYPE YOU NEED.

AVOID CHANGING THE VARIABLE THAT IS FIXED IF YOU WANT TO PREDICT WHAT PROJECT 2013 WILL DO.

BEFORE YOU CHANGE A VARIABLE, SET OR CHANGE THE TASK TYPE AND EFFORT DRIVEN CHOICES, ACCEPT THAT CHANGE, AND THEN CHANGE THE VARIABLE.

WHEN THERE ARE MULTIPLE, UNEVEN ASSIGNMENTS, ONE OR MORE OF THE ASSIGNMENTS CAN DRIVE THE DURATION OF THE TASK. BEFORE YOU MAKE A CHANGE, YOU SHOULD IDENTIFY WHICH ASSIGNMENT DRIVES THE DURATION OF THE TASK. CONSIDER CHANGING ASSIGNMENT FIELDS INSTEAD OF TASK FIELDS.

EXISTING RESOURCE ASSIGNMENTS WILL KEEP THE UNITS THE SAME AND UPDATE THE PEAK UNITS. A RESOURCE WILL BE CONSIDERED OVER-ALLOCATED IF THE SUM OF ITS PEAK UNITS – ACROSS ALL HIS TASKS OR ASSIGNMENTS—IS GREATER THAN ITS MAX UNITS DECLARED IN THE RESOURCE SHEET.

8. Would you recommend making multiple, uneven assignments to many tasks in your schedule? Justify your answer in terms of pros and cons.

PROS

- IT ALLOWS YOU TO CREATE A HIGH-LEVEL SCHEDULE WHICH CAN BE NECESSARY AT TIMES

CONS

- IT MAKES MANUAL RESOURCE LEVELING MORE DIFFICULT
 - IT MAY CREATE AMBIGUITY IN RESOURCE ASSIGNMENTS, E.G., WHO IS THE LEAD?
 - IT PREVENTS YOU FROM CREATING A DETAILED, DYNAMIC SCHEDULE IN GENERAL.
9. Would you recommend assigning resources to summary tasks? Justify your answer in terms of pros and cons.

PROJECT 2013 ALLOWS YOU TO ASSIGN RESOURCES TO SUMMARY TASKS, BUT SOONER OR LATER YOU WILL END UP WITH OVER-ALLOCATIONS THAT CAN'T BE RESOLVED EXCEPT BY REMOVING THE RESOURCE FROM THE SUMMARY TASK.

PROS:

- EASY TO ASSIGN TO A SUMMARY TASK WHERE ALL DETAIL TASKS ARE SCHEDULED IN SEQUENCE WITHOUT GAPS AND ALL ARE DONE BY THE SAME RESOURCE.
- ASSIGNING RESOURCES TO A RECURRING SUMMARY TASK WILL TRANSFER THESE ASSIGNMENTS TO THE DETAIL TASKS.

CONS:

- ASSIGNING A RESOURCE FULL-TIME TO A SUMMARY TASK AND ALSO TO ONE OF ITS DETAIL TASKS CAUSES AN OVERALLOCATION THAT CAN'T BE SOLVED BY PROJECT 2013 UNLESS YOU REMOVE THE RESOURCE FROM THE SUMMARY TASK.
 - UPDATING SCHEDULES WITH SUMMARY TASKS ASSIGNMENTS IS MORE CUMBERSOME THAN WHEN ALL ASSIGNMENTS ARE ON THE LOWEST LEVEL.
10. When you assign a resource to a recurring summary task with the Assign Resources dialog, what will Project 2013 automatically do?

IF YOU ASSIGN A RESOURCE TO A RECURRING SUMMARY TASK WITH THE **ASSIGN RESOURCES** TOOL, THE ASSIGNMENTS ARE IMMEDIATELY TRANSFERRED TO THE DETAIL TASKS BY PROJECT 2013.

11. A resource is writing two different documents concurrently and you cannot plan or predict when he will be working on one or the other. How would you model this situation in Project 2013? In particular, what tasks and assignments would you create and what number of resource units would you assign?

YOU CAN CREATE TWO TASKS AND SCHEDULE THEM IN PARALLEL, THEN ASSIGN THE WRITER TO BOTH TASKS AT 50% OF HIS AVAILABILITY.

Review B

Read the following situations and determine if you will likely make your first estimate in person days' work (PD), business day's duration (BD) or elapsed days duration (ED) and explain why. Indicate which type of task you recommend: Fixed Duration (FD), Fixed Units (FU) or Fixed Work (FW), and explain why.

	PD, BD or ED? Why?	FD, FU or FW? Why?
1. Writing a 10 page report that normally takes a person 4 hours per page to produce	PD.	FW. EFFORT IS FIXED. FW ALLOWS SCENARIO DEVELOPMENT WITH DIFFERENT RESOURCE UNITS.
2. One load to be transported over a distance of 4,000 miles with one driver	PD.	FW. THE DRIVER WILL HAVE TO SPEND A CERTAIN NUMBER OF HOURS AT THE WHEEL TO GET THERE.
3. One package that has to be flown a distance of over 4,000 miles and has to arrive in 2 working days	BD	FD. DURATION IS GIVEN AND NEEDS TO BE TREATED AS FIXED
4. A house painter who is asked for a fixed price quote and the earliest end date for painting a family home	PD	FW. THIS ALLOWS YOU TO DEVELOP DIFFERENT SCENARIOS WITH DIFFERENT RESOURCE LOADING TO FIND THE EARLIEST DATE.
5. A contractor gives a painter a maximum of 2 weeks to finish painting a building	BD	FD. BECAUSE THE CONTRACTOR SUBCONTRACTS THE WORK, EFFORT AND RESOURCE LEVELING ARE LESS OF AN ISSUE.
6. Backing up a computer system before the conversion to a new operating system, where the backing up requires little supervision once started	ED; GOES ON 24 HOURS PER DAY	FD. DURATION IS NOT DEPENDENT ON NUMBER OF RESOURCES ASSIGNED, AND SHOULD NOT BE SCHEDULED WITHIN THE CALENDAR WORKING TIMES.
7. A meeting with a presentation to all team members	BD	FD. DURATIONS ARE TYPICALLY FIXED WHEN A GROUP OF PEOPLE IS ASSIGNED.

Additional Practice:

For experience working with the features you've learned about in this chapter, we strongly suggest that you do the additional exercises for this chapter that are included in Case Studies appendix, available to download in the WAV Download Resource Center at www.jrosspub.com.

Chapter 9: Optimizing the Schedule

Review Questions:

1. We described three optimization approaches in this chapter: optimizing for time; optimizing for time and cost; and optimizing for time, cost, and resources.

a. What are the main differences between these approaches?

OPTIMIZING FOR TIME ASSUMES UNLIMITED RESOURCES; THE OTHER APPROACHES WILL NOT ASSUME THAT YOU HAVE ACCESS TO UNLIMITED RESOURCES.

b. Describe the situations in which you should apply each.

OPTIMIZING FOR TIME DOES NOT CONSIDER COST IS NOT YOUR PRIMARY CONCERN AND THAT YOU ONLY NEED TO CONSIDER THE FORCES OF QUALITY, SCOPE, RISK AND, TIME. THE COMMON TECHNIQUE USED IN THIS SITUATION IS THE CRITICAL PATH METHOD (CPM).

OPTIMIZING FOR TIME & COST IS APPROPRIATE IF YOU HAVE A LIMITED BUDGET AND COST IS YOUR PRIMARY CONCERN

OPTIMIZING FOR TIME, COST & RESOURCES ALSO CONSIDERS THE AVAILABILITY AND CAPACITY OF RESOURCES IN ORDER TO DERIVE A FEASIBLE SCHEDULE FOR YOUR PROJECT

c. What are the common techniques used in each approach?

IN ALL THREE WE CONSIDER QUALITY, SCOPE, AND RISK BUT BECAUSE THESE DIMENSIONS DON'T DIFFERENTIATE THE APPROACHES, WE HAVEN'T INCLUDED THE WORDS SCOPE, QUALITY, OR RISK IN THE APPROACH NAMES.

2. Total slack is:

a. The amount of time a task can move freely without affecting its successors.

NO, THIS IS THE DEFINITION OF FREE SLACK

b. The difference between the late finish date and early finish date of the task.

YES

c. The amount of time in which the resource has to complete the task.

NO, THIS IS KNOWN AS THE DURATION OF THE TASK (OR ASSIGNMENT)

d. The difference between the early start of the earliest successor and the early finish date of the task.

NO, THIS DIFFERENCE IS MEANINGLESS

3. You receive a schedule and notice that the project finish milestone has a negative Total Slack of ten days. In your own words, what does this mean?

THE NEGATIVE 10D TOTAL SLACK MEANS THAT THE PROJECT DEADLINE WILL BE MISSED BY 10 BUSINESS DAYS OR THAT THE PROJECT SHOULD START 10 DAYS EARLIER TO MEET THE DEADLINE DUE TO A CONSTRAINT OR DEADLINE IN THE CRITICAL PATH.

4. There are six possible causes for fragmentation of the critical path; list four of them.
 - UNAVAILABILITY OF RESOURCES
 - SCHEDULE CONSTRAINTS AND DEADLINES
 - ELAPSED DURATIONS
 - TASK CALENDARS
 - EXTERNAL PREDECESSORS
 - WORKLOAD LEVELING
5. When optimizing for time:
 - a. What are the six process steps for shortening the critical path?
 - SHOW OR HIGHLIGHT THE CRITICAL PATH AND SLACKS
 - IDENTIFY WHICH TASKS HAVE POTENTIAL TIME SAVINGS
 - MAKE A CHANGE TO THOSE TASKS
 - CONSIDER IMPACTS ON QUALITY, SCOPE, AND RISK
 - DECIDE WHETHER YOU WANT TO KEEP THE CHANGE
 - REPEAT STEPS 3-6
 - b. What are at least six of the nine possible methods to shorten the critical path?
 - CHANGE SEQUENTIAL DEPENDENCIES INTO PARTIAL DEPENDENCIES (FAST-TRACKING)
 - CREATE PARALLEL PATHS FROM A SEQUENTIAL PATH (FAST-TRACKING)
 - SPLIT LONG TASKS INTO SHORTER ONES
 - CHANGE SCHEDULE CONSTRAINTS
 - SHORTEN LAGS (WAITING PERIODS)
 - SPLIT TASK BARS AROUND MUST START ON TASKS
 - DECREASE DURATION ESTIMATES
 - ADD RESOURCES (CRASHING)
 - REDUCE THE SCOPE OR DELETE TASKS

-
6. One of your team leaders suggests that the duration of one of her critical tasks could be decreased if you provide her with more people to do the work. What factors should you consider?
- HOW FAR AWAY IS THE DEADLINE FOR THIS TASK?
 - BY ADDING RESOURCES AND TRAINING THEM, WILL THEY BE OF ENOUGH BENEFIT TO DELIVER ONTIME?
 - HOW MUCH TRAINING WILL THE NEW RESOURCES NEED?
 - YOU WILL TAKE YOUR BEST RESOURCES OFF THEIR CRUNCHING TO TRAIN THE NEW RESOURCES; HOW WILLING ARE THEY TO INTERRUPT THEIR CRUNCHING?
 - HOW FAST CAN YOU BRING THE NEW RESOURCES UP TO SPEED?
 - HOW PRODUCTIVE WILL THE NEW RESOURCES BE ONCE TRAINED?
 - WILL THE NEW RESOURCES DELIVER THE SAME QUALITY AS THE RESOURCES CURRENTLY ASSIGNED?
7. What methods are available to decrease the cost of a project? Give at least four of the eight methods discussed.
- FIND LOWER COST CONTRACTS
 - REASSIGN TO LOWER COST RESOURCES
 - BREAK DOWN A LONG TASK AND REASSIGN PORTIONS TO LOWER COST RESOURCES
 - SHORTEN THE PROJECT DURATION TO DECREASE OVERHEAD COST
 - PREVENT PAID OVERTIME WORK
 - SMOOTH THE WORKLOADS
 - DECREASE THE COST ESTIMATE
 - REDUCE THE SCOPE OR DELETE TASKS
8. If you have Project 2013 level the workloads in your schedule, would the project duration be longer or shorter than if you leveled the workloads yourself? Why?
- THE PROJECT DURATION WOULD BE LONGER BECAUSE PROJECT 2013 ONLY DELAYS OR SPLITS TASKS.
9. There are many ways to level workloads manually. Name at least eight.
- **REASSIGN THE BEST RESOURCES TO CRITICAL TASKS FIRST AND ONLY TO CRITICAL TASKS.** TAKE NON-CRITICAL TASKS AWAY FROM THE BEST RESOURCES TO REDUCE THEIR WORKLOADS. MATCHING PEOPLE TO TASKS SO THAT THE BEST PERSON DOES THE TASK ALSO RESULTS IN TIME GAINED,
-

AND IS ONE OF THE RARE METHODS FOR IMPROVING TIME AND WORKLOADS AT THE SAME TIME.

- **REASSIGN TASKS FROM CRITICAL RESOURCES TO NONCRITICAL RESOURCES.** CRITICAL RESOURCES ARE RESOURCES THAT FORCE CRITICAL TASKS TO BE DELAYED IN ORDER TO KEEP THEIR WORKLOADS SANE. CRITICAL RESOURCES EXTEND THE PROJECT DURATION AND IF YOU TAKE SOME OF THEIR TASKS AWAY, YOU LEVEL THEIR WORKLOADS AND PERHAPS SHORTEN THE PROJECT DURATION
- **TAKE THE CRITICAL RESOURCE OFF A TASK.** SOMETIMES YOU CAN DO THIS WHEN MORE THAN ONE PERSON IS WORKING ON THE TASK, OR AS SOON AS YOU KNOW WHO CAN HANDLE THE TASK OTHER THAN THE CRITICAL RESOURCE. REMEMBER THAT THE WORD “CRITICAL” DOESN’T MEAN THE RESOURCE IS AN IMPORTANT RESOURCE; IT JUST MEANS THE RESOURCE IS DRIVING THE TASK AND PROJECT DURATION. THAT SOMETIMES MAKES IT POSSIBLE TO SIMPLY REMOVE THE CRITICAL RESOURCE FROM THE TASK TO BRING THE WORKLOAD DOWN.
- **HIRE EXTRA RESOURCES.** IF YOU HIRE EXTRA RESOURCES, YOU CAN REASSIGN THE TASKS FROM YOUR CRITICAL RESOURCES TO THE NEW RESOURCES. THIS WORKS WELL IF THE NEW RESOURCES HAVE SKILLS SIMILAR TO, OR BETTER THAN, YOUR EXISTING RESOURCES.
- **CONTRACT WORK OUT TO SUBCONTRACTORS.** ONE DEFINITION OF A SUBCONTRACTOR IS SOMEONE WHO SOLVES YOUR WORKLOAD PROBLEMS IN EXCHANGE FOR MONEY.
- **NEGOTIATE MORE RESOURCES FROM SUBCONTRACTORS.** IF YOU CAN GET MORE RESOURCES FROM SUBCONTRACTORS, THE WORKLOAD OF EXISTING RESOURCES CAN BE REDUCED.
- **FINE-TUNE THE NUMBER OF UNITS ASSIGNED TO THE TASKS INVOLVED IN THE OVER- ALLOCATION.** FOR EXAMPLE, YOU COULD KEEP TWO TASKS SCHEDULED IN PARALLEL IF YOU DECREASE THE INVOLVEMENT OF THE RESOURCE TO 50%, BUT MAKE SURE YOU KEEP THE RESOURCE WORKING WITH 100% FOCUS ON A CRITICAL TASK.
- **BREAK DOWN LONG TASKS INTO MANY SHORTER ONES AND REASSIGN THE SHORT TASKS TO NONCRITICAL RESOURCES.** BREAKING DOWN TASKS INCREASES THE NUMBER OF SCHEDULING POSSIBILITIES DRAMATICALLY.
- **DELAY VACATIONS UNTIL AFTER THE DEADLINE.** THIS IS WHERE YOU START TO TRADE-OFF AGAINST RESOURCES AND REQUIRE A LOT OF GOODWILL FROM YOUR RESOURCES. BE CAREFUL TO NOT PUT UNREASONABLE DEMANDS ON YOUR RESOURCES BECAUSE THEY WILL EITHER BURN OUT OR LEAVE.

-
- **WORK DURING THE WEEKEND.** IF AN OVER-ALLOCATION OCCURS ON A FRIDAY, YOU CAN EASILY SOLVE SUCH A SITUATION BY ASKING THE RESOURCE TO WORK SOME HOURS OVER THE WEEKEND. AGAIN YOU ARE TRADING OFF AGAINST THE RESOURCE DIMENSION.
 - **ASSIGN OVERTIME.** EVEN THOUGH THIS DOES NOT SOLVE THE OVER-ALLOCATION, IT SHOWS THAT IT HAS BEEN DEALT WITH. AGAIN YOU ARE TRADING OFF AGAINST THE RESOURCE DIMENSION.
 - **CHANGE DEPENDENCIES.** DECREASE OVERLAPS BETWEEN TASKS THAT ARE DONE BY THE SAME RESOURCE; OR, IN THE SPECIAL CASE IN WHICH YOU HAVE A TEAM OF PEOPLE GOING FROM ONE CITY TO ANOTHER TO INSTALL A SYSTEM, CONSIDER SETTING EXTRA, SOFT DEPENDENCIES TO PREVENT THE TEAM FROM BEING IN TWO SPOTS AT THE SAME TIME. THIS SOLIDIFIES THE ORDER IN WHICH LOCATIONS ARE ROLLED OUT AND KEEPS THE WORKLOADS REASONABLE.
 - **REVIEW QUALITY STANDARDS AND WORK ESTIMATES, WHICH MAY DECREASE THE WORKLOAD.** YOU CAN OFTEN CUT CORNERS IN THE CATEGORY OF NICE-TO-HAVE REQUIREMENTS WITHOUT JEOPARDIZING THE PROJECT PRODUCT.
 - **SPLIT TASKBARS WHEN MULTIPLE RESOURCES ARE ASSIGNED TO MOVE THE WORKLOADS OF THE INDIVIDUAL RESOURCES TO WHERE THE WORKLOADS FIT INTO THEIR AVAILABILITY.**
 - **DELAY TASKS.** SLIP ONE OF THE TASKS THAT COMPETE FOR THE SAME RESOURCE. IF YOU DECIDE TO DELAY ONE TASK, CHOOSE THE TASK THAT HAS THE MOST SLACK AND THE LEAST NUMBER OF RESOURCES ASSIGNED. IF YOU DELAY A TASK WITH OTHER RESOURCES ASSIGNED, YOU MAY CAUSE MANY NEW OVER-ALLOCATIONS. THE LESS OTHER RESOURCES ARE ASSIGNED, THE LESS CHECKING ON WORKLOADS YOU NEED TO DO. THROUGH THE DEPENDENCIES, SUCCESSORS MAY CAUSE NEW OVER-ALLOCATIONS; YOU CAN NEVER REALLY TELL WHAT WILL HAPPEN WHEN YOU START DELAYING TASKS. YOU HAVE TO DO IT WEEK BY WEEK.

10. In your own words, how does Project 2013 leveling affect the calculation and the display of the critical path?

WORKLOAD LEVELING FRAGMENTS THE CRITICAL PATH

11. We discussed five reasons why finding the resource-critical path might be a good idea. Name three.
- THE RCP DRIVES THE PROJECT END DATE
 - THE RCP REVEALS THE CRITICAL RESOURCES
 - THE RCP UNCOVERS POTENTIAL DOMINO EFFECTS
 - THE RCP ALLOWS WORKLOAD SMOOTHING

- THE RCP HELPS TO FAST-TRACK SMARTER
12. There are 15 methods with which you can shorten the resource-critical path. Name as many as you can.
- CHANGE SEQUENTIAL DEPENDENCIES INTO PARTIAL DEPENDENCIES (FAST-TRACKING)
 - CREATE PARALLEL PATHS FROM A SEQUENTIAL PATH (FAST- TRACKING)
 - BREAK DOWN LONG TASKS INTO MANY SHORTER ONES
 - CHANGE SCHEDULE CONSTRAINTS
 - SHORTEN LAGS (WAITING PERIODS)
 - SPLIT TASK BARS AROUND A MUST START ON TASK
 - DECREASE DURATION ESTIMATES
 - REDUCE THE SCOPE OR DELETE TASKS
 - REALLOCATE THE BEST RESOURCES TO THE RESOURCE CRITICAL TASKS
 - INCREASE ASSIGNMENT UNITS TO FULL-TIME ASSIGNMENTS FOR CRITICAL RESOURCES
 - ASSIGN OVERTIME HOURS TO CRITICAL RESOURCES
 - ADD NONCRITICAL RESOURCES
 - REPLACE CRITICAL RESOURCES WITH NONCRITICAL RESOURCES
 - REMOVE A CRITICAL RESOURCE WHEN MULTIPLE RESOURCES ARE ASSIGNED
 - POSTPONE VACATION OF CRITICAL RESOURCES TO AFTER THE DEADLINE
13. A project is experiencing a lack of progress during execution.
- a. How would you determine which resources you should ask to work overtime in order to make up the slippage? They will not be paid a higher rate for overtime.
- YOU WOULD LOOK AT WHICH RESOURCE DRIVES THE PROJECT, I.E., WHO IS THE CRITICAL RESOURCE? AFTER THAT YOU WOULD LOOK AT:
- WILLINGNESS AND PERSONAL CIRCUMSTANCES
 - COST (STANDARD RATE) AND QUALITY OF EACH WILLING RESOURCE
- b. What Ribbon items do you need to choose and what mouse-clicks do you need to make to enter overtime into Project 2013?
- IN THIS SITUATION, DON'T FILL IN AN OVERTIME RATE, BUT ALLOW OVER-ALLOCATIONS TO OCCUR FOR THESE RESOURCES AND SCHEDULE THEM WHEN
-

THEY WILL WORK OVERTIME (EVENINGS, WEEKENDS) BY CHANGING THEIR RESOURCE CALENDARS.

14. One way a project manager can identify task drivers is to “walk” backwards through the schedule identifying the logical dependencies or the resource dependencies. Project 2013 provides what tools that can assist with this? What are the advantages of these tools?

THE TASK INSPECTOR IS VERY QUICK AND EASILY APPLIED AND THE INSPECTOR SIDE PANE WILL INDICATE WHAT IS DRIVING A PARTICULAR TASK TO START ON A GIVEN DATE.

FACTORS AFFECTING THE START OF TASKS INCLUDE:

- OVER-ALLOCATIONS AND REPAIR OPTIONS
- MANUAL OR AUTO SCHEDULING OPTIONS
- PREDECESSOR TASKS
- PROJECT, TASK AND RESOURCE CALENDARS
- LAGS AND LEADS
- CONSTRAINTS
- LEVELING DELAYS

THE TASK PATH WILL HIGHLIGHT HOW TASKS IMPACT EACH OTHER OR THE END OF THE PROJECT ACCORDING TO THE LOGICAL DEPENDENCIES.

YOU CAN ALSO USE IIL'S RCP MACRO TO IDENTIFY THE RESOURCE DEPENDENCIES FASTER.

Additional Practice:

For experience working with the features you've learned about in this chapter, we strongly suggest that you do the additional exercises for this chapter that are included in the Case Studies appendix, available to download in the WAV Download Resource Center at www.jcrosspub.com.

Chapter 10: Updating the Schedule

Review Questions:

1. What are the process steps for updating schedules?

THE BASIC PROCESS STEPS FOR UPDATING A SCHEDULE ARE:

- **BASELINE THE SCHEDULE:** SET IT ONCE FOR THE ENTIRE SCHEDULE AND MAINTAIN ITS INTEGRITY.
- **CHOOSE THE CLIENT REPORTING PERIOD.**
- **CHOOSE THE UPDATE METHOD.**

TASKS UPDATE: COLLECT PROGRESS INFORMATION ON THE TASK LEVEL. THIS REQUIRES LESS EFFORT THAN UPDATING ASSIGNMENTS.

ASSIGNMENTS UPDATE: COLLECT ACTUAL HOURS WORKED, BY DAY, BY RESOURCE. WHEN YOU UPDATE ASSIGNMENTS, YOU WORK WITH TIME SHEETS.

- **UPDATE THE SCHEDULE:** ENTER THE ACTUAL VALUES AND REMAINING ESTIMATES. THIS IS DISCUSSED SEPARATELY FOR EACH UPDATE STRATEGY.
- **CHECK TO MAKE SURE THE SCHEDULE HAS BEEN UPDATED CORRECTLY.**
- **PREPARE STATUS AND FORECAST REPORTS.** YOU MAY NEED TO RE-OPTIMIZE YOUR SCHEDULE BEFORE REPORTING.

2. a. What benefit can you gain from a baseline in your schedule?

THE BASELINE IS A FROZEN COPY OF THE FINAL APPROVED SCHEDULE. COMPARING THE BASELINE DATA AGAINST THE CURRENT PLAN ALLOWS YOU TO ASSESS THE STATUS OF A PROJECT.

- b. How do you set a baseline in Project 2013?

ON THE **PROJECT** TAB, IN THE **SCHEDULE** GROUP, CLICK **SET BASELINE**, THEN SELECT **SET BASELINE**, THEN COMPLETE THE DIALOG BOX ACCORDING TO YOUR NEEDS.

- c. How often do you set it?

AFTER YOU HAVE FINAL APPROVAL OF THE SCHEDULE AND BEFORE YOU BEGIN WORK, SET THE BASELINE. ONLY UPDATE THE BASELINE IF THERE ARE SIGNIFICANT AND APPROVED CHANGES. THE BASELINE IS ESSENTIALLY A CONTRACT BETWEEN THE PROJECT MANAGER AND THE SPONSOR OR CLIENT OF THE PROJECT. YOU NORMALLY SET THE BASELINE ONLY ONCE, UNLESS NECESSARY CHANGES ARE APPROVED THROUGH A FORMAL PROCESS.

3. What are legitimate reasons for changing your baseline?

- THERE ARE FORMAL CHANGES APPROVED AFTER THE BASELINE HAS BEEN SET. THESE CHANGES COULD BE:
 - SCOPE CHANGES THAT ENTAIL ADDING OR REMOVING DELIVERABLES
 - SUBSTANTIAL ADDITIONS OR DELETIONS OF TASKS
 - SUBSTANTIAL ADDITIONS OR LOSSES OF RESOURCES
 - SUBSTANTIAL CHANGES IN RESOURCE RATES OR FIXED COSTS
 - SUBSTANTIAL CHANGES IN COST RESOURCES
 - SUBSTANTIAL CHANGES IN BUDGET COST AND/OR BUDGET WORK
 - SUBSTANTIAL CHANGES IN FIXED COST ACCRUALS
 - SUBSTANTIAL CHANGES IN THE DURATION, START, OR FINISH
- OTHER CHANGES ARE APPROVED OR IMPOSED THAT FORCE YOU TO RE-THINK AND RE-BASELINE YOUR SCHEDULE, LIKE BUDGET INCREASES, CHANGES OF DEADLINE, OR AVAILABILITY OF CRUCIAL RESOURCES.
- IF ERRORS IN THE SCHEDULE TURN UP UNEXPECTEDLY, YOU WOULD NEED TO GET FORMAL APPROVAL TO RE-BASELINE THE AFFECTED TASKS.
- THERE MIGHT BE EXCEPTIONAL CIRCUMSTANCES SUCH AS A FIRE, STRIKE, OR SUDDEN ECONOMIC RECESSION.
- ACTS OF NATURE (E.G., A HURRICANE) MAY ALSO AFFECT YOUR SCHEDULE. EVEN IF THESE HAPPEN ELSEWHERE, SHIPMENTS FOR YOUR PROJECT COULD BE AFFECTED

4. How do the following indicators relate to each other? Please describe their relationship using formulas.

ACTUAL DURATION = DURATION - REMAINING DURATION

REMAINING DURATION = DURATION - ACTUAL DURATION

DURATION = ACTUAL DURATION + REMAINING DURATION

% COMPLETE = ACTUAL DURATION / DURATION

5. There are two main strategies for updating schedules. What are they and what are the main differences between them?

THERE ARE TWO DIFFERENT STRATEGIES FOR UPDATING YOUR SCHEDULE: YOU CAN UPDATE TASKS OR UPDATE ASSIGNMENTS.

UPDATING TASKS MEANS UPDATING ACTUAL START, ACTUAL DURATION, REMAINING DURATION, AND ACTUAL FINISH FOR EACH TASK.

UPDATING ASSIGNMENTS IS TYPICALLY DONE IN A TIMESHEET FOR EVERY ASSIGNMENT OF A RESOURCE, REGISTERING ITS ACTUAL HOURS AND REMAINING HOURS BY DAY OR BY WEEK.

6. When collecting updated data, you could ask for % complete. What are the weaknesses of this metric?

PERCENT COMPLETE IS AMBIGUOUS AND CAN RELATE TO WORK, COST, DURATION, INDICATING THAT SOME PORTION IS DONE. ALSO, IT'S COMMON TO ARRIVE QUICKLY TO SOME AROUND 90% COMPLETE, AND THEN TAKE A LOT OF TIME TO FINISH THE REMAINING 10%.

7. a. What Tab on the Ribbon do you need to choose to set the status date?

PROJECT TAB

- b. Why do you need a status date?

IN ORDER TO COMPARE YOUR PROGRESS AGAINST THE BASELINE, YOU MUST ENTER THE STATUS DATE AS A POINT OF REFERENCE TO GET VARIANCES AND PERFORMANCE INDICES.

IF YOU DISPLAY THE STATUS DATE AS A LINE IN THE TIMESCALE, YOU HAVE ALL YOU NEED TO VISUALLY ASSESS THE STATUS OF A PROJECT.

8. What task type do you recommend when updating tasks?

FIXED UNITS IN THE CASE YOU ARE UPDATING TASK DURATIONS SO YOU MAY WANT TO KEEP THE RESOURCES THAT WORK ON THE TASK THE SAME (UNITS), AND SEE THE TOTAL WORK (EFFORT) INCREASE.

FIXED WORK IN THE CASE YOU WANT THE NUMBER OF RESOURCE UNITS TO BE RECALCULATED WHEN THE DURATION CHANGES.

9. What are the pieces of data that you will need to collect when you want to update assignments?

ACTUAL WORK AND REMAINING WORK

10. When updating tasks, different situations can come across. Mention six typical situations and a good way to update them..

- TASKS THAT RAN AS SCHEDULED: MARK THEM AS 100% COMPLETE.
- TASKS THAT ARE RUNNING AS SCHEDULED: JUST MARK ON TRACK.
- TASKS THAT ARE RUNNING BEHIND: CAPTURE ACTUAL PROGRESS AND BRING THE INCOMPLETE PORTION OF THE TASK BAR FORWARD TO AFTER THE STATUS DATE.
- TASKS THAT WILL TAKE LONGER OR SHORTER: SET THE TYPE TO FIXED UNITS, ENTER THE ACTUAL DURATION AND REVISE THE REMAINING DURATION.
- TASKS THAT STARTED LATE (OR EARLY): UPDATE THE ACTUAL START FIELD.

-
- TASKS THAT FINISHED LATE (OR EARLY): UPDATE THE ACTUAL FINISH FIELD.

11. What is the advantage of updating your schedule properly?

ACTUAL PROGRESS AND UP-TO-DATE FORECASTS ALLOWS YOU TO DO WHAT-IF SCENARIOS TO DETERMINE THE BEST COURSE OF ACTION.

Additional Practice:

For experience working with the features you've learned about in this chapter, we strongly suggest that you do the additional exercises for this chapter that are included in the Case Studies appendix, available to download in the WAV Download Resource Center at www.jrosspub.com.

Chapter 11: Reporting

Review Questions:

1. Is it possible to create a one page report for a 1,000-task schedule that reflects the performance of the project? Would you recommend doing this? What feature would you recommend in Project 2013?

YES, YOU CAN CREATE A ONE PAGE REPORT INCLUDING ONLY THE MAJOR MILESTONES. BEING ABLE TO INCLUDE THE BASELINE, BUDGET, AND FORECAST IMPROVES THE ABILITY TO INFORM STAKEHOLDERS OF THE STATUS OF THE PROJECT.

YOU MAY NEED TO INCLUDE ADDITIONAL DETAILED EXPLANATIONS OF ANY SLIPPAGE SHOWN, WE WOULD RECOMMEND USING A ONE PAGE REPORT BECAUSE EXECUTIVES AND CLIENTS WILL RECEIVE CONCISE INFORMATION ABOUT THE STATUS OF THE PROJECT AND BECAUSE, IN TODAY'S WORLD, NO ONE REALLY HAS TIME TO READ LONG REPORTS.

PROJECT 2013 OFFERS DIFFERENT OPTIONS FOR THIS KIND OF REPORT, RECOMMENDATIONS DEPEND ON WHETHER THE SCHEDULE HAS A BASELINE AND HOW MUCH INFORMATION THE STAKEHOLDERS NEED. THE TIMELINE SHOWS A GOOD IDEA OF TIMING, THE TRACKING GANTT WITH MILESTONE FILTERS GIVES NOTICE OF SLIPPAGE, AND THE MILESTONE REPORT SHOWS A VERY GOOD SNAPSHOT OF ACHIEVED MILESTONES, LATE MILESTONES, AND COMING MILESTONES IN COMPARISON WITH THE REMAINING NUMBER OF TASKS TO COMPLETE.

2. What are the different reporting options in Project 2013? What are their main differences?
 - **REPORTS:** THE ENHANCED BUILT-IN REPORTS AND DASHBOARDS CONTAIN CHARTS AND TABLES WITH PRECISE, NUMERIC INFORMATION COMING DIRECTLY FROM UPDATES TO THE PROJECT TASKS AND RESOURCES. WITH THESE REPORTS YOU CAN ADD, CHANGE, MOVE, AND FORMAT DATA AS YOU NEED IN A SINGLE STEP.
 - **VIEWS:** THE INFORMATION YOU SEE ON THE SCREEN THROUGH THE VIEWS MAY BE ENOUGH TO COMMUNICATE SPECIFIC DATA TO STAKEHOLDERS. THE VIEWS HAVE THE ABILITY TO SHOW TIMESCALE CHARTS WITH TABLES WHICH RESULT IN SELF-EXPLANATORY REPORTS
 - **VISUAL REPORTS:** THIS KIND OF REPORT UTILIZES THE POWER OF A DESKTOP OLAP CUBE TO CREATE PIVOT TABLES, PIVOT CHARTS, AND PIVOT DIAGRAMS IN EXCEL AND VISIO. THE INFORMATION AVAILABLE IN OLAP CUBES ALLOWS DATA MINING WHICH FACILITATES THE SORT, COUNT, BREAK DOWN, AND TOTALS OF THE DATA JUST BY DRAGGING AND DROPPING FIELDS. THIS ENABLES YOU TO MAKE INFORMED DECISIONS ABOUT CRITICAL DATA IN THE PROJECT.

- SHAREPOINT AND PROJECT SERVER: THESE TOOLS EXTEND THE ABILITY NOT ONLY TO COMMUNICATE; THEY FACILITATE ONLINE COLLABORATION.

3. What objects, elements, and settings are stored in a view?

- SCREEN
- TABLES
- GROUPS
- FILTERS
- FIELDS
- FORMATS
- SORT
- PAGE SETUP SETTINGS
- DRAWINGS

4. How can you transfer an object to another project schedule?

WITH THE ORGANIZER, BUT YOU MUST BE CAREFUL BECAUSE SOME OBJECTS ARE RELATED TO OTHER OBJECTS LIKE A VIEW WHICH RELATES TO A TABLE, FILTER, GROUP, AND CUSTOM FIELDS. YOU MUST TRANSFER ALL OF THESE OBJECTS IN ORDER FOR THE VIEW TO WORK.

5. Can you print the following items?

Would you do this through a report or through a view?
Please indicate the exact name of the report or view.

Can you print?	Yes/No	Through which Report or View?
a. Gantt Chart	YES	VIEW: GANTT CHART
b. Comparison between Project progress and Cost	YES	REPORT: COST OVERVIEW
c. Resource Calendar	NO	YOU CAN'T PRINT THE RESOURCE CALENDAR BUT IN THE RESOURCE USAGE OR THE RESOURCE GRAPH VIEWS YOU CAN DISPLAY THE WORK AVAILABILITY FOR A PERIOD OF TIME
d. Cash outflow report	YES	RESOURCE USAGE VIEW: (WITH THE TIME-PHASED FIELD COST INSTEAD OF WORK) OR REPORT: CASH FLOW OR VISUAL REPORTS: CASH FLOW REPORT
e. Notes	YES	VIEW (WITH BACKSTAGE VIEW, PRINT, PAGE SETUP, VIEW TAB, PRINT NOTES) OR REPORT INCLUDING THE NOTES FIELD IN ANY TASK RELATED TABLE

6. How would you quickly format all the milestone task names and milestone Gantt bars?

GO TO THE BAR STYLES DEFINITION DIALOG BOX (DOUBLE CLICK IN THE CHART AREA OR **FORMAT** TAB, **BAR STYLES** GROUP, **FORMAT, BAR STYLES**).

7. How would you create a Visual Report in Excel for a Resource Work Summary Report?

USING ONE OF THE BUILT-IN VISUAL REPORTS NAMED “RESOURCE WORK SUMMARY REPORT.”

8. What information should be included in your header, footer, or legend on every printout? Why?

IT IS USEFUL TO INSERT THE SYMBOL CODE WHICH REFERS TO ENTRIES YOU MADE IN ADVANCED PROPERTIES OR CALCULATED FROM PROJECT FIELDS SUCH AS PAGE NUMBER, COMPANY NAME, MANAGER, PROJECT TITLE, REPORT NAME, PROJECT STATUS DATE, PROJECT START DATE, ETC. THIS WAY, ANY CHANGES WILL BE UPDATED AUTOMATICALLY.

9. We discussed several ways to display the critical path on the Gantt chart. Name one of those ways.

- CHOOSE TRACKING GANTT VIEW
- ACTIVATE THE CRITICAL TASKS FROM THE FORMAT TAB
- MODIFY THE BAR STYLES DIALOG

10. Is there a way in which you can easily display the entire project duration in the timescale on your screen? If so, what are the steps in Project 2013 to accomplish this?

USE THE ZOOM ENTIRE PROJECT COMMAND ON THE **VIEW** TAB IN THE **ZOOM** GROUP.

11. Discuss ways in which you might modify versions of a status report to better address the needs of the target audiences.

YOU MAY WANT TO VERIFY IF THE BUILT-IN REPORTS, VIEWS, AND VISUAL REPORTS ANSWER THE PRIMARY CONCERNS OF THE AUDIENCE.

IF THEY ONLY ANSWER THEM PARTIALLY, YOU WILL HAVE TO MODIFY THE REPORT/VIEW BY USING THE APPROPRIATE FILTERS, GROUPS, FORMATS, PRINTING SETTINGS, AND DELIVERY FORMAT (PDF, XPS, PROJECT 2003/2007/2013 FILE, ETC.).

Additional Practice:

For experience working with the features you’ve learned about in this chapter, we strongly suggest that you do the additional exercises for this chapter that are included in Case Studies appendix, available to download in the WAV Download Resource Center at www.jrosspub.com.

Chapter 12: Earned Value Management

Review Questions:

1. What are the benefits of EVM?

EARNED VALUE MANAGEMENT (EVM) IS AN APPROACH TO MEASURING PROJECT PERFORMANCE THAT IS BASED ON COMPARING PLANNED AND ACTUAL PROGRESS RELATED TO SCOPE, TIME, AND COST.

IF YOU HAVE A GOOD EVM SYSTEM IN PLACE, YOU'LL GET THE FEEDBACK YOU NEED AND THIS WILL ENABLE YOU TO IDENTIFY PROBLEMS AND ISSUES EARLY, REPORT THEM, AND HELP YOU KEEP YOUR PROJECT ON TIME AND ON BUDGET.

2. You have been preparing Earned Value reports for your sponsor each month. The partial results of your reports are reflected in the chart below. How would you describe the performance of your project to date? What, if any, actions should you be taking?

Status Date	SPI	CPI
1-September-2015	1.50	1.40
1-October-2015	1.35	1.40
1-November-2015	1.20	1.28
1-December-2015	?	?

ON NOVEMBER 1ST, 2015, YOU ARE OUTPERFORMING YOUR PLAN IN TERMS OF BOTH SCHEDULE AND COST. YOUR SCHEDULE PERFORMANCE INDEX IS 1.20 WHICH MEANS THAT YOU ARE AHEAD OF SCHEDULE BY 20% AND YOUR COST PERFORMANCE INDEX IS 1.28 WHICH MEANS YOU ARE 28% UNDER YOUR PLANNED COSTS.

BUT IF YOU ANALYZE THE HISTORICAL DATA, THE TRENDS IN BOTH INDICES SHOW YOUR PROJECT IS LOSING THE POSITIVE VARIANCES MONTH BY MONTH.

IF YOU WERE TO EXTRAPOLATE THE DATA TO GET DECEMBER 1ST, 2015 INDICES, YOU WOULD SEE THAT THEY COULD BE APPROACHING 1, SO YOU MAY NEED TO TAKE ACTION TO AVOID YOUR PROJECT PERFORMANCE DROPPING BELOW PLAN IN TWO OR THREE MONTHS.

YOU MAY NEED TO ANALYZE OTHER INFORMATION LIKE PV, EV, AC, PV%, EV%, AC%, SV, CV, EAC, ETC., AND THE REMAINING WORKS TO DEFINE THE ACTIONS YOU SHOULD BE TAKING.

3. Stoplight charts have become an increasingly popular way to implement Management By Exception (MBE). Describe how you would implement this in your organization and how you might calculate tolerance levels for your graphical dashboard.

YOU CAN FOLLOW THESE STEPS:

- SELECT THE INDICATORS YOU WANT TO USE IN YOUR STOPLIGHT CHARTS. THESE COULD BE RELATIVE INDICATORS (INDICES), OR ABSOLUTE INDICATORS (VARIANCES). YOU CAN ALSO SELECT AN INDICATOR THAT SHOWS HOW YOUR PROJECT IS AT THE STATUS DATE, AND A FORECAST INDICATOR THAT SHOWS HOW YOUR PROJECT WILL FINISH.
 - BASED ON YOUR STATISTICAL PROJECT DATA, DEFINE YOUR CONTROL LIMITS FOR INDICES AND VARIANCES.
 - IF YOU DON'T HAVE HISTORIC INFORMATION, YOU CAN ESTABLISH ACCEPTABLE TOLERANCE LEVELS OF PERFORMANCE OR QUALITY THRESHOLDS, BASED ON YOUR EXPERIENCE AND CRITERIA.
 - GET COMMITMENT FROM THE KEY STAKEHOLDERS.
 - START USING THE PROCESS.
 - REVIEW RESULTS AND MAKE NEEDED ADJUSTMENTS.
4. What are the differences between % Complete and Physical % Complete? When is it appropriate to use one versus the other? Where do you go in Project 2013 to select this option?

WHEN YOU DECIDE TO MEASURE YOUR TASK PROGRESS USING % **COMPLETE**, YOU ARE ASSUMING THAT THE TASK PROGRESS IS PROPORTIONAL TO THE DURATION (DAYS YOU HAVE BEEN WORKING) OVER THE TOTAL DURATION OF THE TASK; I.E., THE TASK PROGRESS IS UNIFORM OR LINEAR.

IF YOU DECIDE TO USE **PHYSICAL % COMPLETE** TO MEASURE THE TASK PROGRESS, YOU ARE ASSUMING THAT THE TASK PROGRESS IS NOT PROPORTIONAL TO THE TIME YOU HAVE BEEN WORKING ON THE TASK. FOR EXAMPLE, IN A TASK OF 10 DAYS, IF YOU HAVE BEEN WORKING FOR 5 DAYS, IT DOESN'T MEAN YOU HAVE ACCOMPLISHED 50% OF THE PROGRESS. YOU MAY HAVE 80% OF THE WORK LEFT TO DO BECAUSE THE FINAL DETAILS WILL TAKE MORE DAYS THAN THE INITIAL PROGRESS.

YOU CAN SELECT THE **DEFAULT TASK EARNED VALUE METHOD** FOR YOUR PROJECT IN THE **BACKSTAGE** VIEW, **OPTIONS, ADVANCED** TAB. GO TO "**THE EARNED VALUE OPTIONS FOR THIS PROJECT**" SECTION AND SELECT THE PROJECT FROM THE DROPDOWN, THEN SELECT % **COMPLETE** OR **PHYSICAL % COMPLETE** IN **DEFAULT TASK EARNED VALUE METHOD**.

IF YOU WANT TO CHANGE THE **DEFAULT EARNED VALUE METHOD** FOR A SELECTED TASK(S), FIRST SELECT THE TASK(S), THEN ON THE **TASK** TAB OF THE RIBBON, **PROPERTIES** GROUP, SELECT **INFORMATION** ICON. IN THE **TASK INFORMATION** DIALOG BOX THAT APPEARS, SELECT THE **ADVANCED** TAB, THEN SELECT % **COMPLETE** OR **PHYSICAL % COMPLETE** FOR **EARNED VALUE METHOD** AND CLICK **OK**.

-
5. You find a problem in a project. The project has a defined baseline and task progress has been entered for all tasks for the first report period. The ACWP field show the right cost for the work reported, but the BCWP and BCWS fields are zero. What could be the problem here?

CHECK TO SEE IF YOU HAVE ESTABLISHED THE **STATUS DATE** OF THE PROJECT; THIS SHOULD BE THE PROBLEM.

YOU CAN ESTABLISH THE **STATUS DATE** BY CHOOSING THE **PROJECT** TAB ON THE RIBBON, GOING TO THE **PROPERTIES** GROUP, AND SELECTING THE **PROJECT INFORMATION** ICON, (OR YOU CAN CHOOSE THE **PROJECT** TAB ON THE RIBBON, GOING TO THE **STATUS** GROUP AND SELECTING THE **STATUS DATE** ICON). WHILE IN THE STATUS DATE DIALOG BOX, SELECT OR TYPE THE STATUS DATE.

6. You realize that it is important to maintain the baseline on your project. You are in the practice of keeping the original baseline stored in the “Baseline without a number.” As you receive approved scope changes you store a new baseline in Baseline##. What will be the impact of this practice in your earned value reporting? What are ways that you could prevent these impacts?

IF YOU NOW WANT TO COMPARE AGAINST BASELINE ##, YOU SHOULD CHANGE IT IN THE BACKSTAGE VIEW.

TO DO THIS, GO TO THE OPTIONS TAB IN THE **BACKSTAGE** VIEW, AND SELECT THE **ADVANCED** TAB. GO TO “**THE EARNED VALUE OPTIONS FOR THIS PROJECT**” SECTION AND SELECT THE NEW BASELINE## IN THE DROP DOWN FOR **BASELINE FOR EARNED VALUE CALCULATIONS**. ALL EARNED VALUE CALCULATIONS WILL NOW USE YOUR NEW BASELINE.

THE PROBLEM YOU MAY HAVE IS THAT YOUR GRAPHICAL DISPLAYS SUCH AS THE TRACKING GANTT AND ALL FIELDS IN TABLES RELATED WITH BASELINE USE THE “BASELINE WITHOUT A NUMBER.” IN ADDITION, IF YOU HAVE DEFINED CUSTOMIZED FIELDS THAT USE “BASELINE WITHOUT A NUMBER” FIELDS IN THEIR FORMULAS, YOU WILL HAVE WRONG CALCULATIONS.

TO AVOID THIS, WE RECOMMEND THAT YOU SET THE BASELINE 1 WHEN YOU DEFINE YOUR FIRST BASELINE, AND THEN COPY IT TO THE “BASELINE WITHOUT A NUMBER.” IF YOU NEED TO REBASELINE YOUR PROJECT AND YOU WANT TO SET A NEW BASELINE, THEN USE BASELINE 2, AND COPY IT INTO “BASELINE WITHOUT A NUMBER.” DOING THIS, THE “BASELINE WITHOUT A NUMBER” WILL ALWAYS BE YOUR ACTIVE BASELINE, AND ALL YOUR DISPLAYS, TABLES, AND FORMULAS WILL USE THE ACTIVE BASELINE.

7. Describe and define the following acronyms:

- **PLANNED VALUE (PV)**. PV IS THE VALUE OF THE PERFORMANCE MEASUREMENT BASELINE AT THE STATUS DATE. IT REPRESENTS WHAT YOU SHOULD HAVE DONE ACCORDING TO THE PLAN. IT IS ALSO KNOWN AS THE BUDGETED COST OF WORK SCHEDULED (BCWS).

- **EARNED VALUE (EV).** EV IS WHAT YOU HAVE ACCOMPLISHED AT THE STATUS DATE, VALUED WITH THE COSTS USED TO DEFINE THE PERFORMANCE MEASUREMENT BASELINE. EV IS ALSO KNOWN AS BUDGETED COST OF WORK PERFORMED (BCWP).
 - **ACTUAL COST (AC).** AC IS THE COST YOU HAVE INCURRED FOR THE ACCOMPLISHED WORK AT THE STATUS DATE. AC IS ALSO KNOWN AS ACTUAL COST OF WORK PERFORMED (ACWP).
 - **ESTIMATE TO COMPLETE (ETC).** $ETC = EAC - AC$. FORECASTED COST OF REMAINING WORK.
 - **ESTIMATE AT COMPLETION (EAC).** THE FORECASTED FINAL PROJECT COST. EAC CAN BE CALCULATED IN DIFFERENT WAYS, DEPENDING ON HISTORICAL PERFORMANCE DATA AND TRENDS:
 - **$EAC = BAC - CV$.** FUTURE COSTS WOULD BE THE SAME AS IN THE BASELINE BECAUSE VARIANCES TO DATE WERE ATYPICAL.
 - **$EAC = BAC / CPI$.** FUTURE COSTS ARE CALCULATED BASED ON THE COST PERFORMANCE EFFICIENCY RATE TO DATE.
 - **$EAC = BAC / (CPI * SPI)$.** FUTURE COSTS ARE CALCULATED BASED ON THE COST AND SCHEDULE PERFORMANCE EFFICIENCY RATES TO DATE.
 - **$EAC = AC + \text{NEW ESTIMATE FOR REMAINING WORK}$.** FUTURE COSTS ARE CALCULATED BASED ON A NEW COST ESTIMATE.
 - **VARIANCE AT COMPLETION (VAC).** $VAC = BAC - EAC$. FORECASTED COST DEVIATION AT PROJECT COMPLETION.
 - **BUDGET AT COMPLETION (BAC).** THE FINAL PROJECT PLANNED COST IN THE ORIGINAL PERFORMANCE MEASUREMENT BASELINE.
8. What is the common unit that earned value uses to report values in Project 2013?
- MONEY

9. What do the following indications mean:

Term	Indication	Meaning
VARIANCES		
Cost Variance (CV)	< 0	OVER BUDGET
Cost Variance (CV)	> 0	UNDER BUDGET
Schedule Variance (SV)	< 0	BEHIND SCHEDULE
Schedule Variance (SV)	> 0	AHEAD SCHEDULE
INDICES		
Schedule Performance Index (SPI)	< 1	SCHEDULE PERFORMANCE WORSE THAN PLANNED
Schedule Performance Index (SPI)	> 1	SCHEDULE PERFORMANCE BETTER THAN PLANNED
Cost Performance Index (CPI)	> 1	COST PERFORMANCE BETTER THAN PLANNED
Cost Performance Index (CPI)	< 1	COST PERFORMANCE WORSE THAN PLANNED
To Complete Performance Index (TCPI)	< 1	COST PERFORMANCE FOR THE REMAINING WORK COULD BE LESS THAN PLANNED AND STILL FINISH ON BUDGET
To Complete Performance Index (TCPI)	> 1	COST PERFORMANCE FOR THE REMAINING WORK MUST BE BETTER THAN PLANNED TO FINISH ON BUDGET

10. Provide task examples where you can use each of the following EVM methods and a brief explanation of your recommendation:

EV Measurement Method	Example	Explanation
0/100 Fixed Formula	MATERIALS DELIVERY	NO PROGRESS SHOWN UNTIL ALL MATERIALS ARE ONSITE
50/50 Fixed Formula	OPERATIONS MANUAL	TO REGISTER WHEN SOMEONE STARTS AND DELIVERS THE COMPLETED MANUAL, WITHOUT ANY SUBJECTIVE EVALUATION OF PARTIAL PROGRESS

EV Measurement Method	Example	Explanation
Weighted Milestones	PUBLIC BID PROCESS	20% AT BID BASIS COMPLETION, 10 % AT INVITATION ISSUED, 20% AT BIDDER'S PROPOSAL DELIVERY, 30% AT PROPOSAL EVALUATION AND RECOMMENDATION DELIVERY, 10% AT PROVIDER ASSIGNMENT, AND 10% AT CONTRACT ASSIGNED
% Duration Complete	DATABASE MIGRATION	THE PROGRESS WILL DEPEND ON ACTUAL DAYS AND REMAINING DAYS
% Work Complete	COMPRESSOR OVERHAUL	THE PROGRESS WILL DEPEND ON ACTUAL WORK HOURS AND REMAINING WORK HOURS
% Physical Units Complete	STEEL STRUCTURE MOUNTING	THE PROGRESS WILL BE TRACKED BY TON OF STEEL MOUNTED
% Physical Complete	ART MAINTENANCE	THE PROGRESS WILL DEPEND ON PHYSICAL % OF THE TASK COMPLETED
Apportioned Effort	CONCRETE QUALITY CONTROL	THE PROGRESS WILL BE THE SAME AS THE CONCRETE POURING TASK
Level of Effort	PROJECT MANAGEMENT	WE WILL HAVE A TEAM DELIVERING PROJECT MANAGEMENT ACTIVITIES DURING ALL OF THE PROJECT LIFE CYCLE

Additional Practice:

For experience working with the features you've learned about in this chapter, we strongly suggest that you do the additional exercises for this chapter that are included in Case Studies appendix, available to download in the WAV Download Resource Center at www.jrosspub.com.

Chapter 13: Evaluating the Project

Review Questions:

1. You have been managing a new project for the last couple of months. As you enter into phase three of the project, you want to compare the different baselines, to see variances along the way. What view do you use in Project 2013 for this comparison and how did you capture these baselines along the way, assuming that you captured an original, phase 1, and phase 2 baseline?

THE MULTIPLE BASELINES GANTT WILL ALLOW TO COMPARE DIFFERENT BASELINES CAPTURED ALONG THE WAY USING THE BASELINE 1 FOR THE ORIGINAL PLAN, BASELINE 2 FOR PHASE 1, AND BASELINE 3 FOR PHASE 2.

2. You made a copy of the original project plan and are now optimizing duration on the copy and doing some “what-if” analyses to see if you can shorten the finish date. You like what you see, but want to compare your results to the original plan before making these changes to the original plan. How would you go about this comparison using Project 2013?

IF YOU SAVED A BASELINE IT WOULD BE EASY TO COMPARE USING THE TRACKING GANTT.

IF YOU DON'T HAVE A BASELINE, YOU CAN USE THE COMPARE PROJECTS FEATURE AND CREATE A COMPARISON REPORT.

3. You are in the PMO and notice that most of the processes for departments follow the same project management methodologies. Your project managers create new projects from scratch, which takes a lot of extra development time in the planning phase. How could you help your project managers using Project 2013 to cut down their development time for planning?

STANDARDIZE THESE PROCESSES THROUGH PROJECT TEMPLATES.

Additional Practice:

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