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# research notes

* % Complete: is equal to the % of the task duration that has been completed thus far
* % Work Complete: sum of actual work resource time / sum of total work resources required to finish task

# Chapter 1: Project Basics

* The ribbon: commands are in tabs (e.g. file, tasks, Resource, Report, Project, View)
  + Selecting a tab activates the ribbon, and commands are organized into groups
  + Each command has its own button
* Project schedule: a model of a real project, what you want to happen throughout the project, and contains all of the tasks, resources, time frames, and costs that might be associated with the project
* Templates: predefined file that can be blank with the default characteristics set, or it could already contain project task resource information
* Backstage area: the name given to the File tab. This is where the user will change options, save, print, import, export, set file properties, etc.
* Microsoft project’s databases:
  + Task database: where all task-related information is stored, e.g. name, start, finish, cost, duration, and work
    - Task tab > click gantt chart
  + Resource database: e.g. name, type, standard rate (pay rate), resource group, base calendar, and maximum number of units for the resource
    - Resource tab > click resource sheet
  + Assignment database: when a resource is assigned to a task, all of the assignment-related information for each specific resource on each specific task is stored. E.g. a resource's start & finish data, amount of work, total cost, etc.
* Calendar: scheduling tool that determines the standard working time and nonworking time (e.g. evening or holidays) for the project, resources, and tasks. Calendars are used to determine how tasks and resources assigned to these tasks are scheduled. 4 types of calendars
  + Base calendar: specifies default working and non-working times for a set of resources; it can serve as a project calendar or a task calendar
    - Can be Standard time, 24 hour time, or night shift
  + Project calendar: is the base calendar used for the entire project; it defines normal working and non-working times
  + Resource calendar: defines working and nonworking times for an individual work resource
  + Task calendar: the base calendar you can use for individual tasks to manage the scheduling of these tasks; it defines working and non-working times for a task, regardless of the settings in the project calendar
  + Notes:
    - Bases calendars can be created and assigned to a project, resource, or task
    - Project, resource, and task calendars are used in scheduling tasks
      * If resources are assigned to tasks, the task is scheduled based upon the resource calendar
      * If a task calendar is used to schedule a task and the resources assigned do not work during the task calendar’s working hours, you will receive a warning about an assignment mismatch
* Tasks: represent the actual individual work activities that must be completed to accomplish a project’s final goal/deliverable.
  + Include: the order and duration of tasks, critical tasks, and resource requirements
* Task duration: the amount of working time required to complete a task
  + A task duration may be 2 weeks but only requires 20 hours of effort to complete
  + A task can have 4 work resources assigned and equate to 24 hours of work effort in a single, 8 hour work day
  + If you specify an 8 hour work day, and enter in 3d, then it will schedule it over 3 days
    - If you enter in 24 hours, then it will also schedule it for 3 days (3 8 hour working days)
* Elapsed duration: the total length of working and nonworking time you expect it will take to complete a task
  + If you enter in 1ed, that it will schedule it as 24 hours, i.e. it includes all the working and nonworking hours in a 24 hour period
* Phases: groups of closely related tasks that encompass a major section of your project; each phase is represented by a summary tasks
  + Summary task made up of and summarizes all of the tasks within its hierarchical structure, which can also include other summary tasks, detail tasks, or subtasks that fall below it
  + You cannot directly edit a summary task’s duration, start date, or other calculated values (it aggregates the tasks within it’s structure)
* WBS: work breakdown schedule: the hierarchical decomposition of the work to complete the project
  + By default, MSP displays the WBS in a format called a ‘Tabular WBS’
* Top-down planning: develops a project schedule by identifying the highest level phases or summary tasks before breaking them into lower level components or subtasks
  + This works from general to specific
* Bottom-up planning: develops a project schedule by starting with the lowest level tasks before organizing them into higher level phases or summary tasks
  + This works from specific to general
* Linking tasks: task relationships reflect the order in which work must be completed
  + Predecessor: task whose start/end date determines the start/finish of another tasks/tasks
  + Successor: a task whose start/finish is driven by another task/tasks
  + Sequence: the chronological order in which tasks must occur
  + Dependency: a need/condition that exists between two elements
    - Mandatory: i.e. hard logic dependency; the first task MUST be done before the second task
      * Usually have a finish to start, but can be Start to Start with lag applied
    - Discretionary: i.e. soft logic/preferred dependency; the first task does not necessarily have to be done in order to complete the second task
    - External: something from outside the project is driving the task
* Task notes: supplemental text that you can attach to a task, resource, or assignment and allows you to document important information while keeping your project schedule succinct

# Chapter 2: establishing resources

* Resources: the people, equipment, materials, and money used to complete the tasks in a project
  + Availability: determines when and how much of a resource’s time can be assigned to work no tasks
  + Cost: refers to how much money will be needed to pay for the resources on a project
* Work resources: the people and equipment that do work to accomplish the tasks of the project
  + Can be in the form of:
    - individual people (noah hall),
    - individual people identified by job title or function (editor)
    - groups of people with a common skill (sound technician)
    - equipment (keyboard)
* People resources: track who is available to work, the type of work they can do, and when they are available to do it
  + Can be in the form of individuals, individuals identified by their job function/title, or groups of individuals with a common skill
* Equipment resources: track equipment resources when you need to schedule and track equipment costs or when the equipment might be needed by multiple people at the same time
* Material resources: consumable items used up as the tasks in a project are completed, but have no effect on the total amount of work scheduled to be performed on a task
  + Material label: the unit of measure to track consumption, e.g.
    - Resource name = dvd, material label = 2 hour disc
* Cost resources: doesn’t depend on the amount of work on a task or the duration of a task, and you can apply as many cost resources to a task as necessary
  + Cost resources are created as a type of resource and then assigned to a task,
  + Cost resources cannot have a calendar applied to them
  + Notes: resource costs may be confidential (e.g. how much money someone is paid) thus, you may use publically available salary data, or ask for an average salary rate from accounting
* Bill of Materials: BOM: tracks all resources and their costs & usage related to a project
* Maximum units the maximum capacity of a resource to accomplish tasks
  + i.e. if you specify that a resource has 75% maximum units, that indicates that 75% of the resource’s time is available to work on tasks assigned to it, MSP will warn you if you assign a resource to more tasks that it can accomplish at its maximum units
  + if you set it at 300%, that indicates you have 3 of the resource (e.g. resource = editor, max units = 300%, means you have 3 editors)
* resource calendar: define the resource’s working and nonworking time; provides default working times for the entire project
* base calendar: can be used as a task calendar, project calendar, or resource calendar and specifies default working and nonworking times; allows you to make future project-wide changes to a single base calendar (rather than editing each resource calendar again)

# Ch3: resource and task assignments

* assignment: the matching of a specific resource to a particular task, to either perform work or as a material or cost
* max units: the maximum capacity of a resource to accomplish tasks
  + the capacity of a resource to work when you assign that resource to a task is measured in units, and units are recorded in the max units field on the resource sheet view
  + full time resource = 100% or 1.0
* MSP uses the resource calendars to schedule the tasks
* over allocation:
  + assigning a resource more work than can be done within the normal work capacity of the resource
  + e.g. if you assign a resource to a task with more units than the resource has available
  + e.g. assign the resource to multiple tasks with schedules that overlap and with combined units that exceed those of the resource
* non effort driven: as you assign resources to a task, the duration remains constant and the work value is calculated
* work: the total amount of effort expended to complete a task
  + work = duration \* units
  + by default is expressed in hours
* duration formula: used in effort-driven scheduling;
  + duration = work/unit
* actions tag: an indicator that signals to the user of a change, additional information, formatting options, etc
* add multiple resources on same task:
  + increase total work because the task requires more person-hours: keep duration constant
    - means you need more WORKING HOURS for the specific duration
  + reduce duration so the task end sooner, but requires same amount of work
    - means instead of one person working 16 hours, and thus two 8 hour days
    - 2 people will work 16 hours, in one 8 hour day
  + reduce the hours that resource work per day, keep duration and work the same
    - means john was scheduled to work a total of 16 hours, but wants to only work 8
    - assign X to 8 hours, so that the duration & work is not reduced but still completes as scheduled
* remove resource from task
  + decrease the total work because the task requires less person-hours. keep duration constant
    - means you removed a resource because it wont take as many people to complete it in the specified time
  + increase duration so the task ends later but requires the same total work
    - means you removed a person, but the task still requires the same amount of work, so your forced to increase the duration
  + increase the hours that resources work per day. keep duration the same
    - means you removed the someone, but the duration & the work has not changed, so the existing resources will have to work harder

# Creating a project schedule

* You should perform all the planning processes associated with the project management methodology of your organization before entering any information into Microsoft project.
  + The following steps must be completed in order, because this is how the software expects the data to be entered
* Step 1: create a new blank project schedule
* Step 2: specify the start date:
  + Project tab > project information button >
* Step 3: define project calendar
  + Project tab> Properties command group > ‘change working time’ button >
  + ‘exceptions’ are holidays, enter in an exception, select, it, and click ‘details’
    - Select a date> type a name > click enter
* Step 4: entering tasks and task details
* Step 5: set task relationships
* Step 6: establish resources & their pay rates
* Step 7: establish resource working times for people & equipment resources
* step 8: assign resources

# Views:

* View: a window through which you can see various elements of your project schedule, **click the View tab**
* Gantt Chart View: measures activities by the amount of time needed to complete them, and to represent the amount of the activity that should have be done in a given time
* Resource Sheet: see information about all of the resources available to the project
* Resource usage: shows assignments, categorized by resource, i.e. which tasks are assigned to which resource
* Task usage: see information related to each task in the project,
* Calendar: provides task data in a calendar format
* Network Diagram: displays the logical sequencing of the tasks and the relationship these tasks have with other tasks in the project.
* split view:
  + view tab > split view group >
  + click details,
  + play around, its cool

# Steps

* Templates: start > new > search online for templates or on your hard disk
* Tasks: Task tab > click Gantt chart
* Resources: Resource tab > click resource sheet
* Resource Usage: click view tab > resource usage > click the resource name column header >in the data group, click outline & select hide subtasks
* Setup calendar:
  + Project tab > change working time button
* Setup calendar options:
  + File tab > options > schedule > look under ‘calendar options for this project’
  + Set the day the week starts on, fiscal year, default start & end time for shifts, hours per day, hours per week, days per month
* Switch from manual to automatic scheduling (or vise versa)
  + Select a task > click task tab > tasks command group > click auto schedule button/manual schedule button
* Create a milestone:
  + Enter 0 as the duration [or]
  + Click in a cell > task ribbon > insert command group > click ‘milestone’ button
* Organize tasks into phases, i.e. create summary tasks
  + Select a group of tasks > task ribbon > insert command group > summary button
  + Use the ‘outdent’ and ‘indent’ paragraph marks to move tasks in and out of summary groups
    - Task ribbon > schedule > look for the paragraph indent buttons
* Linking tasks:
  + Select 2/more tasks > task ribbon > schedule group > link the selected tasks button [or]
  + Hover over the bar in the gantt chart, and click & drag to another task
* Adding task notes
  + Double click the task name [or]
  + Task ribbon > properties group > notes button [or]
  + Right click task name > select task notes
* Review project duration
  + Project ta > properties group > project information button > statistics button
* Establish resources: resources tab > resources sheet button
  + Click in an empty cell > resources tab > properties group > information button [or]
  + Double click an empty cell
* Establish resource costs
  + Double click resource name
  + In the costs tab
  + 19.5/h = $19.5 per hour
  + 1000/w = $1000 per week
  + 25/d = $25 per day
* Establish nonworking time for a work resource
  + Project tab > change working time button > calendar box > select the resource
* Establish a specific work schedule for a resource
  + Project tab > change working time button > select the resource in the ‘for calendar’ dropdown > work weeks tab > details button
* attach a note to a resource
  + select a resource > resource tab > resource notes button [or]
  + double click resource name
* assign resources
  + resource tab > assignments group > assign resources button
  + in the gantt chart, click a task, in the resources pop-up, select a resource
* turn on/off effort-driven tasks
  + for all tasks: file > options > schedule > scheduling options > check new tasks are effort driven
  + for a single/group of tasks: task tab > properties group > information button > advanced tab > check effort driven checkbox
  + in the gantt chart: open the split view (see views section)

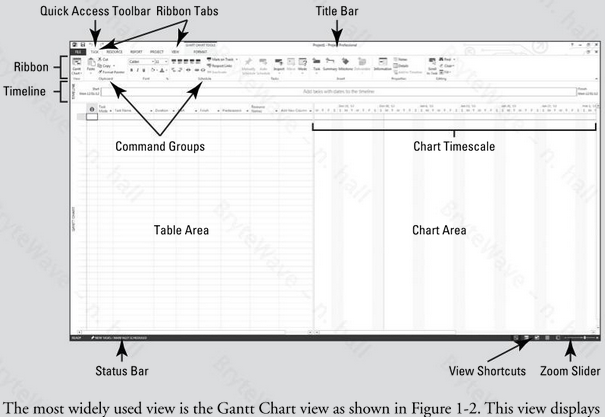
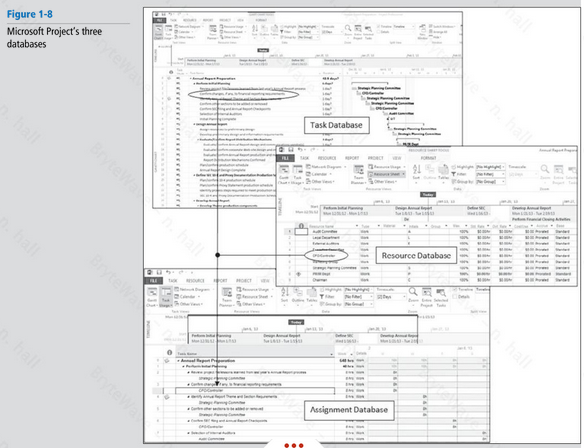
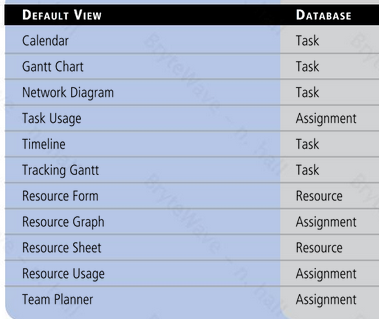
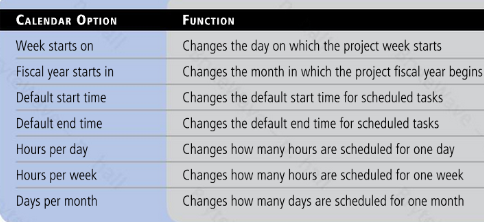
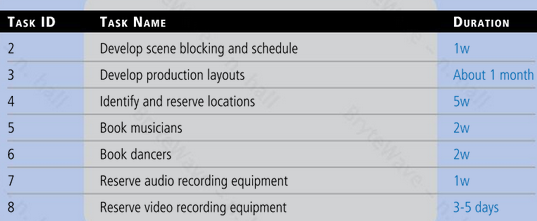
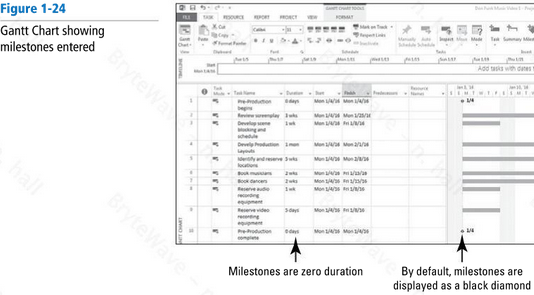
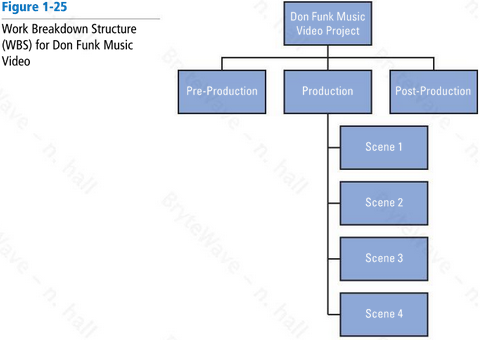
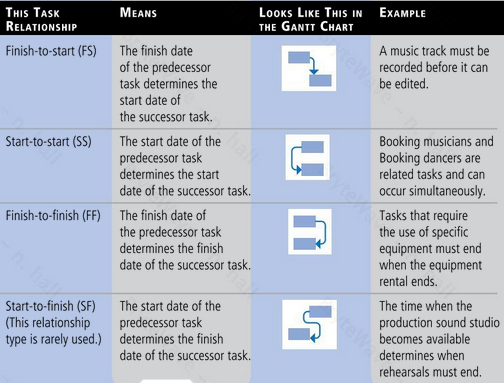
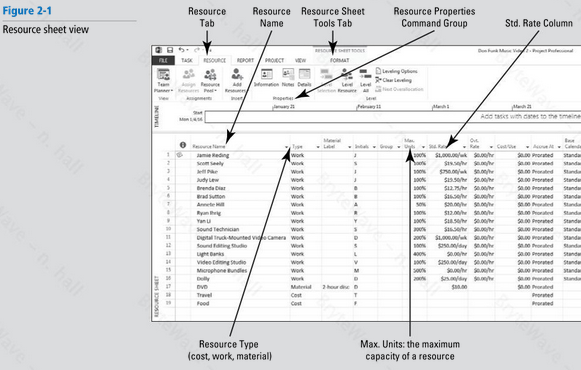
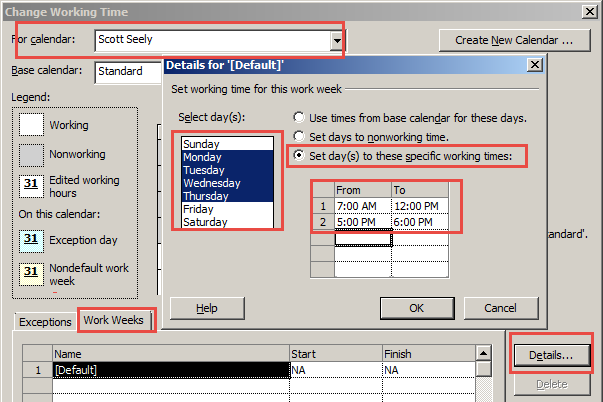
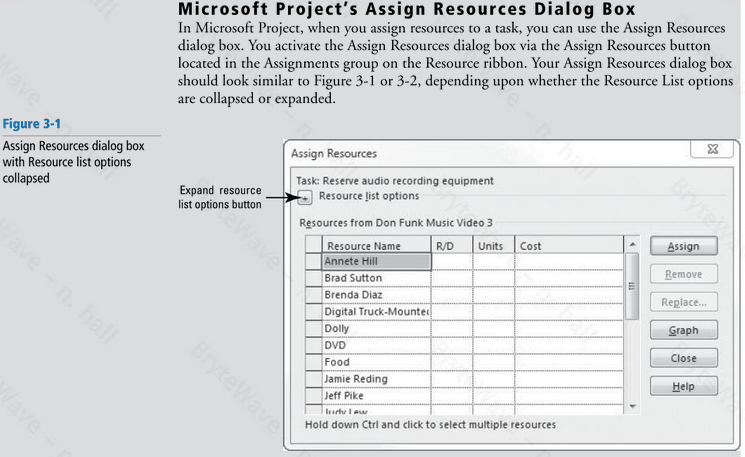
# Short cuts

* Task Usage: click in any cell and CTRL+SHIFT+F5 to go move the timeline where the cell’s task will start, works in most views, e.g. Gantt Chart & task usage
* Task indent/outdent
  + Alt+shift+right arrow (or left arrow)
* Link to tasks finish to start
  + Select both tasks > ctrl+f2

# notes

* tasks start/end dates won't update automatically
  + Is the calculate project after each edit option set to off?
    - File tab > options > schedule tab > under calculation click on/off
  + Is the show scheduling messages option turned off?
    - file tab > options > schedule tab > click to select/clear the show scheduling messages check box > advanced tab > under planning wizard, select all check boxes
    - after scheduling messages are turned on, Press F9 to see any scheduling messages that need to be resolved
  + are you scheduling from the project's start date or the finish date?
    - start date: tasks will begin as soon as possible
    - finish date: tasks will begin as late as possible
  + did you assign a constraint type other than as soon as possible (ASAP) to the task?
    - double lick the ID number for the task > click the advanced tab
  + Are there any predecessor or successor relationships
    - file tab > options > schedule tab > click to select "tasks will always honor their constraint dates
  + My findings
    - if a task is set to 100% complete, the start/end date will not automatically updated when changing the predecessor since the task is complete! duh

# Pictures

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