Unit: Project Management   ICS 4U
Topic: Project Management Tools
Time: 3 classes

Specific Expectations

B1.4   use an appropriate project management tool (e.g., Gantt chart, PERT chart,
              calendar) to manage project components;

Teacher Notes

The suggest time period for this lesson is three days. On day one, students are introduced to various
project management tools. They may need time to familiarize themselves with the software, Smart
Ideas. Day two is a work period for students to complete an individual project. Day three has been set
aside for the students to work with their software scope plan group.

If you chose to use Gantt charts in your classroom, they can be developed using Excel. They are harder
to create in QuattroPro. Microsoft also has a piece of software called, Microsoft Project that creates
Gantt charts.

Pert charts can be developed easily using Smart Ideas. Smart Ideas is licensed by the Ministry of
Education in Ontario. It can be used to create different types of charts to manage software projects.
There is a tutorial available at http://www.ncds.org/KTC/onlinetraining.aspx . Note that Smart Ideas has
a template for PERT charts. Utilize the tutorial or teach the basic elements to the class. Include:
placement of symbols, connecting arrows, layers, templates, user documents and training materials.

I have chosen to use PERT as the project management tool for this unit. You could modify the
assignments if your preference is Gantt charts.

Content/Student Notes	**Teaching Strategies**

Content/Student Notes

Day 1

- Project management tools—charts, calendars—are used to:
  o Identify deliverables and tasks
  o Determine sequence
  o Diagram events
  o Estimate time
  o Calculate critical path—longest path in event diagram
  o Track updates as an ongoing process

- Gantt Chart – bar graph used to represent management of project.
  o Shows starting dates and timelines for all tasks
  o Handout: Project Management Tools Examples
- PERT
  o Program Evaluation and Review Technique
  o May contain Gantt chart, symbol mapping
- Smart Ideas – software to map ideas, timelines, charts.

Day 2—work period

  o Individual assignment—to be completed for homework

Day 3—work period

- Group assignment

Teaching Strategies

- Lecture—project management tools. Note that the PERT example is a simplified example. Students will see more detailed examples in their readings.
- Using Smart Ideas to plan—see teacher notes.
- Students to create sample timeline using Smart Ideas from information.
  o Prepare chart/plan for exam preparation
    ▪ English, Jan. 30, approx. prep time 10 hours
    ▪ Math, Jan. 28, approx. prep time 15 hours
    ▪ Drama performance task, Jan. 15, approx prep time 8 hours
    ▪ Computer Science, Jan. 29, approx. prep time 5 hours
- Assign reading task for homework. Remind students that material from the reading may be included in the unit test.

- Answer questions/concerns about using Smart Ideas
- Assign Activity 1. Students will need to do some research to find information about the destinations on their trip.
- Students revisit product scope plan with deliverables and tasks to complete an project management char/plan. Assign activity 2.

Activity

- Practice creating organizational chart with sample information.
- Reading assignment—see attached page.
- Activity 1—Plan of Action.
- Activity 2—Group revisit software scope plan to create a chart/plan.
-

Resources

- Tutorial for Smart Ideas http://www.ncds.org/KTC/onlinetraining.aspx
- Information on history and layout of Gantt charts, http://en.wikipedia.org/wiki/Gantt_chart
- Step by step instructions to great Gantt chart with Excel. http://office.microsoft.com/en-us/excel/HA010346051033.aspx

Assessment

- √Observation of task completion
- Individual formative assessment Plan of Action. See rubric.
- Group assessment: Project Management Chart/Plan using Smart Ideas. See rubric.

Visual Aids/Equipment

- Electronic version of activities—Plan of Action, Chart/Plan
- Handout: Project Management Tools Examples
- Smart Ideas File attached: smartIdeasExample

Unit: Project Management
Activity: Plan of Action

Before you make the final decision of which university to attend, you and your parents decide to check out the various university campuses. The trip will take place during March break. Use a project management tool to develop a plan of action for the trip.

- o   Find out if the universities you have applied to have tours during March break.
- o   Develop a schedule for the campus visits.
- o   Locate motels for your stay and set up arrival times.

Activity: Plan of Action				
Category / Criteria	**Level 1 (50%-59%)**	**Level 2 (60%-69%)**	**Level 3 (70%-79%)**	**Level 4 (80%-100%)**
Understanding of Content Understands a project management tool	Demonstrates limited understanding of project management tool.	Demonstrates some understanding of project management tool.	Demonstrates considerable understanding of project management tool.	Demonstrates complete understanding of project management tool.
Thinking Use of planning skills to develop a plan of approach to solve a problem	Uses planning skills to analyze a real-world situation with limited effectiveness.	Uses planning skills to analyze a real-world situation with some effectiveness.	Uses planning skills to analyze a real-world situation with considerable effectiveness.	Uses planning skills to analyze a real-world situation with a high degree of effectiveness.
Communication Expression and organization of ideas and information in written forms, including electronic forms	Expresses and organizes ideas with limited effectiveness.	Expresses and organizes ideas with some effectiveness.	Expresses and organizes ideas with considerable effectiveness.	Expresses and organizes ideas with a high degree of effectiveness.
Application Application of project management tools to familiar contexts	Applies project management tools in familiar contexts with limited effectiveness.	Applies project management tools in familiar contexts with some effectiveness.	Applies project management tools in familiar contexts with considerable effectiveness.	Applies project management tools in familiar contexts with a high degree of effectiveness.

Note: A student whose achievement is below Level 1 (50%) has not met the expectations for this assignment or activity.

Unit: Project Management
Activity: Chart/Plan

Working with your group for this unit and the software, Smart Ideas, generate a chart/plan for the group project. Each member of the team will work on planning and scheduling for the project. Estimate start dates for each task, estimate time required for completion. Calculate the critical path.

Each deliverable should be included on the main page. Individual tasks for the deliverables may be included on linked pages.

The chart/plan is to be submitted in electronic form. The project manager is responsible for the submission.
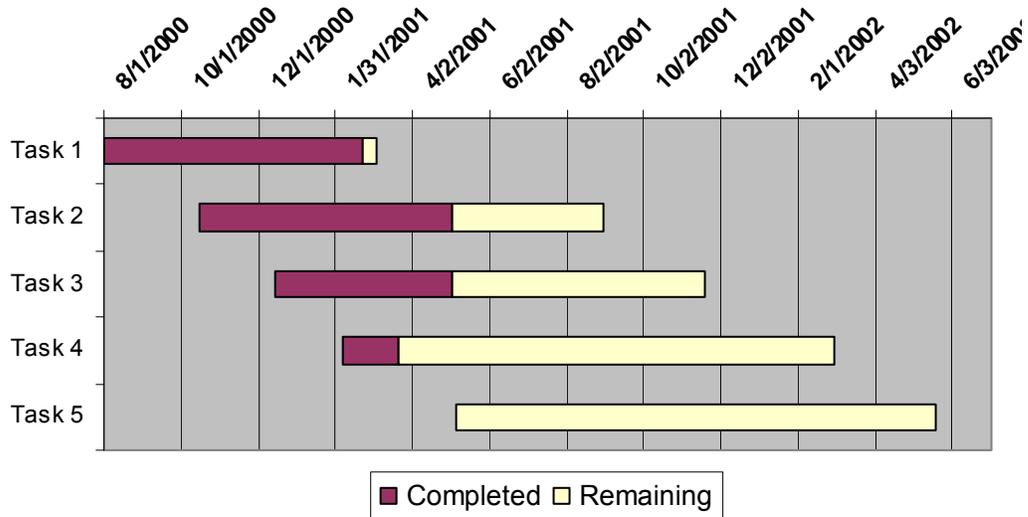
Activity: Chart/Plan				
Category / Criteria	**Level 1 (50%-59%)**	**Level 2 (60%-69%)**	**Level 3 (70%-79%)**	**Level 4 (80%-100%)**
Understanding of Content Understands a project management tool	Demonstrates limited understanding of project management tool.	Demonstrates some understanding of project management tool.	Demonstrates considerable understanding of project management tool.	Demonstrates complete understanding of project management tool.
Thinking Use of planning skills to develop a plan of approach to solve a problem	Uses planning skills to analyze a real-world situation with limited effectiveness.	Uses planning skills to analyze a real-world situation with some effectiveness.	Uses planning skills to analyze a real-world situation with considerable effectiveness.	Uses planning skills to analyze a real-world situation with a high degree of effectiveness.
Communication Expression and organization of ideas and information in written and visual forms, including electronic forms	Expresses and organizes ideas with limited effectiveness.	Expresses and organizes ideas with some effectiveness.	Expresses and organizes ideas with considerable effectiveness.	Expresses and organizes ideas with a high degree of effectiveness.
Application Application of project management tools to familiar contexts	Applies project management tools in familiar contexts with limited effectiveness.	Applies project management tools in familiar contexts with some effectiveness.	Applies project management tools in familiar contexts with considerable effectiveness.	Applies project management tools in familiar contexts with a high degree of effectiveness.

Note: A student whose achievement is below Level 1 (50%) has not met the expectations for this assignment or activity.
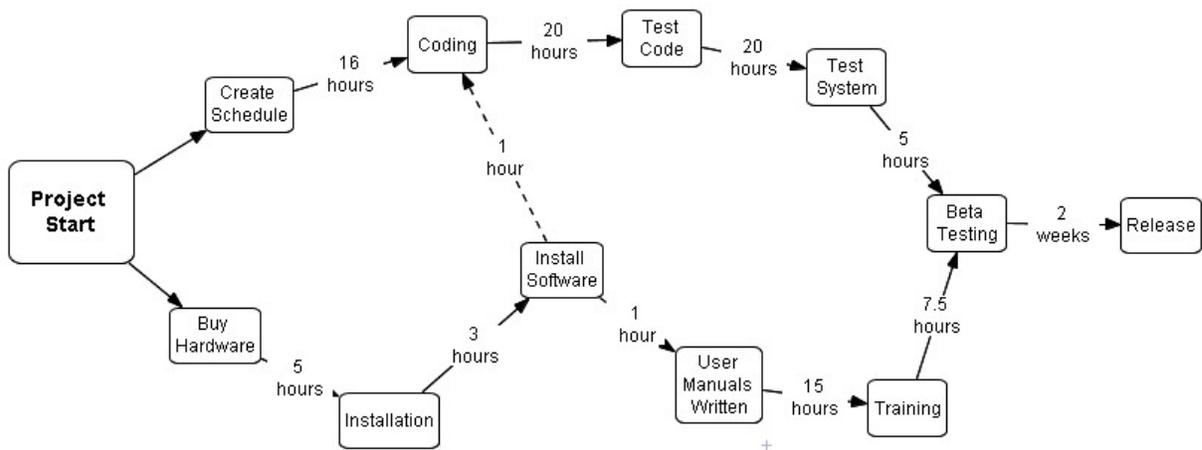
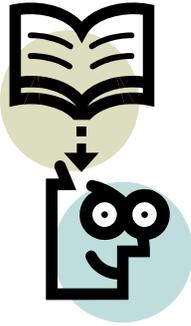# Project Management Tools Examples

Gantt Chart Example

Taken from Excel example,

PERT Example

Reading Assignment

Read each of the following articles. Use the accompanying questions as a guide to record information. Remember, that this material may not necessarily be covered formally in the classroom but you are responsible for the material.

- http://en.wikipedia.org/wiki/Gantt_ chart
- http://en.wikipedia.org/wiki/Program_Evaluation_and_Review_Technique
- http://en.wikipedia.org/wiki/List_of_project_management_software

1. Define collaborative groupware.
2. Define Gantt chart.
3. List two disadvantages of the Gantt chart
4. What is the critical path? How is it calculated?
5. List three open source project management software.
6. Define event chain diagram.
7. What makes PERT different from a Gantt chart?