**Instructions**

On the next page are PERT/CPM exercises. It consists of one where the data is given in table form while the other two are narratives. The objective of this exercise is to be able to:

1. Identify the tasks/activities in the narrative and the corresponding durations of each. Use letters as your task IDs.
2. Create the PERT diagram
3. Perform a forward pass
4. Perform a backward pass
5. Identify how long the project will take and determine the critical path.

Although this is not a homework and this is NOT TO BE SUBMITTED, I encourage you to try it out.

**Data Given in Table Form**

Jay Mor, a project manager of Print Software, Inc. wants you to perform a project analysis on a confidential project which will start on September 1. Based on the information collected by the head of the Color Printers Driver Software Division of the Print Software, Inc., you are tasked to create a project network, compute for the early, late and slack activity times; determine the project duration and identify the critical path.

|  |  |  |  |
| --- | --- | --- | --- |
| ID | Description | Predecessor | Time |
| A | External Specifications | None | 8 |
| B | Create design features | A | 40 |
| C | Document features | A | 30 |
| D | Write software | A | 60 |
| E | Program and test | B | 60 |
| F | Edit and Publish notes | C | 10 |
| G | Review manual | D | 10 |
| H | Alpha Site | E, F | 20 |
| I | Print Manual | F, G | 10 |
| J | Beta Site | H, I | 10 |
| K | Manufacture | J | 12 |
| L | Release and ship | K | 3 |

**Sample narrative 1**

A company is planning to manufacture an IT product that consists of three parts (A, B, and C). The company anticipates that it will take 5 weeks for the design stage. This involves designing the three parts and determining the way in which these parts must be assembled to make the final product. Then the company estimates that it will take 4 weeks to make Part A, 5 weeks to make Part B, and 3 weeks to make Part C. The company must test Part A after it has been completed, and the testing takes 2 weeks. The assembly line process will then proceed as follows: assemble Parts A and B (2 weeks) and then attach Part C (1 week). Then, the final product must undergo 1 week of testing.

It should be noted that after the design stage, the marketing department will have to develop the packaging in parallel with the product development. The packaging department usually takes 3 weeks to design and another 2 weeks for the approval process. The printer will need 3 weeks to manufacture the carton where the new product will be placed.

Once the product and the packaging are done, it takes 1 week for the product to be packaged and then sent to the retailers.

**Sample narrative 2**

An insurance company has decided to construct a local area network in one its large offices so that its employees can share printers, files and other conveniences. The IT manager identified a set of activities that the IT Department had to do in order for the implementation to be successful.

The systems analysts had to first perform a needs analysis and then develop the specifications for the LAN. When asked, the SA said that it will take him around 10 days to do the needs analysis and then 6 days to develop the specifications. These specifications will then be sent to the hardware specialist who has to select the server (6 days), the software (12 days), and the networking equipment (4 days) needed. Selecting the software to be used can only be done after the server has been identified; the networking equipment though can be selected once the specifications are finished. After selecting the equipment, two activities can be done in parallel. First, a purchase request is then made to purchase all the equipment needed (HW, SW, and network) and it usually takes the purchasing department 3 days to purchase the equipment. Second, the user manuals can also be made by the documentation specialist. He usually takes 6 days to do this. These user manuals will then used to develop a training program for the employees of the insurance company. This step usually takes 12 days.

When the equipment arrives, the network team can wire the office within 12 days. While this is being done, the hardware specialist can set up the server -- he estimates that it will just take 3 days to do this – and then it will take another 4 days to install the software. Once the network is finished and the software is installed in the server, the network team can then set up the network in 3 days.

Once the manuals are finished and the set up of the network is finished, training the employees can begin. Since there are over 30 employees, the IT manger estimates that it will take them 8 days to complete the user training. After the set-up of the network and while the training is happening, the network team takes this opportunity to test and debug the system. They plan to do this for 12 days.

Once the user training is finished and the testing and debugging phase is completed, the IT manager plans to get management acceptance. As this is a major undertaking, he thinks it will take 4 days before the gets final approval.