ESTIMATED COMPLETION TIME: 20 minutes

steps, you plan four different systems. Each member of the workgroup should work separately, planning four systems. Follow these steps:

1. Plan a system that will be used for gaming and Web surfing. Complete the following:
   - Applications you are likely to install:

     _____

     _____
   - Hardware needed:

     _____

     _____
   - Most important hardware components needed for gaming and Web surfing:

     _____

     _____
2. Plan a system that will be used for programming. Complete the following:
   - Applications you are likely to install:

     _____

     _____
   - Hardware needed:

     _____

     _____
   - Most important hardware components needed for programming:

     _____

     _____
3. Plan a system that will be used for office applications. Complete the following:
   - Applications you are likely to install:

     _____

     _____
   - Hardware needed:

     _____

     _____

- Most important hardware components needed for office applications:

4. Plan a system that will be used for a company file server. Complete the following:
   - Applications you are likely to install:
   - Hardware needed:
   - Most important hardware components needed for a company file server:
5. For each type of system, discuss the differences in the systems each member of your group planned. List the major differences here:
6. As a group, agree on a set of specifications for each system. How do the specifications your group agreed on differ from your original specifications?
7. Assign one type of system to each member of the group. List the assignments for each group member. In Labs 2.4 and 2.5, each member of the group will continue planning the type of system assigned here:

REVIEW QUESTIONS

1. What type of system was assigned to you?

2. What resources do you need to produce a detailed design for this system?

3. Did you find the process of discussing different types of systems helpful? Why or why not?

4. On which type of system was there the most disagreement on requirements?

5. If you had a budget crunch, where would you sacrifice on your system? Justify your reasoning:

?.4 DETERMINE SYSTEM REQUIREMENTS

TIVES

The goal of this lab is to help you determine the specific requirements for the system you plan to build. After completing this lab, you will be able to:

- List minimum software and hardware components required for a particular type of system

RIALS REQUIRED

This lab requires the following:

- Internet access
- A workgroup of 2 to 4 students (different people than in Lab 2.3)

PREPARATION

Before the lab begins, the instructor or lab assistant needs to do the following:

- Verify that Windows starts with no errors.
- Verify that Internet access is available.
- Ask students to break into different groups from Lab 2.3.

VITY BACKGROUND

In the previous lab, you were assigned a type of system to build, and you made some preliminary plans for it. In this lab, you make more specific decisions about the required software and hardware components. For now, ignore budget constraints; you address those issues in Lab 2.5.

ESTIMATED COMPLETION TIME: 30 minutes

Activity

1. Working from the preliminary requirements you formed in Lab 2.3, use the Internet to research system requirements for your assigned type of system. Complete the following list of requirements:
   - CPU speed:

     _____
   - Memory:

     _____
   - Hard drive size:

     _____
   - Case:

     _____
   - Motherboard:

     _____
   - Monitor size and resolution:

     _____
   - Type of printer:

     _____
   - Expansion cards:

     _____
   - Other peripheral hardware (such as keyboard, mouse, PC camera, speakers, and so on):

     _____
   - Drives needed (for example, hard drives, CD or DVD, tape backup, or floppy):

     _____
   - Operating system:

     _____
   - Applications:

     _____
   - Any other requirements:

     _____
2. Use the Internet or your local computer store to learn more about each component. List the description and cost of each component. If you're doing your research on the Internet, print

the Web page describing each component. (The Web page you print should include the component's price.) If you're conducting your research at a computer store, take careful notes, and be sure to note a price for each component. At this point, you're interested in evaluating your options for each component, so collect information on more than one possibility. For example, for a motherboard, gather information for two or three different motherboards that satisfy your system requirements. Although you need to list the price for each component, don't be concerned about total cost at this point in your research. The following Internet resources might be helpful in your search, although you can use others as well:

- *www.cnet.com*
- *www.tomshardware.com*
- *www.motherboards.com*
- *www.pricewatch.com*
- *www.dirtcheapdrives.com*

3. After you have finished gathering system requirements, find another student from another group who planned the same type of system you did. Compare your plans and note the differences.

REVIEW QUESTIONS

1. What sites did you use for your research besides the previously listed ones?

_____

_____

_____

2. Did you add any components to your list or remove any from it after researching the type of system you want to build? Explain:

_____

_____

_____

3. What processor manufacturer, model, and speed did you select? Why? How much would the same speed processor from another manufacturer cost?

_____

_____

_____

4. What amount of memory and hard drive size do you plan to use? How did you make your choices?

_____

_____

_____

2

ESTIMATED COMPLETION TIME: 30 minutes

1. Use the information about specific hardware components that you compiled in Lab 2.4 to fill in Table 2-1. List the price of each component in your dream system in Table 2-1. (Note that you might not use all the rows in the table.) At the bottom of the table, list the total cost for your dream system.

ponent	Manufacturer and model	Cost
ssor Processor		
erboard Motherbd		
ory memory		
case		
o card video		
nsion card 1 expansion		
nsion card 2		
nsion card 3		
drive hard		
r DVD drive		
py drive floppy		
r drives other		
drive tape		
itor monitor		
oard Kybd		
se mouse		
kers speakers		
ter printer		
rating system OS		
ication 1 application		
ication 2		
ication 3		
ication 4		
r		
r other		
r		
l cost of the system		

2-1 Dream system

2. Review your list of components in Table 2-1 and prioritize them. In Table 2-2, list th components in order of importance. In the Notes column, make notes on how much you need each component and whether you can use a lower-cost version or eliminate altogether. Indicate which (if any) components you're most willing to sacrifice to be a to afford a better component in another area of the system.

Component	Priority	Notes
Processor		
Motherboard		
Memory		
Case		
Video card		
Expansion card 1		
Expansion card 2		
Expansion card 3		
Hard drive		
CD or DVD drive		
Floppy drive		
Other drives		
Tape drive		
Monitor		
Keyboard		
Mouse		
Speakers		
Printer		
Operating system		
Application 1		
Application 2		
Application 3		
Application 4		
Other		
Other		
Other		
Total cost of the system		

Table 2-2 Priority of system components

3. Pare down your list to the absolute minimum for the type of system you're building: the lowest amount of memory and hard drive space, the cheapest monitor, and so on. In Table 2-3, list the lowest prices available for each component, and calculate the total cost of your bare-bones system.

Component	Manufacturer and model	Cost
Processor		
Motherboard		
Memory		
Case		
Video card		
Expansion card 1		
Expansion card 2		
Expansion card 3		
Hard drive		
CD or DVD drive		
Floppy drive		
Other drives		
Tape drive		
Monitor		
Keyboard		
Mouse		
Speakers		
Printer		
Operating system		
Application 1		
Application 2		
Application 3		
Application 4		
Other		
Other		
Other		
Total cost of the system		

Table 2-3 Bare-bones system

4. In Table 2-4, list the components of a system that's a reasonable compromise between the dream system and the bare-bones system. This midrange system is the one you work with in Lab 2.6.

Component	Manufacturer and model	Cost
Processor		
Motherboard		
Memory		
Case		
Video card		
Expansion card 1		
Expansion card 2		
Expansion card 3		
Hard drive		
CD or DVD drive		
Floppy drive		
Other drives		
Tape drive		
Monitor		
Keyboard		
Mouse		
Speakers		
Printer		
Operating system		
Application 1		
Application 2		
Application 3		
Application 4		
Other		
Other		
Other		
Total cost of the system		

Table 2-4 Midrange system

5. Compare your results from Steps 1 through 4 with the results of another student planning the same type of system. Compare cost estimates and note differences in the components you both planned to include. Note how you arrived at your calculation:

_____

_____

_____

6. Repeat Step 5 with at least one student planning a different type of system.

QUESTIONS

1. What was the cost difference between your dream system and the bare-bones version?

2. On which components were you willing to compromise and why?

3. On which components were you *not* willing to compromise and why?

4. How would the performance of your midrange system compare to the dream system? How would the performance of the midrange system compare to the bare-bones system? How would the performance of the dream system compare to the bare-bones system?

AB 2.6 CHECK SYSTEM COMPATIBILITY

BJECTIVES

The goal of this lab is to help you verify that the components in a proposed system are compatible. After completing this lab, you will be able to:

- Find incompatibilities between components in a proposed system
- Suggest an alternative system of approximately the same price

ATERIALS REQUIRED

This lab requires the following:

- Internet access
- A workgroup of 2 to 4 students

AB PREPARATION

Before the lab begins, the instructor or lab assistant needs to do the following:

- Verify that Internet access is available.