

Pre-test Discussion

- ✓ **System software** is computer software designed to operate the computer hardware and to provide a platform for running applications

software.

<number>

<number>

- ✓ Software that allows users to do things like create text documents, play games, listen to music, or surf the web.
- ✓ Also called *link editor* and *binder*, a linker is a program that combines object modules to form an executable program. Many programming languages allow you to write different pieces of code, called *modules*, separately. This simplifies the programming task because you can break a large program into small, more manageable pieces. Eventually, though, you need to put all the modules together. This is the job of the linker.
- ✓ In addition to combining modules, a linker also replaces symbolic addresses with real addresses. Therefore, you may need to link a program even if it contains only one module.
- ✓ A type of programming in which programmers define not only the data type of a data structure, but also the types of operations (functions) that can be applied to the data structure. In this way, the data structure becomes an object that includes both data and functions. In addition, programmers can create relationships between one object and another. For example, objects can *inherit* characteristics from other objects.

- vOne of the principal advantages of object-oriented programming techniques over procedural programming techniques is that they enable programmers to create modules that do not need to be changed when a new type of object is added. A programmer can simply create a new object that inherits many of its features from existing objects. This makes object-oriented programs easier to modify.
- vIn programming, a named section of a program that performs a specific task. In this sense, a function is a type of procedure or routine. Some programming languages make a distinction between a *function*, which returns a value, and a *procedure*, which performs some operation but does not return a value.
- vMost programming languages come with a prewritten set of functions that are kept in a library. You can also write your own functions to perform specialized tasks.
- vIn programming, the statements and other constructs that control the order in which operations are executed. For example, common looping statements such as **for??next** and **while** are known as flow control statements. Branching statements, such as **if??then** are also part of a programming language's flow control mechanism.
- vConditional expressions are one of the most important components of programming languages because they enable a program to act differently each time it is executed, depending on the input. Most

programming languages use the word *if* for conditional expressions. For example, the conditional statement:

- vif x equals 1 exit
- vdirects the program to exit if the variable x is equal to 1.
- vRefer to handouts
- vIn object-oriented programming, a procedure that is executed when an object receives a message. A method is really the same as a *procedure*, *function* , or *routine in procedural programming languages*. *The only difference is that in object-oriented programming, a method is always associated with a class.*
- vSometimes called *text editor*, a program that enables you to create and edit text files. There are many different types of editors, but they all fall into two general categories:
 - v**line editors**: A primitive form of editor that requires you to specify a specific line of text before you can make changes to it. **screen -oriented editors**: Also called *full-screen editors*,these editors enable you to modify any text that appears on the display screen by moving the cursor to the desired location. The distinction between editors and word processors is not clear-cut, but in general, word processors provide many more formatting features. Nowadays, the term editor usually refers to source code editors that include many special features for writing and editing source code.

- vA machine language or an assembly language. Low-level languages are closer to the hardware than are high-level programming languages, which are closer to human languages.
- vA programming language such as C, FORTRAN, or Pascal that enables a programmer to write programs that are more or less independent of a particular type of computer. Such languages are considered high-level because they are closer to human languages and further from machine languages. In contrast, assembly languages are considered low-level because they are very close to machine languages.
- vThe main advantage of high-level languages over low-level languages is that they are easier to read, write, and maintain. Ultimately, programs written in a high-level language must be translated into machine language by a compiler or interpreter.
- vThe first high-level programming languages were designed in the 1950s. Now there are dozens of different languages, including Ada, Algol, BASIC, COBOL, C, C++, FORTRAN, LISP, Pascal, and Prolog.
- vBase 16
- v0-9 ---- A-F
- vBase 2: 0's and 1's
- vThe sequence, or order, of the character set built into a computer.

See ASCII chart and EBCDIC chart.

- vA program that translates programs from assembly language to machine language.
- vA program that translates *source code* into *object code*. The compiler derives its name from the way it works, looking at the entire piece of source code and collecting and reorganizing the instructions.
- v*Interpreters* analyzes and executes each line of source code in succession, without looking at the entire program.