

Multiple Choice

1. A structure can execute a set of statements only under certain circumstances.
a. sequence b. circumstantial c. decision d. Boolean
2. A structure provides one alternative path of execution.
a. sequence b. single alternative decision c. one path alternative d. single execution decision
3. A(n) expression has a value of either True or False.
a. binary b. decision c. unconditional d. Boolean
4. The symbols >, <, and == are all operators.
a. relational b. logical c. conditional d. ternary
5. A(n) structure tests a condition and then takes one path if the condition is true, or another path if the condition is false.
a. if statement b. single alternative decision c. dual alternative decision d. sequence
6. You use a(n) statement to write a single alternative decision structure.
a. test-jump b. if c. if-else d. if-call
7. You use a(n) statement to write a dual alternative decision structure.
a. test-jump b. if c. if-else d. if-call
8. and, or, and not are operators.
a. relational b. logical c. conditional d. ternary
9. A compound Boolean expression created with the operator is true only if both of its subexpressions are true.
a. and b. or c. not d. both
10. A compound Boolean expression created with the operator is true if either of its subexpressions is true.
a. and b. or c. not d. either
11. The operator takes a Boolean expression as its operand and reverses its logical value.
a. and b. or c. not d. either
12. A is a Boolean variable that signals when some condition exists in the program.
a. flag b. signal c. sentinel d. siren

True or False

1. You can write any program using only sequence structures.
False
2. A program can be made of only one type of control structure. You cannot combine structures.
False
3. A single alternative decision structure tests a condition and then takes one path if the condition is true, or another path if the condition is false.
False

4. A decision structure can be nested inside another decision structure.

True

5. A compound Boolean expression created with the and operator is true only when both subexpressions are true.

True

Short Answer

1. Explain what is meant by the term “conditionally executed.”

Conditionally executed means that a statement or block of code will only be executed if a certain condition is true.

2. Explain how a single alternative decision structure and a dual alternative decision structure differ.

A single alternative decision structure (if statement) executes a block of code if a condition is true; otherwise, it does nothing. A dual alternative decision structure (if-else statement) executes one block of code if the condition is true and another block if the condition is false.

3. Briefly describe how the and operator works.

The and operator combines two Boolean expressions and returns True only if both expressions are true; otherwise, it returns False.

4. Briefly describe how the or operator works.

The or operator combines two Boolean expressions and returns True if at least one of the expressions is true; otherwise, it returns False.

5. When determining whether a number is outside a range, which logical operator is it best to use?

It is best to use the or operator when determining if a number is outside a range.

6. What is a flag and how does it work?

A flag is a Boolean variable that signals when a specific condition exists in the program. It is typically used to indicate the presence or absence of a particular state or condition, and its value can be checked to control the flow of the program.