MCQs BANK

Object Oriented Programming

Topic: Loops

MCQs BANK No.: 4

Instructions:

This MCQs Bank contains question and solution on adjacent(even-odd) pages. First try to solve the MCQ by yourself, then look for the solution.

Best viewed in “single page view” in PDF viewer.

MCQ No: 1

Consider the following two statement:

1: The while statement is a looping construct that executes a block of code while a condition is true.

2: The loop condition must be a boolean expression.

a) Both 1 and 2 are TRUE
b) Only 1 is TRUE
c) Both 1 and 2 are FALSE
d) Only 2 is TRUE

MCQ No: 1 (Solution)

Ans: a) Both 1 and 2 are TRUE

Explanation:

The while statement is a looping construct control statement that executes a block of code while a condition is true. You can either have a single statement or a block of code within the while loop. The loop will never be executed if the testing expression evaluates to false. The loop condition must be a boolean expression.

MCQ No: 2

In which loop the test is performed at the end and the loop body executes at least once?

a) while loop
b) for loop
c) do-while loop
d) all of these

MCQ No: 2 (Solution)

Ans: c) do-while loop

Explanation:

The do-while loop is similar to the while loop, except that the test is performed at the end of the loop instead of at the beginning.

This ensures that the loop will be executed at least once. A do-while loop begins with the keyword do, followed by the statements that make up the body of the loop.

MCQ No: 3

Which of the following loop use this looping construct
(<initialization>; <loop condition>; <increment expression>)

a) while loop
b) for loop
c) do-while loop
d) all of the above

MCQ No: 3 (Solution)

Ans: b) for loop

Explanation:

The for loop is a looping construct which can execute a set of instructions a specified number of times. It's a counter controlled loop. The syntax of the loop is as follows:

```
for (<initialization>; <loop condition>;
<increment expression>)
 <loop body>
```

MCQ No: 4

What will be the output of the following program:

```
// filename Test.java
class Test {
    public static void main(String[] args) {
        for(int i = 0; 1; i++) {
            System.out.println("Hello");
            break;
        }
    }
}
```

a) Infinite Loop
b) Hello
c) Compiler Error
d) Runtime Error

MCQ No: 4 (Solution)

Ans: c) Compiler Error

Explanation:

The code gives Compiler Error. There is an error in condition check expression of for loop. Java differs from C++(or C) here. C++ considers all non-zero values as true and 0 as false. Unlike C++, an integer value expression cannot be placed where a boolean is expected in Java.

MCQ No: 5

What will be the output of the following code?

```
// filename Test.java
class Test {
        public static void main(String[] args) {
                for(int i = 0; true; i++) {
                System.out.println("Hello");
                        break;
                }
        }
}
```

a) Hello
b) Infinite times Hello
c) Compiler Error
d) Runtime Error

MCQ No: 5 (Solution)

Ans: a) Hello

Explanation:

The Program prints Hello 1 time only. This is because although the condition in the for loop is true(always true) but there is a break statement after the print statement, which terminates the loop and transfers the control outside the for loop.

MCQ No: 6

What will be the output of the following program:

```
// filename Test.java
class Test {
        public static void main(String[] args) {
                for(int i = 0; true; i++); {
                System.out.println("Hello");
                        break;
                }
        }
}
```

a) Executes but no output
b) Prints Hello
c) Runtime Error
d) Compiler error: break outside switch or loop

MCQ No: 6 (Solution)

Ans: d) Compiler error: break outside switch or loop

Explanation:

If you note carefully there is a semicolon just after the for loop. This makes the for loop as do nothing loop, because the for loop body is terminated at the semicolon.

Now, break statement must be inside some loop block or switch-case block. As the break statement is not inside any loop body it generates error during compilation.

MCQ No: 7

What will be the Output of the following code?

```
// filename Test.java
class Test {
        public static void main(String[] args) {
                for(int i = 0; true; i++); {
                System.out.println("Hello");
                        //break;
                }
        }
}
```

a) Executes but print nothing
b) Prints Hello
c) Compiler Error:unreachable statement
d) Runtime Error

MCQ No: 7 (Solution)

Ans: c) Compiler Error: unreachable statement

Explanation:

In the for loop there is a semicolon at the end of loop, which makes the loop as do-nothing loop. Also the condition of the loop is always true which results in executing the blank statement infinite times. The flow of the program gets stuck at for loop statement and the print statement is never reached, as a result it give "unreachable statement" error.

MCQ No: 8

What will be the output of the following code?

```
// filename Test.java
class Test {
        public static void main(String[] args) {
                for(;;) {
                System.out.println("Hello");
                        break;
                }
        }
}
```

a) Hello
b) Compiler Error
c) Runtime Error
d) Print Hello infinite times

MCQ No: 8 (Solution)

Ans: a) Hello

Explanation:

All the sections in the for-loop header are optional. Any one of them can be left empty, but the two semicolons are mandatory. In particular, leaving out the <loop condition> signifies that the loop condition is true. The (;;) form of for loop is commonly used to construct an infinite loop.

In the for loop body there is a break statement which terminates the for loop.

MCQ No: 9

A _____ stops the iteration of a loop (while, do or for) and causes execution to resume at the top of the nearest enclosing loop. Fill in the blank.

a) return statement
b) break statement
c) continue statement
d) None of these

MCQ No: 9 (Solution)

Ans: c) continue statement

Explanation:

A continue statement stops the iteration of a loop (while, do or for) and causes execution to resume at the top of the nearest enclosing loop. You use a continue statement when you do not want to execute the remaining statements in the loop, but you do not want to exit the loop itself.

MCQ No: 10

Which among the statements transfers the control of the program out of the enclosing loop (for, while, do or switch statement).?

a) return statement
b) break statement
c) continue statement
d) None of these

MCQ No: 10 (Solution)

Ans: b) break statement

Explanation:

The break statement transfers control out of the enclosing loop (for, while, do or switch statement). You use a break statement when you want to jump immediately to the statement following the enclosing control structure.