Cognizant Technology Solutions

Statements Exercise

CATP Java Team
5/20/2012

For The Associates:

The documents details two flavors of problem statements

- **Statement # 1:** Few problem solutions have been provided for associates should analyze the program and write down the program output. This will enhance the analyzing skills of associates and also understand "why" part of java programming feature. The associates can then try running the program in eclipse and check if the output with what they have written.
- **Stamen # 2:** There are some problem statements provided similar to the final assessment and associates need to solve it. This will enhance the programming skills of the associates.
  IMPORTANT: These exercises will gear you up for the core java assessment so please develop/analyze the exercise independently. In case you are stuck up reach out to the trainers.

Exercises:

1**:** What is the result of compiling and running the following code?

```
public class Tester {
public static void main(String[] args) {
int x = 0;
int y = 0;
if ((true & false) | (true & false) & x++>0)
System.out.print("stmt1 ");
if (false || true | (++y> 0 | y++>0))
System.out.print("stmt2 ");
System.out.print(x+" "+y);
}
}
```

2. What is the result of compiling and running the following code?

```
public static void main(String[] args) {
int x = 1, y = 0;
if ((y == x++) && (x < ++y)) { }
System.out.println(x + "" + y);
}
```

3. What is the result of compiling and running the following code?

```
public static void main(String[] args) {
int x = 0, y = 0;
if ((y == x++) | (x < ++y)) {
++y;
}
System.out.println(x + "" + y);
}
```

4. What is the result of compiling and running the following code?

```
public class Tester {
public static void main(String[] args) {
do {
System.out.print(“inside do”);
} while (false);
while (false) {
System.out.print(“inside while”);
}
System.out.print(“outside”);
}
}
```

5. What is the result of compiling and running the following code?

```
public static void main(String[] args) {
int j = 10;
switch (1) {
case 20:
j += 1;
case 40:
j += 2;
default:
j += 3;
case 0:
j += 4;
}
System.out.print(j);
}
```

6. Knowing that character 'a' has a numeric value equal to 97, what is the output of the following code

```
public class CaseTest {
public static void main(String... s) {
char c = 'a';
switch (c) {
case 'a': {
System.out.println(“a”);
break;
}
case 97: {
System.out.println(“97”);
break;
}
}
}
```

7. What will be the output of the program?

```
class Test
{
    public static void main(String [] args)
    {
        int x= 0;
        int y= 0;
        for (int z = 0; z < 5; z++)
        {
            if (( ++x > 2 ) && (++y > 2))
            {
                x++;
            }
        }
        System.out.println(x + " " + y);
    }
}
```

8. What is the result of compiling and running the following code?

```
public class Tester {
boolean isEven(int x) {
return (x % 2 == 0) ? true : false;
}
public static void main(String[] args) {
System.out.print(isEven(2));
System.out.print(isEven(3));
System.out.print(isEven(4));
}
}
```

9. What will be the output on running the code?

```
public static void main(String[] args) {
String entries[] = {"entry1","entry2"};
int count=0;
while (entries [count++]!=null){
System.out.println(count);
}
System.out.println(count);
}
```

12. What is the output?

```
class InitDemo{
static int i=demo();
static{System.out.println(i);}
InitDemo(){
System.out.println("hello 1");
}
public static void main(String... args){
System.out.println("Hello 2");
}
static int demo(){
System.out.println("Inside Demo");
return 10;
}
}
```

13. What is the result of compiling and running the following code?

```
public class Tester {
static int x = 4;
int y;
public Tester(int a,int b) {
this.x=a;
this.y=b;
System.out.println("Value of  x :"+this.x);
System.out.println("Value of  y :"+this.y);
Tester();
}
public static void testMethod() {
System.out.print(this.x);
}
public static void main(String... args) {
new Tester(5,10);
Test mytest=new Tester();
Mytest.testMethod();
}

}
```

14. What is the result of compiling and running the following code?

```
public class Test {
        static int p = test();
        public static  int test() {
        System.out.println(p);
        return 99;
        }
        public static void main(String[] args)
        {
        System.out.println(p);
        }
}
```

15. What is the result of compiling and running the following code?

```
public class LoopTest {
public static void main(String args[]) {
int a = 5;
outside: for (int i = 1; i < 3; i++) {
inside: for (int j = 1; j < 3; j++) {
System.out.print(j);
if (a++ >6)
continue inside;
break outside;
}
}
}
}
```

16. What is the expected output?

```
public class LoopTest {
public static void goLoop(int a) {
start: for (int i = 1; i < 2; i++) {
for (int j = 1; j < 2; j++) {
if (a > 5) {
break start;
}
System.out.print(i + j);
}
}
}
public static void main(String args[]) {
LoopTest.goLoop(15);
}
}
```

17. Create a class that can calculate the sum of the first n numbers of the following series

1+3+5+7+9+11……. and return the sum

Class Name	SeriesCalculator
Method Name	calculateSum
Method Description	Calculates the sum of first n numbers
Argument	int n
Return Type	int – Sum
Logic	Calculate the sum of the series which represents a arithmetic progression using the formula Sum=(n/2)*[2*a + (n-1)*d] Where n- number of terms a-First term of the series (Here 1) d-common difference (Here 2)

18. Create a class that contains methods for reversing a three digit number and the other for finding the sum of digits of a three digit number.

Class Name	NumberManipulator
Method Name	reverseNumber
Method Description	Reverses a Three digit number
Argument	int number
Return Type	int – Reverse of the number
Logic	Digits can be separated as shown 123 %10=3 First Digit 123/10=12 12%10=2 Second Digit 12/10= 1 Third Digit Now the number should be reversed to 321 for which we can multiply each digit by the place value and add it 3*100 + 2*10 + 1*1 =321
Method Name	calculateSum
Method Description	Calculates the sum of digits of three digit number
Argument	int number
Return Type	int – Sum of the digits of the number
Logic	Separate the digits of the number and add the digits to get the sum

19. Create a class that checks whether the entered number is prime or not

Class Name	PrimeChecker
Method Name	checkPrime
Method Description	Checks if the entered number is prime or not
Argument	int n
Return Type	boolean – True if number is prime
Logic	Check if the entered number is prime or not