

CSEP

Computer Science and Elements of Programming

Self-Assessment Test

Given: 9th December 2008

Solution provided: 23rd January 2009

<http://www.dcs.bbk.ac.uk/~dimarzo/courses/csep/SelfAssessmentTest.pdf>

Instructions

- Answer the 20 questions below.
- Each correct answer provides 5 marks.
- On January, check with the solution provided.
- Add up all marks.

Questions

1. In a single Java instruction, declare a variable called `i` of type `double` and assign to it value 5.

```
double i = 5;
```

2. Is the Java type `String` a primitive type?

No, it is a class.

3. Write the instruction for printing on the standard output (terminal window) the following message: `Hello World`.

```
System.out.println("Hello World");
```

4. Consider the following instruction:

```
long n = 91;
```

What is the name of the variable? `n`

What is the type of the variable? `long`

What is the value stored in the variable (if any)? `91`

5. What will the following instructions cause to be printed on the screen:

```
String a = "2";
```

```
int b = 3;
System.out.println("The total value is " + a + b);
```

The total value is 23

6. What is the value stored in j:

```
int j = 32 - 5 * 3 % 2;
```

31

7. Is this a valid assignment:

```
int i == 3;
```

no

8. What is the value stored in compare:

```
String name1 = "Mark";
String name2 = "Kevin";
boolean compare = name1 == name2;
```

false

9. What is the value stored in compare:

```
int val1 = 10;
int val2 = 5;
boolean compare = val1 < val2;
```

false

10. What is the value stored in compare:

```
boolean compare = '1' == 1;
```

false

11. What will the following instructions cause to be printed on the screen:

```
int temperature = 22;
if ( temperature > 20 )
    System.out.print("Switch off ");
else
    System.out.print("Switch on ");
System.out.println("the heating");
```

Switch off the heating

12. Consider the following method:

```
public static void checkCandidate (int years, boolean bsc){
    ...
}
```

Complete this method so that it prints on the standard output whether the candidate is hired to a job. A candidate is hired if s/he has 3 years or more of work experience or s/he has a BSc degree

```
public static void checkCandidate (int years, boolean bsc){
    if (years >= 3 || bsc)
        System.out.println("The candidate is hired");
    else
        System.out.println("The candidate is NOT hired");
}
```

13. Consider the following method:

```
public static void printInOrder(int a, int b){
    ...
}
```

Complete this method so that it prints on the standard output the smallest one of the two numbers first, then the other.

```
public static void printInOrder(int a, int b){
    if (a < b)
        System.out.println(a + " and " + b);
    else
        System.out.println(b + " and " + a);
}
```

14. What will the following instructions cause to be printed on the screen:

```
for (int i = 1; i < 10; i++) {
    System.out.println( 2 * i );
}
```

2
4
6
8
10
12
14
16
18

15. What will the following instructions cause to be printed on the screen:

```
int j = 3;
while (j < 10) {
    System.out.println(j);
    j = j-1;
}
```

Infinite loop of decreasing number: 3, 2, 1, 0, -1, ...

16. Convert the following while into a for.

```
int j = 20;
while (j > 5) {
    System.out.println(j);
    j = j-2;
}
```

```
for (int j = 20; j > 5; j=j-2)
    System.out.println(j);
```

17. Write a for that prints the numbers 5 4 3 2 1 in that order.

```
for ( int j = 5; j >= 1; j--)
    System.out.println(j);
```

18. Consider the following method:

```
public static void calculator(int i, int j){
    System.out.println(i + "+" + j + "=" + (i+j));
}
```

Write the instruction for invoking method calculator() with values 7 and 12.

```
calculator(7,12);
```

19. Consider method calculator() defined in 11.

What will be printed on the standard output when calculator is invoked with values 5 and 9?

5+9=14

20. Consider the following instruction:

```
printValue(9.5);
```

This instruction causes the following output:

```
The value is 9.5
```

to be printed on the screen.

Write the necessary instructions to declare method printValue().

```
public static void printValue(double f){
    System.out.println(f);
}
```