CSE 1001: Introduction to Computer Programming

Programming Assignment-1
Solutions
(Elements of Programming)

Question-1:
Write a java program to display following messages.
Hello "ITERIAN"
Welcome to Siksha 'O' Anusandhan Family.
Welcome to "Introduction to Computer Laboratory"
Java is fun for All !!

Answer:

```java
public class QuestionOne {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        System.out.println("Hello \"ITERIAN\"");
        System.out.println("Welcome to Sikhsa 'O' Anusandhan Family");
        System.out.println("Welcome to \"Introduction to Computer Labrotory\"");
        System.out.println("Java is fun for ALL!!");
    }

}
```

Question-2:
Write a complete Java program that shows the pattern similar to the following.

Answer:

```java
public class QuestionTwo {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        System.out.println("*******     *******");
        System.out.println("    *       *     *");
        System.out.println("    *******     *******");

    }

}
```

Question-3:

Write a java program to print the following pattern using Hash (#).

```
###############################################
##                                         ##
##                                         ##
##                                         ##
##                                         ##
##                                         ##
###############################################
```

Answer:

```java
2 public class QuestionThree {
3
4●     public static void main(String[] args) {
5          // TODO Auto-generated method stub
6          System.out.println("###################################");
7          System.out.println("##                              ##");
8          System.out.println("##                              ##");
9          System.out.println("##                              ##");
10         System.out.println("##                              ##");
11         System.out.println("##                              ##");
12         System.out.println("###################################");
13     }
14
15 }
```

Question-4:

Write a java program that will display your First, Middle and Last name in different lines without using the method println( ).

Answer:

```java
2 public class QuestionFour {
3
4●     public static void main(String[] args) {
5          // TODO Auto-generated method stub
6          System.out.print("first\nmiddle\nlast");
7
8     }
9
10 }
```

Question-5:
Write a java program to greet someone. Your program stores person name and greeting message into two variables, and displays their values on the screen.
E.g. Hey Rishi, Good Morning!

Answer:

```java
2 public class QuestionFive {
3
4      public static void main(String[] args) {
5          // TODO Auto-generated method stub
6          String msg1="Rishi";
7          String msg2="Good Morning";
8          System.out.print("Hey "+msg1+", "+msg2);
9      }
10
11 }
```

Question-6:
Write a java program to store your Bank account no, name and balance in three different variables and display their value on the screen as given:
"My name is Amit Kumar bearing account number 123456
having balance 7654.98"

Answer:

```java
2 public class QuestionSix {
3
4      public static void main(String[] args) {
5          // TODO Auto-generated method stub
6          String var1="Amit Kumar";
7          long var2=123456;
8          double var3=7654.98;
9          System.out.print("\"My name is "+var1+" bearing account number "+var2+" having balance "+var3+"\"");
10     }
11
12 }
```

Question-7:
Write a java program to exchange the values of two variables of integer type X and Y using third temporary variable Z

Answer:

```
 3 public class QuestionSeven {
 4
 5●     public static void main(String[] args) {
 6             // TODO Auto-generated method stub
 7             int x=12345;
 8             int y=67891;
 9             int z=x;
10             x=y;
11             y=z;
12             System.out.println("x = "+x);
13             System.out.println("y = "+y);
14     }
15
16 }
```

Question-8:
Write a java program to exchange the values of two variables of integer type X and Y without using third temporary variable.

Answer:

```
 3 public class QuestionEight {
 4
 5●     public static void main(String[] args) {
 6             // TODO Auto-generated method stub
 7             int x=2;
 8             int y=3;
 9             y=x+y;
10             x=y-x;
11             y=y-x;
12             System.out.println("x = "+x);
13             System.out.println("y = "+y);
14     }
15
16 }
```

Question-9:
What do each of the following print?

a)System.out.println(5);
b)System.out.println((float)25/6);
c)System.out.println(5+'6');
d)System.out.println(5+7+'9');
e)System.out.println("92"+7+5);
f)System.out.println(2+"9");

Answer:
   a) 5
   b) 4.1666665
   c) 59
   d) 69
   e) 9275
   f) 29

Question-10:
Assume a string variable ruler1 contains "1" initially i.e. String ruler1="1" Write a java
program to print the following output using string concatenation. (You can take extra string
variables)
1
1 2 1
1 2 1 3 1 2 1
1 2 1 3 1 2 1 4 1 2 1 3 1 2 1

Answer:

```
10 public class QuestionTen {
11
12●    public static void main(String[] args) {
13            // TODO Auto-generated method stub
14            String ruler1="1 ";
15            String x="2 ";
16            String y="3 ";
17            String z="4 ";
18            System.out.println(ruler1);
19            System.out.println(ruler1+x+ruler1);
20            System.out.println(ruler1+x+ruler1+y+ruler1+x+ruler1);
21            System.out.println(ruler1+x+ruler1+y+ruler1+x+ruler1+z+ruler1+x+ruler1+y+ruler1+x+ruler1);
22    }
23
24 }
```

HOME ASSIGNMENT

Question-1:
What do each of the following print?

a)System.out.println(2 + "bc");
b)System.out.println(2 + 3 + "bc");
c)System.out.println((2+3) + "bc");
d)System.out.println("bc" + (2+3));
e)System.out.println("bc" + 2 + 3);

Answer:
   a) **2bc**
   b) **5bc**
   c) **5bc**
   d) **bc5**
   e) **bc23**

Question-2:
What do each of the following print?

a)System.out.println('b');
b)System.out.println('b' + 'c');
c)System.out.println((char) ('a' + 4));

Answer:
   a) **b**
   b) **197**
   c) **e**

Question-3:
Suppose that a variable a is declared as int a = 2147483647 (or equivalently,
Integer.MAX_VALUE). What do each of the following print?
a)System.out.println(a);
b)System.out.println(a+1);
c)System.out.println(2-a);
d)System.out.println(-2-a)
e)System.out.println(2*a);
f)System.out.println(4*a);

Answer:
  a) **2147483647**
  b) **-2147483648**
  c) **-2147483645**
  d) **2147483647**
  e) **-2**
  f) **-4**

Question-4:

Suppose that a variable a is declared as double a = 3.14159. What do each of the following print?
a)System.out.println(a);
b)System.out.println(a+1);
c)System.out.println(8/(int) a);
d)System.out.println(8/a);
e)System.out.println((int) (8/a));

Answer:
  a) **3.14159**
  b) **4.14159**
  c) **2**
  d) **2.5464812403910124**
  e) **2**

Question-5:

Write a java program to exchange the value of 4 variables W,G,K,A such that the value of W will move to A, A to K, K to G and finally G to W. Exchange using with and without using extra variables

Answer1:

```java
7 public class HWFive {
8
9     public static void main(String[] args) {
10        // TODO Auto-generated method stub
11        int W=1;
12        int G=2;
13        int K=3;
14        int A=4;
15        int M=W;
16        W=G;
17        G=K;
18        K=A;
19        A=M;
20        System.out.println(W);
21        System.out.println(G);
22        System.out.println(K);
23        System.out.println(A);
24    }
25
26 }
```

Answer2:

```java
    public static void main(String[] args) {
        // TODO Auto-generated method stub
        int W = 1;
        int G = 2;
        int K = 3;
        int A = 4;

        // swapping W and G variables
        W = W + G;
        G = W - G;
        W = W - G;

        // swapping G and K variables
        G = G + K;
        K = G - K;
        G = G - K;

        // swapping K and A variables
        K = K + A;
        A = K - A;
        K = K - A;

        // printing results
        System.out.println("values after swapping are : ");
        System.out.println("W = " + W);
        System.out.println("G = " + G);
        System.out.println("K = " + K);
        System.out.println("A = " + A);

    }

}
```

****