INTE 12213– Object Oriented Programming

Lab Exercises 01

You are given the following tasks. Perform all of them and observe the compiler and run time system responses along with the changes in your working directory.

You have to use a text editor and the terminal in order to complete the below tasks and you are not permitted to use an IDE.

Prepare a report with the experiment, your observations on each task and conclusions. Submit the files by 11.59 pm on the lab session day to the CAL.

No marks will be given to any late submissions.

# Lab01\_Task01

Enter the following Java programming code using text editor and save it as “Task1.java”.

class Task1{ }

To compile the source code: give the following command at the terminal

Your\_Working\_Directory$ javac name of the class with .java extension

/Documents/OOP2020\_Practicals/Lab1$ javac Task1.java

1. What are the observations at the terminal?
2. What are the observations at your working directory?

To run the program: give the following command at the terminal.

Your\_Working\_Directory$ java name of the class

/Documents/OOP2020\_Practicals/Lab1$ java Task1

1. What are the observations at the terminal?
2. What are the observations at your working directory?
3. What are your conclusions on Lab01\_Task 01?

# Lab01\_Task02

Enter the following Java programming code using text editor and save it as “Task2.java”.

class Task2{ }

To compile the source code: give the following command at the terminal.

Your\_Working\_Directory$ javac name of the class with .java extension

/Documents/OOP2020\_Practicals/Lab1$ javac Task2.java

1. What are the observations at the terminal?
2. What are the observations at your working directory?

To run the program: give the following command at the terminal.

Your\_Working\_Directory$ java name of the class

/Documents/OOP2020\_Practicals/Lab1$ java Task2

1. What are the observations at the terminal?
2. What are the observations at your working directory?
3. What are your conclusions on Lab01\_Task 02?

# Lab01\_Task03

Change the Task1 class source code as below.

Class Task1{ }

To compile the source code: give the following command at the terminal.

Your\_Working\_Directory$ javac name of the class with .java extension

/Documents/OOP2020\_Practicals/Lab1$ javac Task1.java

1. What are the observations at the terminal?
2. What are the observations at your working directory?

To run the program: give the following command at the terminal.

Your\_Working\_Directory$ java name of the class

/Documents/OOP2020\_Practicals/Lab1$ java Task1

1. What are the observations at the terminal?
2. What are the observations at your working directory?
3. What are your conclusions on Lab01\_Task 03?

# Lab01\_Task04

Enter the following Java programming code using text editor and save it as “Task4.java”.

class Task4{

public static void main (String[] args){

}

}

To compile the source code: give the following command at the terminal.

Your\_Working\_Directory$ javac name of the class with .java extension

/Documents/OOP2020\_Practicals/Lab1$ javac Task4.java

1. What are the observations at the terminal?
2. What are the observations at your working directory?

To run the program: give the following command at the terminal.

Your\_Working\_Directory$ java name of the class

/Documents/OOP2020\_Practicals/Lab1$ java Task4

1. What are the observations at the terminal?
2. What are the observations at your working directory?
3. What are your conclusions on Lab01\_Task 04?

# Lab01\_Task05

Change the source code of Task 04 as below.

class Task4{

public static void main (String[] args){

System.out.println(“Hello MIT”);

}

}

To compile the source code: give the following command at the terminal.

Your\_Working\_Directory$ javac name of the class with .java extension

/Documents/OOP2020\_Practicals/Lab1$ javac Task4.java

1. What are the observations at the terminal?
2. What are the observations at your working directory?

To run the program: give the following command at the terminal.

Your\_Working\_Directory$ java name of the class

/Documents/OOP2020\_Practicals/Lab1$ java Task4

1. What are the observations at the terminal?
2. What are the observations at your working directory?
3. What are your conclusions on Lab01\_Task 05?

# Lab01\_Task06

Change the source code of Task 04 as below.

class Task4{

public static void main (String[] args){

System.out.print(“Hello MIT”);

System.out.println(“Hello DIM”);

}

}

To compile the source code: give the following command at the terminal.

Your\_Working\_Directory$ javac name of the class with .java extension

/Documents/OOP2020\_Practicals/Lab1$ javac Task4.java

1. What are the observations at the terminal?
2. What are the observations at your working directory?

To run the program: give the following command at the terminal.

Your\_Working\_Directory$ java name of the class

/Documents/OOP2020\_Practicals/Lab1$ java Task4

1. What are the observations at the terminal?
2. What are the observations at your working directory?
3. What are your conclusions on Lab01\_Task 06?

# Lab01\_Task07

Enter the following Java programming code using text editor and save it as “Task7.java”.

class Task7{

public static void main (String[] args){

System.out.println(args.length);

for (String s: args){

System.out.println(s);

}

}

}

To compile the source code: give the following command at the terminal.

Your\_Working\_Directory$ javac name of the class with .java extension

/Documents/OOP2020\_Practicals/Lab1$ javac Task7.java

1. What are the observations at the terminal?
2. What are the observations at your working directory?

To run the program: give the following command at the terminal.

Your\_Working\_Directory$ java name of the class

/Documents/OOP2020\_Practicals/Lab1$ java Task7

1. What are the observations at the terminal?
2. What are the observations at your working directory?

Re-run the program by giving the following command at the terminal.

Your\_Working\_Directory$ java name of the class with a set of strings

/Documents/OOP2020\_Practicals/Lab1$ java Task7 Hello MIT

1. What are the observations at the terminal?
2. What are the observations at your working directory?

Re-run the program by giving the following command at the terminal.

Your\_Working\_Directory$ java name of the class with a set of strings

/Documents/OOP2020\_Practicals/Lab1$ java Task7 “Hello MIT”

1. What are the observations at the terminal?
2. What are the observations at your working directory?
3. What are your conclusions on Lab01\_Task 07?

# Lab01\_Task\_08

Do some experiments and identify at least three things which can be changed in the given main method in Task8 class.

class Task8 {

public static void main (String args[]) {

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

}

}

# Lab01\_Task\_09

Use escape characters in your program and identify the purpose of each. Write down the purpose of each escape character based on your experience.

Enter the following Java programming code using text editor and save it as “Task9.java”.

class Task9 {

public static void main(String args[]) {

System.out.println(“UOK, \n BSc in MIT");

System.out.println("Whatever you are, \n be a good one.");

}

}

Continue the experiments replacing \n with \t, \b, \r, \f, \’, \”, \\

# Lab01\_Task\_10

Use printf in your program and identify the purpose of it. Write down the purpose printf and %s based on your experience.

Enter the following Java programming code using text editor and save it as “Task10.java”.

class Task10 {

public static void main(String args[]) {

System.out.printf(“%s\n %s\n “, “UOK”, “ BSc in MIT");

}

}

# Lab01\_Task\_11

Enter the following Java programming code using text editor and save it as “Task11.java”. Explain how the assignment operator works and purpose of any other symbols used in the program.

/\*\* This program shows how the assignment operator works. \*/

class Task11 {

public static void main(String args[]) {

int x = 10;

System.out.println("\n X (Initial value) = "+x);

x += 25;

System.out.println("X (After x += 25) = "+ x);

}

}

# Lab01\_Task\_12

Enter the following Java programming code using text editor and save it as “Task12.java”. Explain what you learn when developing the task.

//This program shows how the assignment operators work.

class Task12 {

public static void main(String args[]) {

int x = 10;

System.out.println("\nX (Initial value) = "+x);

x -= 5;

// x = x - 5;

System.out.println("X (After x -= 5) = "+ x);

x \*= 5; // x = x \* 5;

System.out.println("X (After x \*= 5) = "+ x);

x /= 5; // x = x / 5;

System.out.println("X (After x /= 5) = "+ x);

x %= 5; // x = x % 5;

System.out.println("X (After x %= 5) = "+ x);

}

}

# Lab01\_Task\_13

Enter the following Java programming code using text editor and save it as “Task13.java”. Explain what you learn when developing the task.

//This program shows how the basic arithmetic operators work for integer.

class Task13 {

public static void main(String args[]) {

int x, y;

x= 1; y =2;

System.out.println("\nAddition (+) : "+ x + " + "+y + " = "+ (x + y));

System.out.println("Subtraction (-) : "+ x + " - "+y + " = "+ (x - y));

System.out.println("Unary (-) : - "+y + " = "+ -y);

System.out.println("Multiplication (\*) : "+ x + " \* "+y + " = "+ (x \* y));

System.out.println("Division (/) : "+ x + " / "+y + " = "+ (x / y));

}

}

# Lab01\_Task\_14

Enter the following Java programming code using text editor and save it as “Task14.java”. Explain what you learn when developing the task.

//This program shows how to use boolean type variables.

class Task14 {

public static void main (String argv[]) {

int x, y;

boolean Boolean\_variable;

Boolean\_variable = true;

System.out.println("Boolean value = "+ Boolean\_variable);

Boolean\_variable = false;

System.out.println("Boolean value = "+ Boolean\_variable);

x = y = 4;

Boolean\_variable = (x != y);

System.out.println("Boolean value = "+ Boolean\_variable+"(x = "+x+", y = "+y+")");

Boolean\_variable = (x == y);

System.out.println("Boolean value = "+ Boolean\_variable+"(x = "+x+", y = "+y+")");

}

}

# Lab01\_Task\_15

Enter the following Java programming code using text editor and save it as “Task15.java”. Explain what you learn when developing the tasks.

//This program shows how the Boolean logical operators work.

class Task15{

public static void main(String argv[]) {

boolean a = true;

boolean b = false;

boolean c = a | b;

boolean d = a & b;

boolean e = a ^ b;

System.out.println(" a = "+a);

System.out.println(" b = "+b);

System.out.println("a | b = "+c);

System.out.println("a & b = "+d);

System.out.println("a ^ b = "+e);

}

}