**IT0206 –Programming in Java LAB**

**Tutorial series 1**

**Tutorial\_Week3:**

**Part I**

**Time duration: 1 hr**

1. Evaluate the following expression without running the code. For each of the following expressions, indicate the type of the expression and the value returned, or, if the evaluation would lead to an error, write 'NoneType' and write the word 'error' as the value returned.

**1)** 3 + 5.0 **2)** 5/2 **3)** 5/2 == 5/2.0 **4)** 5/2.0 **5)** int(2.6) **6)** round(2.6)**7)** 5\*2 == 5.0 \* 2.0 **8)** 2.0 + 5.0

1. What does +=, -=, \*=, /= stand for?
2. Convert the following pseudo codes to java program. Try to answer the questions without running the code. Check your answers, then run the code for the ones you get wrong.
   * + 1. num = 5

if num > 2{

print num

num -= 1}

print num

2. num = 0

while num <= 5{

print num

num += 1}

print "Outside of loop"

print num

3.num = 100

while not False{

if num < 0:

break}

print num

1. Convert the following code to code that uses 1.for 2.while 3.do..while and also implement the same to print in reverse.

System.out.println(“2”);

System.out.println(“4”);

System.out.println(“6”);

System.out.println(“8”);

System.out.println(“10”);

System.out.println(“GoodBye”);

1. Write a java code with while loop that sums the values 1 through “end”, inclusive. “end” is a variable that we define for you. So, for example, if we define end to be 6, your code should print out the result:21 which is 1 + 2 + 3 + 4 + 5 + 6.
2. Write java code(s) to achieve the below output(s).Hint:Use for loop and pseudo codes are given to help you..But any other alternative coding which achieves the same output is accepted.
   * 1. a. 0, 1, 2, 3, 4, 4

Pseudo code:num = 10

for num in range(5):

print num

print num

* + 1. b. 0, 1, 2, 3, 4

Pseudo code:divisor = 2

for num in range(0, 10, 2):

print num/divisor

* + 1. c.0, Foo!, 4, 8, 12, 16, Foo!

Pseudo code:for variable in range(20):

if variable % 4 == 0:

print variable

if variable % 16 == 0:

print 'Foo!'

**Tutorial\_Week3:**

**Part II**

**Time duration: 2 hrs**

1. Apply an Object oriented paradigm **(hint:classes)** using java to develop a standalone application without a method to print "I am enjoying my program in JAVA and I swear I will put all my sincere efforts to grow each day technically"
2. Write a simple java program to find the greatest of 3 numbers using ***if..else*** statement.
3. Write a simple java program to find the given number is palindrome or not

Eg. 1234, 2345 – not palindrome; 12321, 44444 – are palindrome

1. Apply an Object oriented paradigm using java to develop a stand alone application for Number conversion(all) in java.
2. Write a simple java program to find the sum, product, difference and quotient of any 2 numbers using ***switch-case*** statement by getting the choice from the user. Demonstrate type casting for finding the quotient
3. Write a simple java program to print the following pattern (***for loop***)

\*

\* \*

\* \*

\* \*

\*

1. Write a simple java program to print the following (***while loop***)

N N\*N N!

1 1 1

2 4 2

3 9 6 etc

1. Write a simple java program to compute the value of ex by using the formula**(Nested Looping)**

ex = 1+ x / 1! + x2/2!+ x3/3!+…… xn/n!

1. Write a simple java program to demonstrate ***labeled break and labeled continue*** statement in **two** different/separate program.
2. Verify all codes of part I in system.

**Homework**

**Project Question:**

**Due: Should be completed before Next week Tutorial class**

1. In this problem, you'll create a program that guesses a secret number!

The program works as follows: you (the user) thinks of an integer between 0 (inclusive) and 100 (not inclusive). The computer makes guesses, and you give it input - is its guess too high or too low? Using Bisection search , the computer will guess the user's secret number!

Here is a transcript of an example session:

Please think of a number between 0 and 100!

Is your secret number 50?

Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is too low. Enter 'c' to indicate I guessed correctly. l

Is your secret number 75?

Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is too low. Enter 'c' to indicate I guessed correctly. l

Is your secret number 87?

Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is too low. Enter 'c' to indicate I guessed correctly. h

Is your secret number 81?

Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is too low. Enter 'c' to indicate I guessed correctly. l

Is your secret number 84?

Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is too low. Enter 'c' to indicate I guessed correctly. h

Is your secret number 82?

Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is too low. Enter 'c' to indicate I guessed correctly. l

Is your secret number 83?

Enter 'h' to indicate the guess is too high. Enter 'l' to indicate the guess is too low. Enter 'c' to indicate I guessed correctly. c

Game over. Your secret number was: 83

Your program should use bisection search. So think carefully what that means. What will the first guess always be? How should you calculate subsequent guesses? Hint: Your initial endpoints should be 0 and 100.