North South University

Department of Electrical and Computer Engineering

CSE 215L: Programming Language II Lab

Lab – 4: Loops, Character & Strings

Learning Objectives:

- to learn about loops in detail (break, continue)
- to learn about character & string and their different methods

Ex-1: loop with break

```
public class Test {
  public static void main(String[] args) {

   for (int i = 1; i <= 10; ++i) {
     // if the value of i is 5, the loop terminates
     if (i == 5) {
       break;
     }
    System.out.println(i);
  }
 }
}
```

Ex-2: loop with continue

```
public class Test {
  public static void main(String[] args) {

    for (int i = 1; i <= 10; ++i) {    // if the value of i is the factor of 5, the loop iteration skips
      if (i % 5 == 0) {
        continue;
      }
     System.out.println(i);
  }
 }
}
```

Ex-3: Character Example

```
import java.util.Scanner;

public class Test {
  public static void main (String[]args)  {
    Scanner input = new Scanner (System.in);

    System.out.print ("Input a character: ");
    char ch = input.next ().charAt (0);
    System.out.println ("You have entered " + ch);

    if (ch >= 'A' && ch <= 'Z'){
     System.out.println(ch + " is an uppercase letter");
    } else if (ch >= 'a' && ch <= 'z'){
     System.out.println(ch + " is a lowercase letter");
    } else if (ch >= '0' && ch <= '9') {
     System.out.println(ch + " is a numeric character");
    } else {
     System.out.println(ch + " is a random character");
   }
  }
}
```

Ex-4: String Example

```
import java.util.Scanner;

public class Test {
  public static void main(String[] args) {
    Scanner input = new Scanner(System.in);
     System.out.print("Enter 3 words separated by spaces: ");
    String s1 = input.next();
    String s2 = input.next();
    String s3 = input.next();
    System.out.println("s1 is " + s1);
    System.out.println("s2 is " + s2);
    System.out.println("s3 is " + s3);

    System.out.println("Enter a line: ");
    String s4 = input.nextLine();
    System.out.println("The line entered is " + s4);
 }
}
```

Methods for Character	Methods for String
isDigit(ch) isLetter(ch) isLetterOfDigit(ch) isLowerCase(ch) isUpperCase(ch) toLowerCase(ch) toUpperCase(ch)	length() charAt(index) concat(s1) toUpperCase() toLowerCase() trim() equals(s1) equalsIgnoreCase(s1) compareTo(s1) compareToIgnoreCase(s1) startsWith(prefix) endsWith(suffix) contains(s1) substring(beginIndex) substring(beginIndex, endIndex) // read text for more methods

Lab Task:

1. Print the patterns:

(a)

```
*
* *
* * *
* * * *
* * * * *
```

(b)

```
* * * * *
* * * *
* * *
* *
*
```

(c)

```
    *
   ***
  *****
 *******
*********
```

2. Write a program that reads two integers x and p and print the value of x ^ p [Don't use Math.pow(a,b)]

3. Write a program that reads two integers a and b from the user and print the multiplication table from a to b in the following format:

Multiplication Table for [n]
1 x n = n
2 x n = 2n
……..
10 x n = 10n

4. (a) Write a program that receives an ASCII code (an integer between 0 and 127) and displays its character.
   (b) Write a program that receives a character and displays its Unicode.

5. Write a program that prompts the user to enter a letter and check whether the letter is a vowel or consonant. [Suppose, you will enter only alphabet letters]