

North South University

Department of Electrical and Computer Engineering

CSE 215L: Programming Language II Lab

Lab – 3: Conditional statements, Loops

Learning Objectives:

- to learn how to use conditional statements (nested if-else, ternary operators, switch)
- to learn about different types of loops (for, while, do-while)

Ex-1: Nested if-else with with user input	Ex-2: Conditional / Ternary Operator (?:)
<pre>import java.util.Scanner; public class HelloWorld { public static void main(String[] args) { Scanner input = new Scanner(System.in); System.out.print("Enter a, b, c: "); int a = input.nextInt(); int b = input.nextInt(); int c = input.nextInt(); if(a > b) { if(a > c) { System.out.println("a: " + a + " is greatest"); }else { System.out.println("c: " + c + " is greatest"); } }else { if(b > c) { System.out.println("b: " + b + " is greatest"); }else { System.out.println("c: " + c + " is greatest"); } } } }</pre>	<pre>import java.util.Scanner; public class HelloWorld { public static void main(String[] args) { Scanner input = new Scanner(System.in); System.out.print("Enter x, y, z: "); int x = input.nextInt(); int y = input.nextInt(); int z = input.nextInt(); int maxNum = (x > y) ? (x > z ? x : z) : (y > z ? y : z); System.out.println("Maximum no: " + maxNum); } }</pre>
Ex-3: Switch statement with user input	Ex-4: [1+2+3+.....+n] with different loops
<pre>import java.util.Scanner; public class HelloWorld { public static void main(String[] args) { Scanner input = new Scanner(System.in); System.out.print("Enter your day no: "); int day = input.nextInt();</pre>	<pre>import java.util.Scanner; public class HelloWorld { public static void main(String[] args) { Scanner input = new Scanner(System.in); System.out.print("Enter n: "); int n = input.nextInt();</pre>

```

switch (day) {
    case 1: System.out.println("Monday"); break;
    case 2: System.out.println("Tuesday"); break;
    case 3: System.out.println("Wednesday"); break;
    case 4: System.out.println("Thursday"); break;
    case 5: System.out.println("Friday"); break;
    case 6: System.out.println("Saturday"); break;
    case 7: System.out.println("Sunday"); break;
    default: System.out.println("Invalid day"); break;
}
}
}

```

```

// with for loop
int sum = 0;
for (int i = 1; i <= n; i++){
    sum += i;
}

// with while Loop
int sum = 0; int i = 1;
while (i <= n){
    sum += i;
    i++;
}

// with do-while Loop
int sum = 0; int i = 1;
do {
    sum += i;
    i++;
} while (i <= n);
System.out.println("Sum: " + sum);
}
}

```

Lab Task:

1. Write a program that generates 3 random numbers and print all 3 numbers and the smallest one.

[Hint: Math.random() returns a random double value d such that $0.0 \leq d < 1.0$ and

Example code, `int num1 = (int)(Math.random() * 10)`]

2. Write a program to find out the Chinese Zodiac sign for a given year. The Chinese Zodiac is based on a twelve-year cycle, with each year represented by an animal: monkey, rooster, dog, pig, rat, ox, tiger, rabbit, dragon, snake, horse, or sheep. [Hint: `year % 12` determines the Zodiac sign and use switch statement]

3. Write a program that reads an integer from the user and determines if it is prime or not. [Hint: A number is prime if it is divisible by 1 and itself only, i.e. 2, 3, 11, 37 etc.]

4. Write a program that reads an integer n from the user and print its multiplication table in the following format:

1 x n = n

2 x n = 2n

.....

10 x n = 10n

5. Write a program that prompts the user to enter a three-digit integer and determines if it is a palindrome number. [Hint: A number is palindrome if it reads the same from right to left and from left to right.]