

03603111: Programming Fundamentals I



Conditional Loops

Lab
5

Objective:

- Understand and use if-else and nested if
- Understand and use different repetition structures (while and for)
- Understand and use nested for

Exercise 1: Write a program for calculating area of a geometric shape. The user can enter 'r', 'c', or 't' to select a shape (rectangle, circle, or triangle, respectively). For calculating area of a circle, use $\pi = 3.1416$.

```
[r] Rectangle
[c] Circle
[t] Triangle
[x] Exit

Select r/c/t/x: r
Enter height: 8
Enter width: 6.5
Area of this rectangle is 52.00

Select r/c/t/x: c
Enter radius: 10.3
Area of this circle is 333.29

Select r/c/t/x: t
Enter height: 10
Enter base: 2
Area of this triangle is 10.00

Select r/c/t/x: z
Invalid command!

Select r/c/t/x: x
Bye!
```

Exercise 2: Write a program to check the prime number. Program output should look like the following. (use for loop)

```
Enter an integer: 5
```

```
5 is a prime number
```

```
Enter an integer: 4
```

```
4 is not a prime number
```

Exercise 3: Write a program that computes the factorial of n ($n!$), where n is a number specified by user. (use for loop)

```
Enter a number (n): 5
```

```
5! is 120.
```

Exercise 4. Write a program that reads in 5 integer numbers and prints out the sum of the numbers. (use while loop)

```
Enter an integer #1: 5
```

```
Enter an integer #2: 9
```

```
Enter an integer #3: 11
```

```
Enter an integer #4: 2
```

```
Enter an integer #5: -5
```

```
The summation is 22.
```

Exercise 5. Write a program that prints out the list of even numbers (inclusively) between two numbers specified by user.

```
Enter two numbers: 11 32
```

```
12 14 16 18 20 22 24 26 28 30 32
```