Department of Computer Engineering

CENG103 – Computer Programming 1

FALL 2017 - 2018

Lab Guide #3 – Week 3

OBJECTIVE : To get acquainted with Microsoft Visual Studio 2017 You will learn how to: • Data Types, arithmetic expressions, Built-in functions, Relational and logical operators, if statement, compound statement
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Q1. Calculate the sum, difference, and product of two given numbers. (Use integer numbers)

Example Run:

```
Enter first number : 9
Enter second number : 5
The sum of the numbers : 14
The difference of the numbers : 4
The product of the numbers : 45
```

Project_name: LabGuide3_1
File_name: Q1.cpp

Q2. Correct the errors of the C program given below, and then execute it to see the result.

```
include (stdio.h)

int
main(void)
{
    /variable declaration
    double num1,2ndnum;
    character ch1,ch2

    printf("Enter two double numbers:");
    scanf("%c %c",num1,2ndnum);

    printf(Enter two characters);
    printf("%d\t%d",&ch1,&ch2);

    avg = num1 - 2ndnum \ 2;

    /* displaying the result /
    printf("Average is:",&avg);

    printf("Two characters are %d %d",&ch1,&ch2);
}
```

Example Run:

```
Enter two double numbers: 12.1 17.3
Enter two characters: a x
Average is 14.70
Two characters are a x
```

Project_name: LabGuide3_2
File_name: Q2.cpp

Q3. Write a C program that gets a **decimal number** (**2 digits** for **integral** part and **5 digits** for **fractional** part, for example: **45.94239**) from the user and displays the value in the formats given below.

Example Run:

```
Enter a number (2 digits integer and 5 digits fractional):58.49632
58.49632
   58.50
58
58.4963200
         58.496
 58.49632000
  58.50
    58
     58.5
  58.4963200
```

Project_name: LabGuide3_3
File_name: Q3.cpp

Q4. Write a C program that gets three integer numbers (**x, y, z**) from the user as input data, and calculates the result of the formula below, and displays the result on the screen.

$$\left| \left(\frac{x^3}{\sqrt[5]{y^4}} + \sqrt{\frac{|x+z|}{\sqrt{y}}} \right)^3 \right| = ?$$

Example Run:

```
Enter a value for x: -5
Enter a value for y: 1
Enter a value for z: 3
The result is 1887580.9
```

Project_name: LabGuide3_4
File_name: Q4.cpp

Q5. Write a C program to calculate profit or loss on a transaction. See below example run:

Example Run#1:

```
Enter the value (amount) of the cost price: 500
Enter the value (amount) of the selling price: 700
The status is: Profit
Output amount: 200
```

Example Run#2:

```
Enter the value (amount) of the cost price: 1200
Enter the value (amount) of the selling price: 900
The status is: Loss
Output amount: 300
```

Project_name: LabGuide3_5
File_name: Q5.cpp

Q6. Write a C program that gets a character from the user. If character is an uppercase letter program displays the message "IT IS AN UPPERCASE LETTER",
if character is a lowercase letter displays the message "IT IS A LOWERCASE LETTER", otherwise displays "IT IS NOT A LETTER" message.

Example Run1:

```
Enter a character : s
IT IS A LOWERCASE LETTER
```

Example Run2:

```
Enter a character : W
IT IS AN UPPERCASE LETTER
```

Example Run3:

```
Enter a character : ;
IT IS NOT A LETTER
```

Project_name: LabGuide3_6
File_name: Q6.cpp