Section 17

PDS Lab **Assignment - 1** **7th December 2020**

Instructions:

Create a directory named as <Roll_no>_A1, where <Roll_no> is your roll number.
Give the name of the programs as <p>_1.c, <p>_2.c, .. etc. for the problem 1, 2, ... respectively. Here <p> implies the part number.
Zip the entire directory <Roll_no>_A1.
You should upload your zipped file to the Moodle course web page.

Part-A

1. Create a file <p>_1.c using **Code::Blocks IDE**. This program will print a message “Welcome to C Programming”. Compile and run the program.
2. Create a file and write your address details in a file name myAddress.txt.
3. Create a directory say test under the directory <Roll_no>_A1.
4. Copy the file myAddress.txt to the directory test. Rename the directory test as PDSLab-17.
5. Delete the directory PDSLab-17.

Part-B

Use the **Code::Blocks IDE** to write the following programs. Compile the following programs and run the programs.

Program 1

```
// Simple C Program to print a line.
#include <stdio.h>
```

```
int main()
{
printf(“This is a simple C program”);
getch();
return 0;
}
```

Program 2

```
// Addition, Subtraction in C
#include <stdio.h>
int main()
{
int x = 10, y = 3;
int a, b;
a = x + y;
b = x - y;
printf(“x + y = %d\n”, a);
printf(“x - y = %d\n”, b);
getch();
return 0;
}
```

Program 3

```
// Evaluating polynomial in C
#include <stdio.h>
int main()
{
```

```
int x=3, y;
y= x * x + 4*x +5
printf (“ value of x = %d\n”, x);
printf (“ value of polynomial in x = %d\n”, y);
getch();
return 0;
}
```

Program 4

```
// C Program to take the age from user and print it
#include <stdio.h>
#include <stdlib.h>
int main(int argc, char *argv[ ])
{
int age;
printf("Enter your age:");
scanf("%d",&age);
printf("You are %2d years old.\n",age);
getch();
return 0;
}
```

Program 5

```
/* C program to take two numbers from user and print their product */
#include <stdio.h>
int main()
{
```

```
int num1, num2, product;
printf("Enter any two numbers : \n");
scanf("%d%d", &num1, &num2);
product = num1 * num2;
printf("Product of %d and %d = %d",num1, num2, product);
return 0;
}
```

Program 6

```
/* A program to read a set of characters and print the same. */
#include <stdio.h>
int main()
{
int c;
c = getchar();
while (c != EOF)
{
putchar(c);
c = getchar();
}
}
```

Part-C

1. Enter Gautam Gambhir's basic salary as an input through the keyboard. His dearness allowance is 40% of basic salary, and house rent allowance is 20% of basic salary. Write a program to calculate his gross salary.

2. Enter the temperature of your city in Fahrenheit as an input through the keyboard. Write a program to convert this temperature to Celcius and Kelvin units.

3. Write a C program to find the average of 5 numbers. Your program needs to accept these 5 numbers from the keyboard, and print the 5 numbers and their average as the outputs.

4. Take the length & breadth of a rectangle and radius of a circle as the inputs. Write a program to calculate the area & perimeter of the rectangle, and the area & circumference of the circle.

5. A four-digit number is given as an input. Write a program to calculate the sum of its digits. (Hint: Use the modulus operator '%')

6. A SBI Bank cashier has currency notes of denominations 10, 50, and 100. If the amount to be withdrawn is the input given by the keyboard in hundreds, find the total number of currency notes of each denomination the cashier will have to give to the withdrawer.

7. If the total selling price of 18 items and the total profit earned on them is inputted from the keyboard, write a program to find the cost price of one item.

8. If a four-digit number is input through the keyboard, write a program to obtain the sum of the first and last digit of this number.

9. Write a C program to swap two given numbers. You need to assign the input numbers (from the keyboard) to two variables “a” and “b”. You need to perform the swapping of the values associated to the variables and print the variables before and after swapping.

10. Write a C program to compute the sum of the squares of the first “N” natural numbers. You need to provide the value of N through the keyboard and print the output as the sum of the squares of the N natural numbers.

11. Write a C program to compute the distance between two given points and find the slope of the line joining these two points. Take (x,y) coordinates of the two points from the keyboard and print the length of the line joining those 2 points and slope of the line.

12. Write a C program to print the given pattern using printf statements.