

Section 16

PDS Lab

Assignment - 1

31.07.2018

Instructions:

Create a sub directory named as Assignment1.

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. For example, Part-A

Store all the programs under this Assignment in the directory Assignment1.

Zip the entire directory Assignment1.

You should upload your zipped file to the Moodle course web page.

Part-A

1. Create a directory with a name say Lab1. In that directory, create a file p1.c, which will print a message “Welcome to C Programming”.
2. Create a file and write your address detail in a file name myAddress.txt in the directory Lab1.
3. Create a sub-directory say test under the directory Lab1 .
4. Copy the file myAddress.txt to directory test. Rename the directory test as PDSLab-16 .
5. Delete the directory PDSLab-16.

Part-B

Use the edit editor to enter the following programs. Compile the following programs and run the executable files.

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
n 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) Write a C program to read your name from the keyboard and print the same with a hello message.
- (2) Write a C program to convert the temperature from Fahrenheit to Celsius. Take the temperature in Fahrenheit as input from the keyboard, and print the temperature in Celsius.
- (3) Write a C program to find the average of the given 3 numbers. Your program need to accept these 3 numbers from key board, and print the 3 numbers and their average as the output.
- (4) 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.
- (5) 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 keyboard and print the output as sum of the squares of the N natural numbers.
- (6) Write a C program to calculate the area of the sphere. Take the radius as input from the keyboard, and print the area of the sphere as output.
- (7) Write a C program to compute the distance between given 2 points and find the slope of the line joining these 2 points. Take (x,y) coordinates of the 2 points from key board and print the length of the line joining those 2 points and slope of the line.
- (8) Write a C program to enter the 2 angles of a triangle and find the 3rd angle.

(9) From the given Cartesian coordinates, calculate the area and perimeter of the following regular geometric shapes.

- (a) Circle with centre (3,1) and cutting the Y-axis at (0,5) and (0, -3)
- (b) Triangle with vertices (-2,3), (-3,-4), (5,1)
- (c) Square with vertices (0,0), (1,1), (2,0), (1,-1)
- (d) Rhombus with vertices (3,5), (7,6), (2,1), (6,2)
- (e) Trapezoid with vertices (-3,3), (1,5), (4,1), (1, -5)

(10) Consider a bank that offers fixed deposit accounts with cumulative (annually) interest on the balance available in the account. Write a C program that reads the amount initially invested (called Principal amount) in an account and interest rate. The program generates the balance available in the account at the end of each year for first five years.

(11) Write a C program to print the given pattern using printf statements.

```

                *
            *   *   *
        *   *   *   *   *
            *   *   *
                *
                    *

```

Submission instruction

Zip your *Lab1* directory. Upload your zip file into the Moodle server.