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PF Lab Assignment

Lab#03

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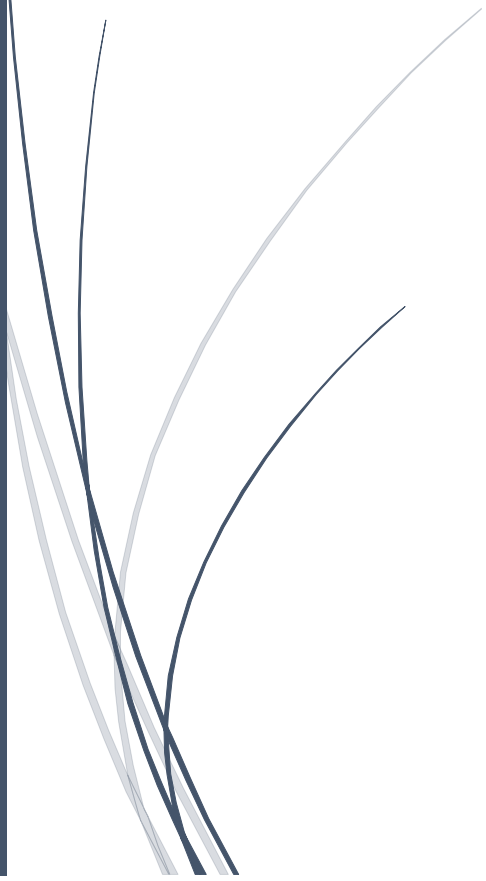


QUESTION#1

Write the datatypes of the following values:

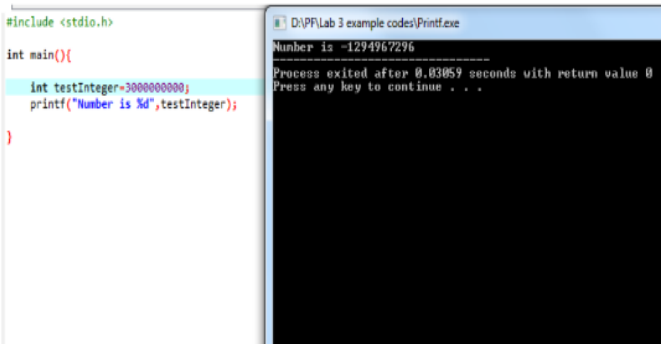
- “Introduction to IDE and basic programing constructs”
- 3x108
- 300000000
- 7.0000000000000

ANSWER:

- “char” Character data type.
- “int” data type.
- “int” data type.
- Double float data type.

QUESTION#2

Explain the output of this C program. Why the wrong value is being displayed in the output?



ANSWER:

Because the given value is greater than 2^32.

QUESTION#3

Write a C program that takes two integer values as input from the user. Then swap the values taken from the user and display the output of the variables.

C program:

```c
#include <stdio.h>
int main()
{
    int x,y;
    printf("Input digit one: ");
    scanf("%d",&x);
    printf("Input digit Two: ");
    scanf("%d",&y);
    x=x+y;
    y=x-y;
    x=x-y;

    printf("%d %d are now swapped",x,y);

}
```

QUESTION#4

A customer asks the IT firm to develop a program in C language, which can take tax rate and salary from the user on runtime and then calculate the tax, the user has to pay and the salary he/she will have after paying the tax. This information is then provided to the user.

C program:

```c
#include <stdio.h>
int main()
{
    float t,s,TS,t1,TT;
    printf("Tax Rate: ");
    scanf("%f",&t);
    printf("Salary: ");
    scanf("%f",&s);

    t1=t/100;
    TT=s*t1;
    TS=s-TT;
    printf("\n%f Tax Deducted",TT);
    printf("\n%f Salary after deduction",TS);

}
```

QUESTION#5

A car traveled for some hours. The time car traveled is taken at run time of the program, and it must not be negative and must be between one to five hours. The car had not traveled same distance in each hour. The distance that the car covered must not be negative. Write a C Program that computes the Average Speed of the Car in miles per hour. Hint: the restrictions can be displayed in the form of message on the window.

C program:

```c
#include<stdio.h>
int main()
{
    float h,d,d1,d2,d3,d4,d5,s;
    printf("Time must in b/w 1 to 5");
    printf("\nTime in Hours: ");
    scanf("%f",&h);
    printf("distance covered in 1st Hour: ");
    scanf("%f",&d1);
    printf("distance covered in 2nd Hour: ");
    scanf("%f",&d2);
    printf("distance covered in 3rd Hour: ");
    scanf("%f",&d3);
    printf("distance covered in 4th Hour: ");
    scanf("%f",&d4);
    printf("distance covered in 5th Hour: ");
    scanf("%f",&d5);


    d=d1+d2+d3+d4+d5;
    s=d/h;
    printf("\n%.1f is the Average Speed",s);


}
```

QUESTION#7

Construct a C program with the flowchart below. The input value of the Principle must be between 100 Rs. To 1,000,000 Rs. The Rate of interest must be between 5% to 10% and Time Period must be between 1 to 10 years. Hint: these restrictions can be displayed in the form of message on the window.

C program:

```c
#include <stdio.h>

int main()
{

    float i,p,r,t,R;
    printf("Principle value: b/w 100 to 1,000,000: ");
    scanf("%f",&p);
    printf("Rate of interest:b/w 5 to 10 : ");
    scanf("%f",&r);
    printf("Time Period:b/w 1 to 10 years: ");
    scanf("%f",&t);

    R=r/100;
    i=p*R*t;
    printf("\n%.2f is Simple iterest",i);

}
```

QUESTION#8

Write a C Program to play beep five times.

C program:

```c
#include<stdio.h>
int main()
{

    printf("\a");
    printf("\a");
    printf("\a");
    printf("\a");
    printf("\a");

}
```

QUESTION#9

Write a C program to print the following shapes using escape sequences. Moreover, you are required to compile and execute these program using CMD.

C program:

```c
#include<stdio.h>
int main()
{
    printf("*");
    printf("\n* * ");
    printf("\n* * *");
    printf("\n* * * *");

}
```

```c
#include<stdio.h>
int main()
{
    printf("*");
    printf("\n* \t* ");
    printf("\n* \t* \t*");
    printf("\n* \t* ");
    printf("\n*");
}
```