C Programming Language

--Basic Programs to Practice—

Day 01

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1.Program to print Hello World!

first.c > main()

```c
// Program to print Hello World!
#include<stdio.h>
void main()
{
    printf("Hello world!");
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Code

```
PS C:\c all progams> cd "c:\c all progams\" ; if ($?) { gcc first.c -o first } ; if ($?) { .\first }
Hello world!
PS C:\c all progams>
```

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2.Program to add two numbers by taking values from user.

add.c > main()

```c
// Program to add two numbers by taking values from the user.
#include<stdio.h>
void main()
{int a,b,sum=0;
 printf("Enter the values of a and b:\n");
 scanf("%d%d",&a,&b);
 sum=a+b;
 printf("Sum=%d",sum);
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Code

```
PS C:\c all progams> cd "c:\c all progams\" ; if ($?) { gcc add.c -o add } ; if ($?) { .\add }
Enter the values of a and b:
10
20
Sum=30
PS C:\c all progams>
```

3.Program to calculate area of circle.

areacircle.c > ...

```c
// Program to calculate area of circle.
#include<stdio.h>
#define PI 3.14
void main()
{ float radius,area;
  printf("Enter the radius of the circle:\n");
  scanf("%f",&radius);
  area=PI*radius*radius;
  printf("Area of circle with radius %f is %f",radius,area);
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
PS C:\c all progams> cd "c:\c all progams\" ; if ($?) { gcc areacircle.c -o areacirc
le } ; if ($?) { .\areacircle }
Enter the radius of the circle:
10.2
Area of circle with radius 10.200000 is 326.685577
PS C:\c all progams>
```

Code

Code

4.Program to calculate area of triangle.

areatrngle.c > ...

```c
// Program to calculate area of triangle.
#include<stdio.h>
void main()
{  float b,h,area;
   printf("Enter base and height of triangle:\n");
   scanf("%f%f",&b,&h);
   area=(b*h)/2;
   printf("Area=%f",area);
}

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Code

```
.\areatrngle }
Enter base and height of triangle:
6
10
Area=30.000000
PS C:\c all progams>
```

5.Program to calculate area of triangle using Heron’s formula.

areatringleherons.c > main()

```c
// Program to calculate area of triangle using Heron's formula
#include<stdio.h>
#include<math.h>
void main()
{
  float a,b,c,s,area;
  printf("Enter the length of three sides of triangle:\n");
  scanf("%f%f%f",&a,&b,&c);
  s=(a+b+c)/2;
  area=sqrt(s*(s-a)*(s-b)*(s-c));
  printf("Area=%f",area);
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
Enter the length of three sides of triangle:
10
10
10
Area=43.301270
PS C:\c all progams>
```

6.Program to calculate distance between two points.

distancebwpnts.c > main()

```c
// Program to calculate distance between two points.
#include<stdio.h>
#include<math.h>
void main()
{
    float x1,x2,y1,y2,distance;
    printf("Enter the co-ordinates of first point(x1,y1):\n");
    scanf("%f%f",&x1,&y1);
    printf("Enter the co-ordinates of second point(x2,y2):\n");
    scanf("%f%f",&x2,&y2);
    distance=sqrt(pow((x2-x1),2)+pow((y2-y1),2));
    printf("The distance between two points is:%f",distance);
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Code

```
Enter the co-ordinates of first point(x1,y1):
10
5
Enter the co-ordinates of second point(x2,y2):
6
3
The distance between two points is:4.472136
PS C:\c all progams>
```

7.Program to swap two numbers using temporary variable.

swaptemp.c > main()

```c
//Program to swap two numbers using temporary variable.
#include<stdio.h>
void main()
{   int a,b,temp;
    a=10,b=5;
    printf("Before swapping values of\n");
    printf("a=%d\tb=%d\n",a,b);
    temp=a;
    a=b;
    b=temp;
    printf("After swapping values of\n");
    printf("a=%d\tb=%d",a,b);
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL Code

```
Before swapping values of
a=10    b=5
After swapping values of
a=5     b=10
PS C:\c all progams>
```

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8.Program to swap two numbers without using temporary variable.

*Method 1

C swapwithouttemp.c > main()

```c
//Program to swap two numbers without using temporary variable.
#include<stdio.h>
void main()
{   int a,b;
    printf("Enter the values for a and b:\n");
    scanf("%d%d",&a,&b);
    printf("Before swapping values of a and b:\n");
    printf("a=%d\tb=%d\n",a,b);
    a=a+b;
    b=a-b;
    a=a-b;
    printf("After swapping values of a and b:\n");
    printf("a=%d\tb=%d",a,b);
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
Enter the values for a and b:
10
20
Before swapping values of a and b:
a=10    b=20
After swapping values of a and b:
a=20    b=10
PS C:\c all progams>
```

*Method 2

C swapwithouttemp.c > main()

```c
//Program to swap two numbers without using temporary variable.
#include<stdio.h>
void main()
{   int a,b;
    printf("Enter the values for a and b:\n");
    scanf("%d%d",&a,&b);
    printf("Before swapping values of a and b:\n");
    printf("a=%d\tb=%d\n",a,b);
    a=a*b;
    b=a/b;
    a=a/b;
    printf("After swapping values of a and b:\n");
    printf("a=%d\tb=%d",a,b);
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
PS C:\c all progams> cd "c:\c all progams\" ; if ($?) { gcc swapwithouttemp.c -o swapwithouttemp } ; if ($?) { .\swapwithoutt
emp }
Enter the values for a and b:
20
10
Before swapping values of a and b:
a=20    b=10
After swapping values of a and b:
a=10    b=20
PS C:\c all progams>
```

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9.Program to convert degrees Fahrenheit into degrees Celsius.

fahrintocelsius.c > main()

```c
// Program to convert degrees fahrenheit into degree celsius.
#include<stdio.h>
void main()
{
    float f,c;
    printf("Enter the temperature in fahrenheit:\n");
    scanf("%f",&f);
    c=((f-32)*(5.0/9.0));
    printf("Temperature in degree celsius :%f",c);
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL Code

```
PS C:\c all progams> cd "c:\c all progams\" ; if ($?) { gcc fahrintocelsius.c -o fahrintocelsius } ;
if ($?) { .\fahrintocelsius }
Enter the temperature in fahrenheit:
99
Temperature in degree celsius :37.222221
PS C:\c all progams>
```

10.Program to print ASCII value of a character.

asci.c > main()

```c
// Program to print ASCII value of a character.
#include<stdio.h>
void main()
{
    char ch;
    printf("Enter any character:");
    scanf("%c",&ch);
    printf("The ascii value of %c is %d",ch,ch);
}
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL Code

```
PS C:\c all progams> cd "c:\c all progams\" ; if ($?) { gcc asci.c -o asci } ; if ($?) { .\asci }
Enter any character:c
The ascii value of c is 99
PS C:\c all progams>
```

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