INTRODUCTION
TO
C PROGRAMMING

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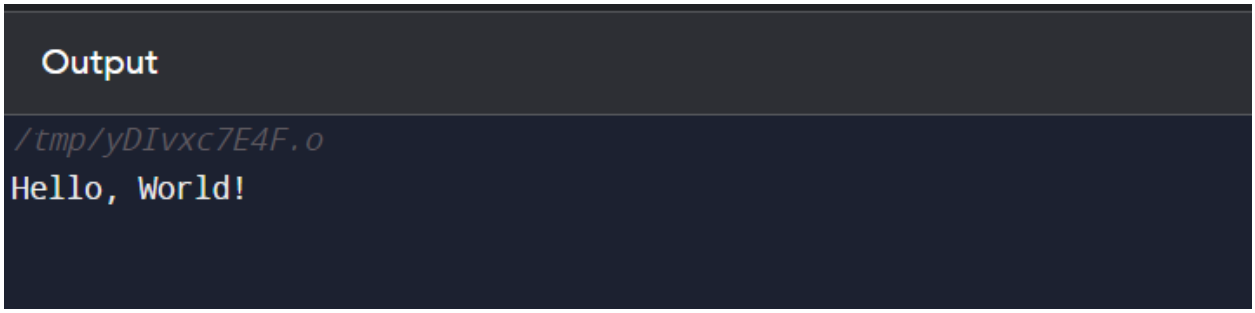
(1) AIM:-

To write a simple program in C which displays "Hello, World!" on the screen

CODE:-

```c
#include <stdio.h>
int main()
{
    printf("Hello, World!");
    return 0;
}
```

OUTPUT SCREEN:-



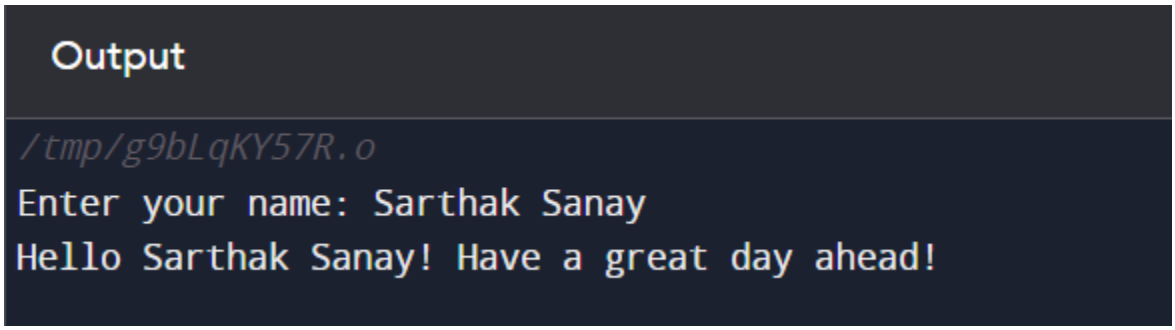
(2) AIM:-

To write a program in C to take the name of the user as input and then display a greeting message.

CODE:-

```c
#include <stdio.h>
int main()
{
    // declaring a variable with space of 100 characters, to store the name entered by the user
    char name[100];
    printf("Enter your name: ");
    scanf("%s", &name); // storing the input from the user
    printf("Hello %s! Have a great day ahead!", name); // printing the greeting message
    return 0;
}
```

OUTPUT SCREEN:-



(3) AIM:-

To explore different data types in C (int, float, char) and write programs to manipulate them.

CODE:-

```
// Program in C to explore different data types in C (int, float, char)
and write programs to manipulate them.

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

    // Exploring and performing operations on the Integer (int) data type.
    int i1 = 400, i2= 100, iRes;
    printf("Performing arithmetical operations on the Integer (int) data
type.\n");

    iRes = i1+i2; // addition
    printf("%d + %d = %d\n", i1, i2, iRes);
    iRes = i1-i2; // subtraction
    printf("%d - %d = %d\n", i1, i2, iRes);
    iRes = i1*i2; // multiplication
    printf("%d x %d = %d\n", i1, i2, iRes);
    iRes = i1/i2; // division
    printf("%d / %d = %d\n\n", i1, i2, iRes);


    // Exploring and performing operations on the Float data type.
    float f1 = 100.45, f2 = 30.2, fRes;
    printf("Performing arithmetic operations on the Float data type.\n");

    fRes = f1+f2; // addition
```

```
    printf("%f + %f = %f\n", f1, f2, fRes);
    fRes = f1-f2; // subtraction
    printf("%f - %f = %f\n", f1, f2, fRes);
    fRes = f1*f2; // multiplication
    printf("%f x %f = %f\n", f1, f2, fRes);
    fRes = f1/f2; // division
    printf("%f / %f = %f\n\n", f1, f2, fRes);


    // Manipulating character (char) data type
    char c1='A', c2='B';
    printf("Concatenating two characters: %c%c\n", c1, c2);
    // Returning ASCII values designated to that character
    printf("ASCII value of %c is: %d\n", c1, c1);
    printf("ASCII value of %c is: %d", c2, c2);
    return 0;
}
```

OUTPUT SCREEN:-

```
Output
/tmp/g9bLqKY57R.o
Performing arithmetical operations on the Integer (int) data type.
400 + 100 = 500
400 - 100 = 300
400 x 100 = 40000
400 / 100 = 4

Performing arithmetic operations on the Float data type.
100.449997 + 30.200001 = 130.649994
100.449997 - 30.200001 = 70.250000
100.449997 x 30.200001 = 3033.590088
100.449997 / 30.200001 = 3.326159

Concatenating twp characters: AB
ASCII value of A is: 65
ASCII value of B is: 66
```

(4) AIM:-

To write a program in C that calculates the area of a rectangle and a circle based on user input.

CODE:-

```
#include <stdio.h>
int main()
{
    int c;
    printf("Enter 1 to find area of Rectangle\nEnter 2 to find area of
Circle\n");
    scanf("%d", &c);

    if (c==1)
    {
        printf("Calculating the area of Rectangle\n");
        int l,b;
        printf("Enter length: ");
        scanf("%d", &l);
        printf("Enter breadth: ");
        scanf("%d", &b);
        int areaRect = l*b;
        printf("Area of the Rectangle is %d", areaRect);
    }

    else if (c==2)
    {
        printf("Calculating the area of Circle\n");
        int r;
        printf("Enter radius: ");
        scanf("%d", &r);
```

```
        float areaCircle = (3.14*r*r);
        printf("Area of the Circle is %f", areaCircle);
    }

    else
        printf("Enter the correct number.");

    return 0;
}
```

OUTPUT SCREEN:-

```
Output

/tmp/g9bLqKY57R.o
Enter 1 to find area of RectangleEnter 2 to find area of Circle
1
Calculating the area of Rectangle
Enter length: 9
Enter breadth: 6
Area of the Rectangle is 54
```

```
Output

/tmp/g9bLqKY57R.o
Enter 1 to find area of Rectangle
Enter 2 to find area of Circle
2
Calculating the area of Circle
Enter radius: 21
Area of the Circle is 1384.739990
```

(5) AIM:-

To write a simple calculator program in C that performs addition, subtraction, multiplication and division based on user choice.

CODE:-

```c
#include <stdio.h>
int main()
{
    int ch, a, b;
    printf("Simple Calculator Program\nEnter 1 for addition, 2 for subtraction,
     3 for multiplication, or 4 for division : ");
    scanf("%d", &ch);
    printf("Enter 1st number: ");
    scanf("%d", &a);
    printf("Enter 2nd number: ");
    scanf("%d", &b);

    if (ch==1)
        printf("Sum of %d and %d is %d \n\n", a, b, a+b);
    else if (ch==2)
        printf("Difference between %d and %d is %d \n\n", a, b, a-b);
    else if (ch==3)
        printf("Product of %d and %d is %d \n\n", a, b, a*b);
    else if (ch==4)
        printf("Quotient of %d and %d is %d \n\n", a, b, a/b);
    else
        printf("Enter correct number for choice.");

    return 0;
}
```

OUTPUT SCREEN:-

Output Clear

```
/tmp/g9bLqKY57R.o
Simple Calculator Program
Enter 1 for addition, 2 for subtraction, 3 for multiplication, or 4 for division : 1
Enter 1st number: 1528
Enter 2nd number: 1726
Sum of 1528 and 1726 is 3254
```

Output Clear

```
/tmp/g9bLqKY57R.o
Simple Calculator Program
Enter 1 for addition, 2 for subtraction, 3 for multiplication, or 4 for division : 2
Enter 1st number: 500
Enter 2nd number: 400
Difference between 500 and 400 is 100
```

Output Clear

```
/tmp/g9bLqKY57R.o
Simple Calculator Program
Enter 1 for addition, 2 for subtraction, 3 for multiplication, or 4 for division : 3
Enter 1st number: 16
Enter 2nd number: 5
Product of 16 and 5 is 80
```

Output Clear

```
/tmp/g9bLqKY57R.o
Simple Calculator Program
Enter 1 for addition, 2 for subtraction, 3 for multiplication, or 4 for division : 4
Enter 1st number: 100
Enter 2nd number: 5
Quotient of 100 and 5 is 20
```