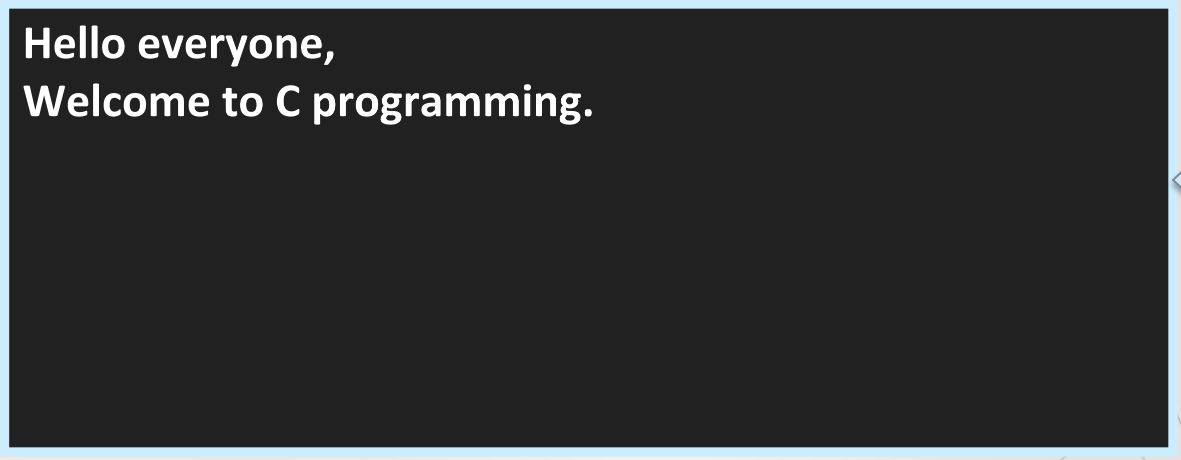
Let’s Start Coding

printf(), scanf() and Operators

Prepared by: Puja Chakraborty

Task: Write a C program to display the following output in the given format.

Two lines of output

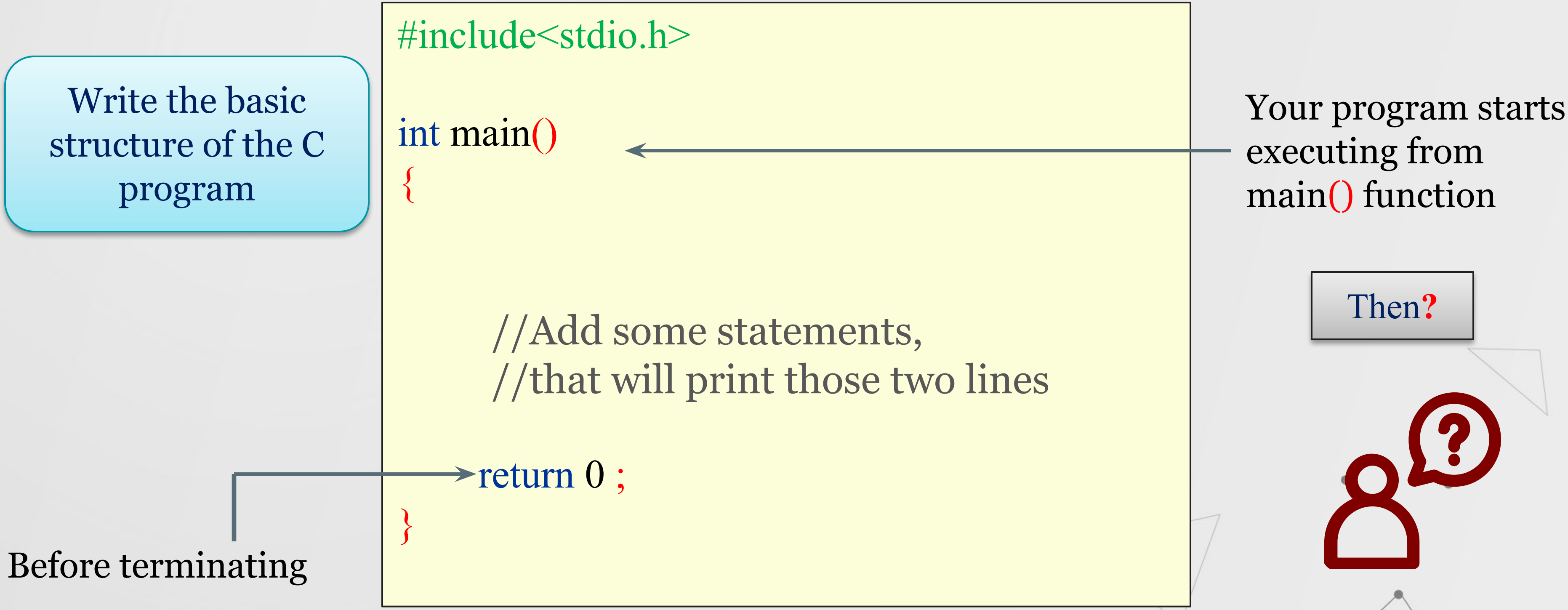


```
Hello everyone,
Welcome to C programming.
```

Output Console

So, what should we do?

Step 1:



Write the basic structure of the C program

```
#include<stdio.h>

int main()
{



        //Add some statements,
        //that will print those two lines

        return 0 ;
}
```

Your program starts executing from main() function

Before terminating

Then?

Step 2:

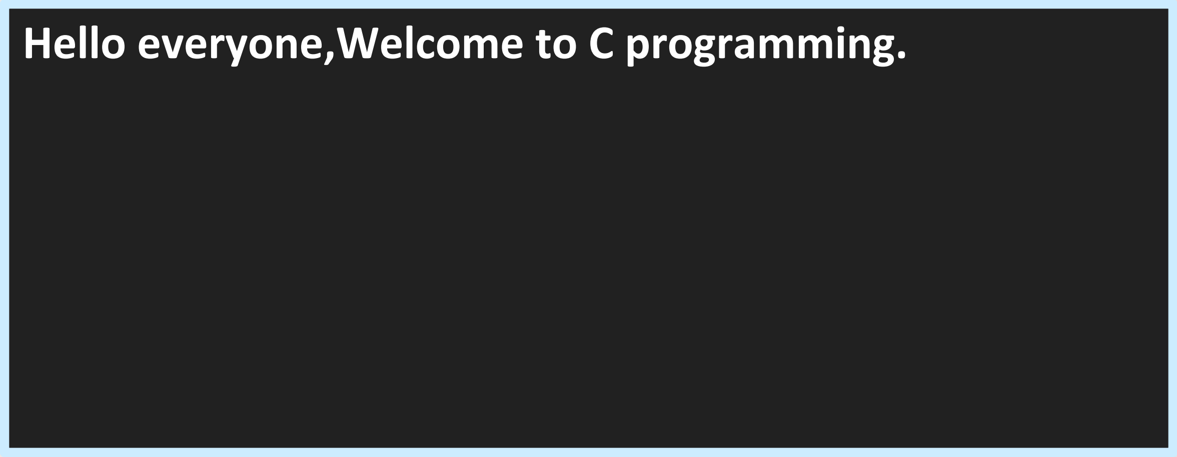
```
#include<stdio.h>

int main()
{

    printf(“Hello everyone,”);
    printf(“Welcome to C programming”);

    return 0 ;
}
```

Use printf() to display those lines.

Now,
Save, Build
and Run your
code

So, did you get the expected output?

Or, Did we get something like this?



```
Hello everyone,Welcome to C programming.
```

Why did this happen ?

Let’s check the code again.

```
#include<stdio.h>

int main()
{

     printf(“Hello everyone,”);
     printf(“Welcome to C programming”);

     return 0 ;
}
```

Though, we used two different printf(), we did not use new line in the printing statements

Check your code again.

```
#include<stdio.h>

int main()
{

    printf(“Hello everyone,”);
    printf(“Welcome to C programming”);

    return 0 ;
}
```

So, after this line, we need to print a new line.

Check your code again.

```
#include<stdio.h>

int main()
{

      printf(“Hello everyone,\n”);
      printf(“Welcome to C programming”);

      return 0 ;
}
```

So, after this line, we need to print a new line.

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Check your code again.

```
#include<stdio.h>

int main()
{

      printf(“Hello everyone,\n”);
      printf(“Welcome to C programming”);

      return 0 ;
}
```

Now,
Save, Build and Run
your code again

So, did you get the expected output?
- Yes!

Congratulations

You have successfully completed your code!

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Is this the only way to solve this problem?

- No.

```
#include<stdio.h>

int main()
{

    printf(“Hello everyone,\n”);
    printf(“Welcome to C programming”);

    return 0 ;
}
```

```
#include<stdio.h>

int main()
{

    printf(“Hello everyone,\nWelcome to         C
programming”);

    return 0 ;
}
```

One problem can be solved in different ways!

Task: Write a C program that will take one integer number as input and display it.

Sample Input:

```
10
```

Sample Output:

```
10
```

Sample Input:

```
1012
```

Sample Output:

```
1012
```

Step 1:

Write the basic structure of the C program

```c
#include<stdio.h>

int main()
{




        return 0 ;
}
```

Step 2:

Declare an integer type variable

```
#include<stdio.h>

int main()
{
        int x ;




        return 0 ;
}
```

This variable will be used to store the input (integer number) given by the user

Step 3:

```
#include<stdio.h>

int main()
{
      int x ;
      scanf(“%d”, &x);



       return 0 ;
}
```

Use scanf() to take input from user

Step 4:

Now,
Save, Build and
Run your code

```
#include<stdio.h>

int main()
{
    int x ;
    scanf(“%d”, &x);
    printf(“%d\n”, x);


     return 0 ;
}
```

Use printf() to display the number

N.B. Do not forget to give ‘&’ while taking input using scanf()

Task: Write a C program that will take the height and base of a triangle as input and display the area of that triangle.

The base and height will be integer number.

Sample Input:

```
2  5
```

Sample Output:

```
5
```

Sample Input:

```
10  4
```

Sample Output:

```
20
```

Area of triangle = (1/2) * base * height

N.B. Though the height and base of a triangle is given in integer format, the area can be a floating point number.

Step 1:

Write the basic structure of the C program

```
#include<stdio.h>

int main()
{




        return 0 ;
}
```

Step 2:

Declare two integer type variable

```
#include<stdio.h>

int main()
{
      int b, h ;



       return 0 ;
}
```

These variables will be used to store the input (integer numbers) given by the user

Step 3:

Declare a floating point type variable

```c
#include<stdio.h>

int main()
{
        int b, h ;
        float area ;



         return 0 ;
}
```

This variables will be used to store the area of triangle

Step 4:

```
#include<stdio.h>

int main()
{
        int b, h ;
        float area ;
        scanf(“%d %d”, &b, &h);


         return 0 ;
}
```

Use scanf() to take input

Take base and height as input

Step 5:

Calculate area

```
#include<stdio.h>

int main()
{
        int b, h ;
        float area ;
        scanf(“%d %d”, &b, &h);
        area = (1/2) * b *h ;

         return 0 ;
}
```

Step 6:

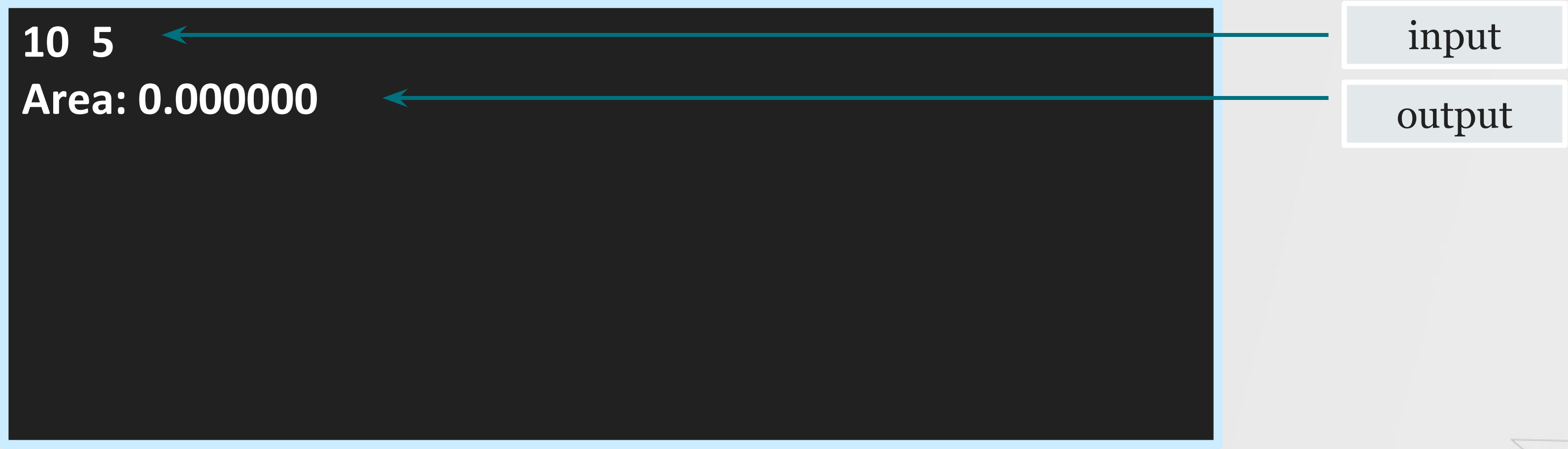
Now,
Save, Build and
Run your code

```
#include<stdio.h>

int main()
{
       int b, h ;
       float area ;
       scanf(“%d %d”, &b, &h);
       area = (1/2) * b *h ;
       printf(“Area: %f\n”,  area);
       return 0 ;
}
```

Use printf() to display the area

If we give b=10 and h=5 as input, what will be the output of this program?



```
10  5
Area: 0.000000
```

Why did the output (area) become zero?

Let’s go back to the code

```
#include<stdio.h>

int main()
{
        int b, h ;
        float area ;
        scanf(“%d %d”, &b, &h);
        area = (1/2) * b *h ;
        printf(“Area: %f\n”,  area);
        return 0 ;
}
```

Let’s go back to the code

```
#include<stdio.h>

int main()
{
        int b, h ;
        float area ;
        scanf(“%d %d”, &b, &h);
        area = (1/2) * b *h ;
        printf(“Area: %f\n”,  area);
        return 0 ;
}
```

½ becomes zero

Since 1 and 2 both are integer numbers, the quotient also be an integer number.

So, we can replace it following way

```
#include<stdio.h>

int main()
{
        int b, h ;
        float area ;
        scanf(“%d %d”, &b, &h);
        area = 0.5 * b *h ;
        printf(“Area: %f\n”,  area);
        return 0 ;
}
```

Or,

```
#include<stdio.h>

int main()
{
        int b, h ;
        float area ;
        scanf(“%d %d”, &b, &h);
        area = (1.00/2) * b *h ;
        printf(“Area: %f\n”,  area);
        return 0 ;
}
```

Or,

```
#include<stdio.h>

int main()
{
        int b, h ;
        float area ;
        scanf(“%d %d”, &b, &h);
        area = (1.00/2.00) * b *h ;
        printf(“Area: %f\n”,  area);
        return 0 ;
}
```

Or,

```
#include<stdio.h>

int main()
{
        int b, h ;
        scanf(“%d %d”, &b, &h);
        printf(“Area: %f\n”,  (0.5*b*h)   );
        return 0 ;
}
```

Thank You

Credit: This template was created by SlidesGo, including the icons by Flaticons and infographics and images by Freepiks.

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