C_Basic (Assignment 1)

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EX1: Write C Program to Find ASCII value of characters.

Output:

Enter a character: MASCII

value of M: 77

Sol :-

```c
#include<stdio.h>
#include<string.h>

int main()
{
    char c;
    printf("Enter a character :");
    scanf("%c",&c);
    printf("\n ASCII value of %c is %d", c, c);

    return 0;
}
```

```
Enter a character :M

 ASCII value of M is 77
Process returned 0 (0x0)   execution time : 2.649 s
Press any key to continue.
```

EX2: Write C Program to Swap two numbers.

Output:

Before swapping:

Enter value of x: 6.30 Enter

value of y: 2.80 **After**

swapping:

value of x: 2.80

value of y: 6.30

Sol :-

```c
#include <stdio.h>

int main() {
    float x,y, temp;

    printf("Enter first number: ");
    scanf("%f", &x);

    printf("Enter second number: ");
    scanf("%f",&y);

    temp =x;

    x = y;

    // Value of temp (initial value of first) is assigned to second
    y = temp;

    printf("\nAfter swapping, first number = %f\n", x);
    printf("After swapping, second number = %f", y);

    return 0;
}
```

```
C:\Users\georg\OneDrive\Desktop\embedde\embedded\yhyy\bin\Debug\yhyy.exe
Enter first number: 6.3
Enter second number: 2.8

After swapping, first number = 2.800000
After swapping, second number = 6.300000
```

EX3: Write C Program to check whether a number is Even or Odd.

Output 1:

Enter the number to check:5

5is Odd Number

Output 2:

Enter the number to check: 8

8 is Even Number

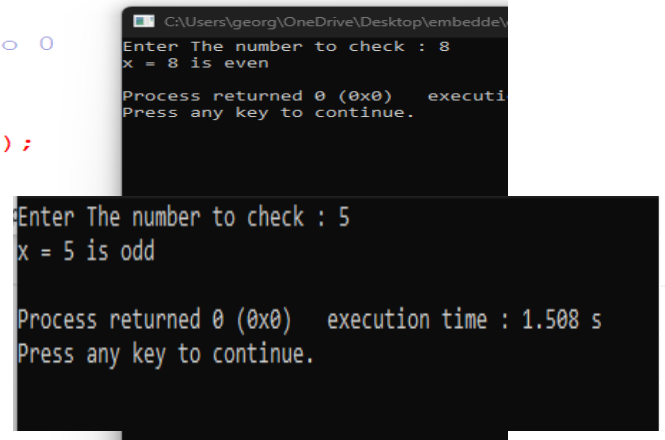
```c
#include<stdio.h>

int x; // global variables, initialized to 0

int main()
{
    printf("Enter The number to check : ");
    scanf("%d", &x);

    if (x==0)
    {
        printf("x = %d is zero  \n", x);
    }
    else if(x%2==0)
    {
        printf("x = %d is even \n", x);
    }

    else
    {
        printf("x = %d is odd \n", x);
    }
    return 0;
}
```



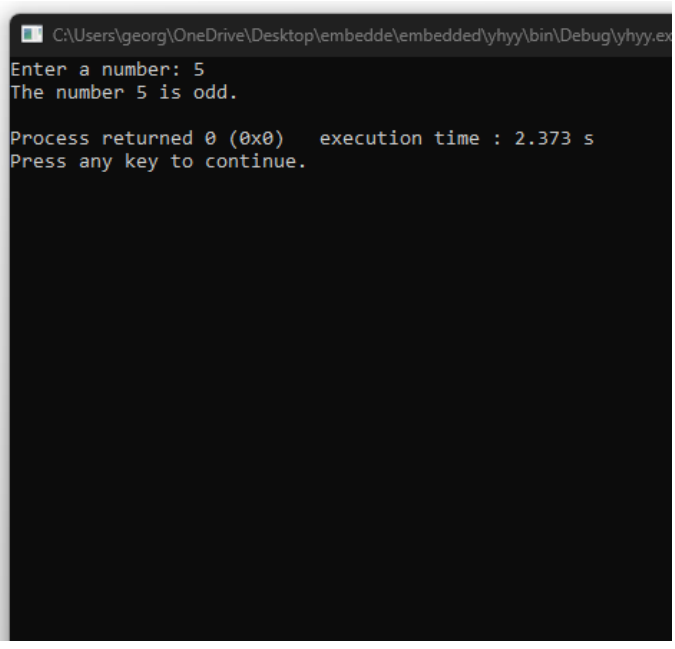
Another solution

```c
#include<stdio.h>

int main()
{
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);

    if (num == 0)
    {
        printf("The number entered is zero.\n");
    }
    else if ((num & 1) == 0)
    {
        printf("The number %d is even.\n", num);
    }
    else
    {
        printf("The number %d is odd.\n", num);
    }

    return 0;
}
```



C_Basic (Assignment 1)

EX4: Write C Program to Find the Largest number Among threenumbers and get the sum and average of these numbers.

Output:

Enter three numbers: 5.60 10.20 8.90

The largest number = 10.20

Sum = 24.70

Average = 8.23

```c
#include<stdio.h>

int main()
{
    float num1, num2, num3, sum;
    float avg;

    printf("Enter three numbers: ");
    scanf("%f%f%f", &num1, &num2, &num3);

    // Calculate the sum while reading the numbers
    sum = num1 + num2 + num3;

    // Calculate the average
    avg = (float)sum / 3;

    // Find the largest number
    float largest = (num1 > num2) ? ((num1 > num3) ? num1 : num3) : ((num2 > num3) ? num2 : num3);

    printf("The largest number is %0.2f\nThe sum of the numbers is %0.2f\nThe average of the numbers is %.2f\n", largest, sum, avg);

    return 0;
}
```

```
C:\Users\georg\OneDrive\Desktop\embedde\embedded\yhyy\bin\Debug\yhyy.exe
Enter three numbers: 5.6 10.2 8.9
The largest number is 10.20
The sum of the numbers is 24.70
The average of the numbers is 8.23
```

Or

```c
#include<stdio.h>

int main()
{
    float num1, num2, num3, sum;
    float avg;

    printf("Enter three numbers: ");
    scanf("%f%f%f", &num1, &num2, &num3);

    // Find the largest number
    int largest = num1;
    if(num2 > largest)
        largest = num2;
    if(num3 > largest)
        largest = num3;

    printf("The largest number is %d\n", largest);

    // Calculate the sum
    sum = num1 + num2 + num3;
    printf("The sum of the numbers is %f\n", sum);

    // Calculate the average
    avg = (float)sum / 3;
    printf("The average of the numbers is %.2f\n", avg);

    return 0;
}
```

```
C:\Users\georg\OneDrive\Desktop\embedde\embedded\yhyy\bin\Debug
Enter three numbers: 10.2 5.6 8.9
The largest number is 10
The sum of the numbers is 24.699999
The average of the numbers is 8.23

Process returned 0 (0x0)   execution time : 8.527 s
Press any key to continue.
```

EX5: Write C Program to find Factorial of a Number.

Output1:

Enter the Number: 5

Factorial of 5 is = 120

Output2:

Enter the Number: -2

Error!! Factorial of Negative Number doesn't exist.

```c
#include <stdio.h>

int main() {
    int n, i;
    unsigned int factorial = 1;

    printf("Enter an integer: ");
    scanf("%d", &n);

    // show error if the user enters a negative integer
    if (n < 0)
        printf("Error! Factorial of a negative number doesn't exist.\n");
    else {
        for (i = 1; i <= n; ++i) {
            factorial *= i;
        }
        printf("Factorial of %d = %d\n", n, factorial);
    }

    return 0;
}
```

```
C:\Users\georg\OneDrive\Desktop\embedde\embedded\yhyy\bin\Debug\yhyy.exe
Enter an integer: 5
Factorial of 5 = 120
```

```
Enter an integer: -2
Error! Factorial of a negative number doesn't exist.

Process returned 0 (0x0)   execution time : 3.131 s
Press any key to continue.
```

EX6: Write C Program to Swap two numbers without temp variable.

Output 1:

Before swapping: Enter value of x: 5.32Enter value of y: 3.61**After swapping:** Enter value of x: 3.61 Enter value of y: 5.32

```c
float x, y; // global variables, initialized to 0
int main()
{
    printf("Enter The value of x: ");
    scanf("%f", &x);
    getchar(); // to consume the newline character left by scanf
    printf("Enter The value of y: ");
    scanf("%f", &y);
    getchar(); // to consume the newline character left by scanf
    x=x+y;
    y=x-y;
    x=x-y;
    printf("After swapping x&y");
    printf("\nx = %.2f\n", x);
    printf("y = %.2f\n", y);
    return 0;
}
```

```
Select C:\Users\georg\OneDrive\Desktop\embedde\embedded\yhyy\bin\Debug
Enter The value of x: 5.32
Enter The value of y: 3.61
After swapping x&y
x = 3.61
y = 5.32

Process returned 0 (0x0)   execution time : 13.659 s
Press any key to continue.
```

C_Basic (Assignment 1)

EX1: Evaluate the following expression.

```c
#include <stdio.h>

int main()
{
    int x = 3  , z;
    float y = 1.5 , m;
    m = x/2 + x*4/x - x +y/3 ;
    printf("m = %0.2f\n" , m);
    z = m;
    printf("z = %d" , z);
    return 0;
}
```

m = ??

z = ??

M = 2.50
Z= 2

EX2: predict the output of the following expression.

- **1 << 2+4 << 3 = 512**
- **256 >> 2 = 64**

EX3: what is the value of x1 , x2

```c
int x = 2;
 printf("x1 = %d\n" ,x++);
 printf("x2 = %d\n" ,++x);
```

X1= 2 ;
X2=4 ;

EX4: predict the output of this program.

```c
#include <stdio.h>

int main()
{
    int x = 2 , y = 4 , z = 3 , f;
    f = z/x*x ;
    y = x++ + --y + ++x ;
    printf("x = %d \n y = %d \n f = %d" ,x ,y , f);
    return 0;
}
```

X=4

Y=9

F=2