PRACTICE LAB ASSIGNMENT 5

1. Write a program to print the following pattern on the output screen.

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

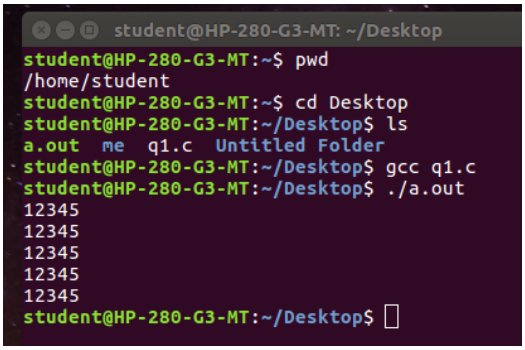
1 2 3 4 5

CODE

```
#include <stdio.h>

void main()

{

int i, j;

for(i=1; i<=5; i++)

{

for(j=1; j<=5; j++)

{

printf("%d", j);

}

printf("\n");

}

}
```

```
#include <stdio.h>
void main()
{
        int i, j;
        for(i=1; i<=5; i++)
        {
                for(j=1; j<=5; j++)
                {
                        printf("%d", j);
                }
                printf("\n");
        }
}
```

SS of the OUTPUT



2. Write a program to print the following pattern on the output screen.

1

1 2

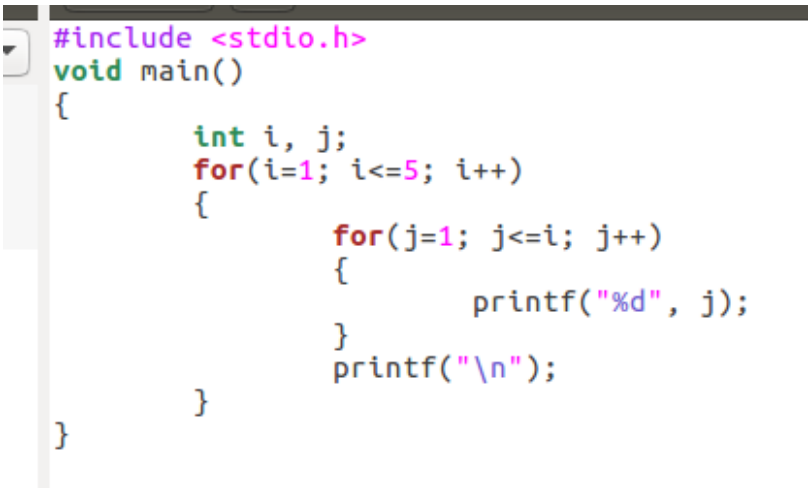
1 2 3

1 2 3 4

1 2 3 4 5

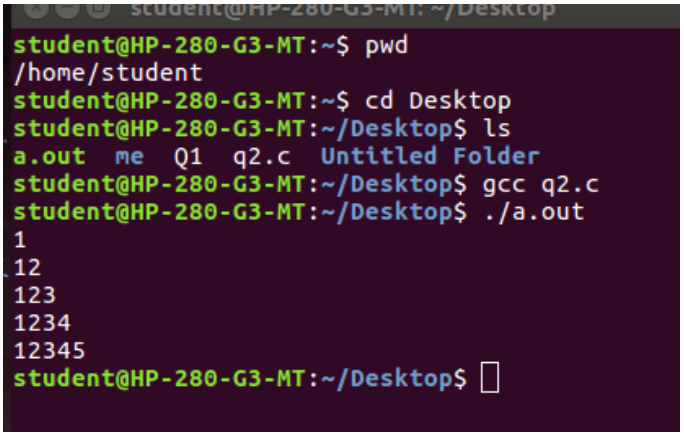
CODE

```
#include <stdio.h>

void main()

{

int i, j;

for(i=1; i<=5; i++)

{

for(j=1; j<=i; j++)

{

printf("%d", j);

}

printf("\n");

}

}
```



```
#include <stdio.h>
void main()
{
        int i, j;
        for(i=1; i<=5; i++)
        {
                for(j=1; j<=i; j++)
                {
                        printf("%d", j);
                }
                printf("\n");
        }
}
```

SS of the OUTPUT



```
student@HP-280-G3-MT:~$ pwd
/home/student
student@HP-280-G3-MT:~$ cd Desktop
student@HP-280-G3-MT:~/Desktop$ ls
a.out  me  Q1  q2.c  Untitled Folder
student@HP-280-G3-MT:~/Desktop$ gcc q2.c
student@HP-280-G3-MT:~/Desktop$ ./a.out
1
12
123
1234
12345
student@HP-280-G3-MT:~/Desktop$
```

3. Write a program to print the following pattern on the output screen.

1

2 1

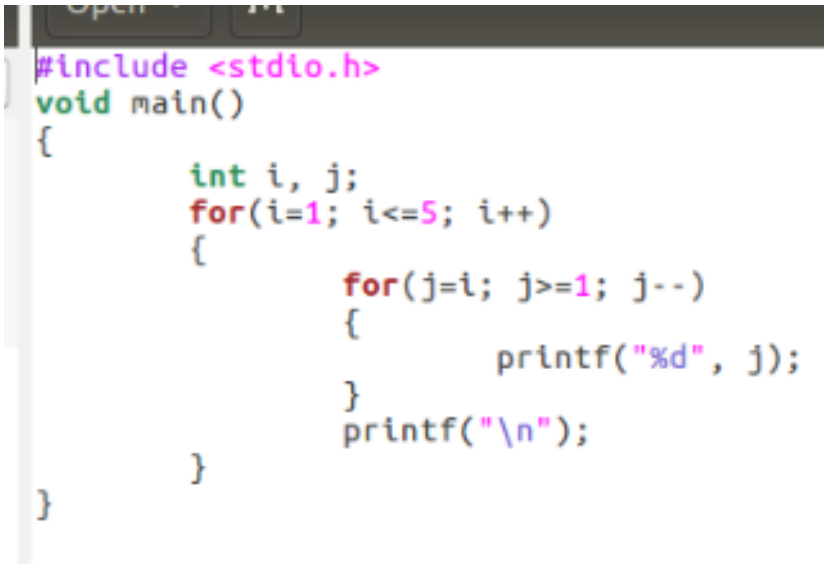
3 2 1

4 3 2 1

5 4 3 2 1

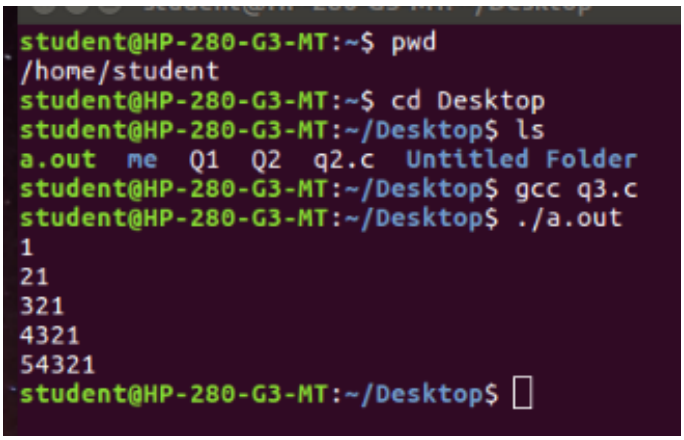
CODE

```
#include <stdio.h>

void main()

{

int i, j;

for(i=1; i<=5; i++)

{

for(j=i; j>=1; j--)

{

printf("%d", j);

}

printf("\n");

}

}
```



```
#include <stdio.h>
void main()
{
        int i, j;
        for(i=1; i<=5; i++)
        {
                for(j=i; j>=1; j--)
                {
                        printf("%d", j);
                }
                printf("\n");
        }
}
```

SS of the OUTPUT



```
student@HP-280-G3-MT:~$ pwd
/home/student
student@HP-280-G3-MT:~$ cd Desktop
student@HP-280-G3-MT:~/Desktop$ ls
a.out  me  Q1  Q2  q2.c  Untitled Folder
student@HP-280-G3-MT:~/Desktop$ gcc q3.c
student@HP-280-G3-MT:~/Desktop$ ./a.out
1
21
321
4321
54321
student@HP-280-G3-MT:~/Desktop$
```

4. Write a program using “Nested for” loop to print the following pattern on the output screen.

1

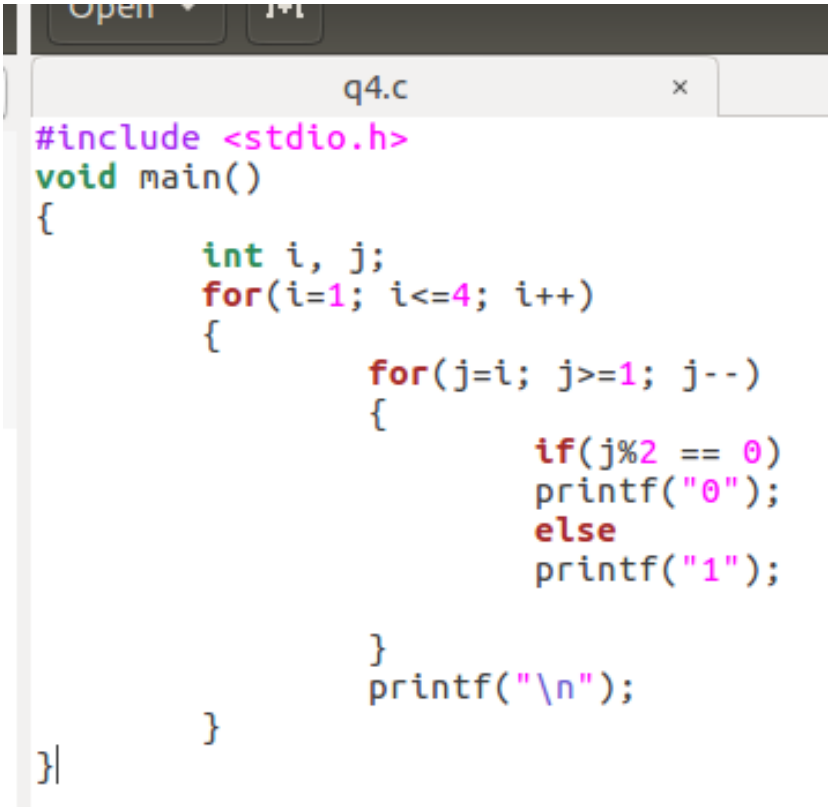
0 1

1 0 1

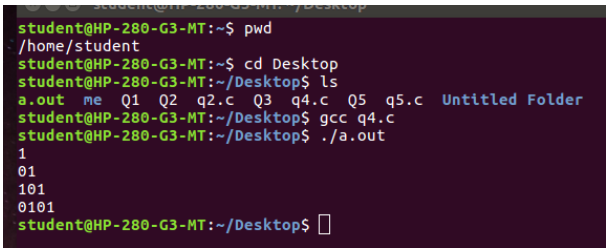
0 1 0 1

CODE

```
#include <stdio.h>
void main()
{
int i, j;
for(i=1; i<=4; i++)
{
for(j=i; j>=1; j--)
{
if(j%2 == 0)
printf("0");
else
printf("1");
}
printf("\n");
}
}
```



SS of the OUTPUT



5. Write a program to print the following pattern on the output screen.

1

1 0

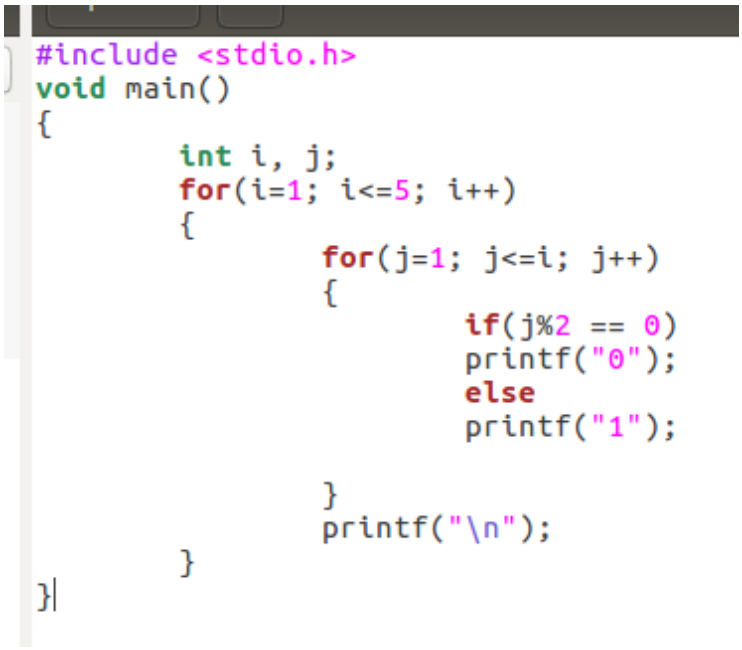
1 0 1

1 0 1 0

1 0 1 0 1

CODE

```
#include <stdio.h>
void main()
{
int i, j;
for(i=1; i<=5; i++)
{
for(j=1; j<=i; j++)
{
if(j%2 == 0)
printf("0");
else
printf("1");
}
printf("\n");
}
}
```

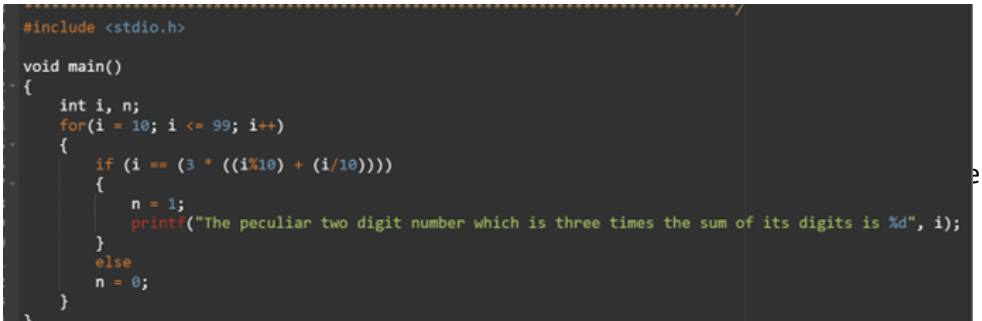


SS of the OUTPUT

6. Write a C program to find a peculiar 2-digit number which is three times the sum of its digits.

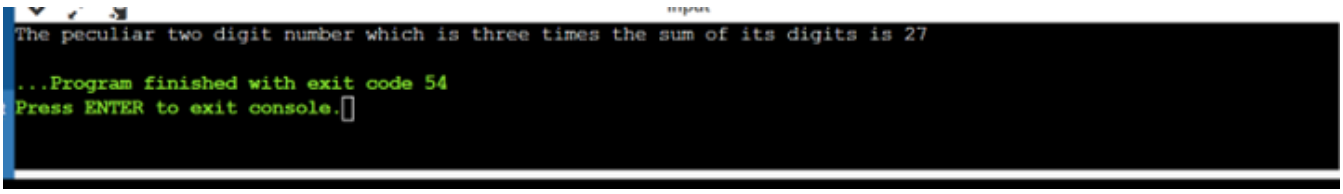
CODE

```
#include <stdio.h>

void main()
{
    int i, n;
    for(i = 10; i <= 99; i++)
    {
        if (i == (3 * ((i%10) + (i/10))))
        {
            n = 1;
            printf("The peculiar two digit number which is three times the sum of its digits is %d", i);
        }
        else
        n = 0;
    }
```



```
void main()
{
   int i, n;
   for(i = 10; i <= 99; i++)
   {
      if (i == (3 * ((i%10) + (i/10))))
      {
         n = 1;
         printf("The peculiar two digit number which is three times the sum of its digits is %d",
i);
      }
      else
      n = 0;
   }
}
```

SS of the OUTPUT



7. Write a program to print the following pattern on the output screen.

```
    *
   ***
  *****
```

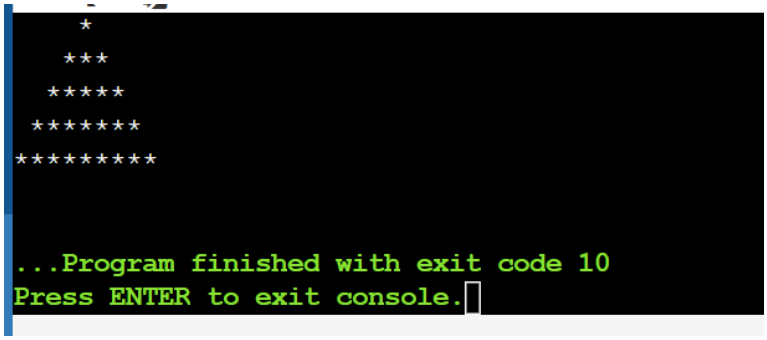
****

****

CODE

```
#include <stdio.h>
void main()
{
  int i, j, l;
  for(i = 1; i <= 5; ++i, l = 0)
  {
      for(j = 1; j <= (5 - i); j++)
      {
         printf(" ");
      }
      while(l != ((2 * i) - 1))
      {
         printf("*");
         l++;
      }
      printf("\n");
  }
}
```

SS of the OUTPUT



8. Write a program to print the following pattern on the output screen.

```
   *
  *A*
 *A*A*
```

*A*A*A*

CODE

```
#include <stdio.h>
void main()
{
  int i, j, l = 7;
  for(i = 1; i <= l; i++)
  {
      for(j = 1; j < l; j++)
      {
         printf(" ");
      }
      l--;
      for(j = 1; j<= ((2 * i) - 1); j++)
      {
         if(j % 2 == 1)
         printf("*");
         else
         printf("A");
      }
      printf("\n");
  }
}
```

SS of the OUTPUT

9. Write a program to print the following pattern

*

* *

* * *

* * * *

* * * * *

* * * *

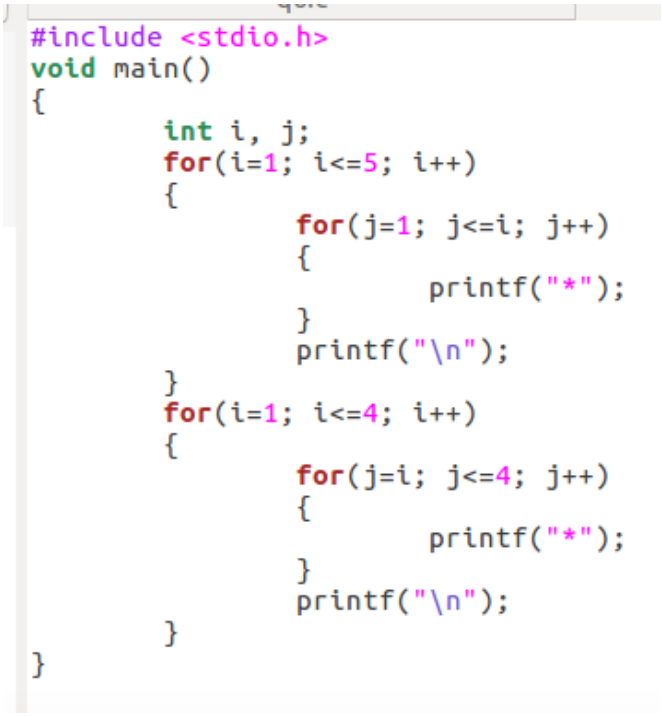
* * *

* *

*

CODE

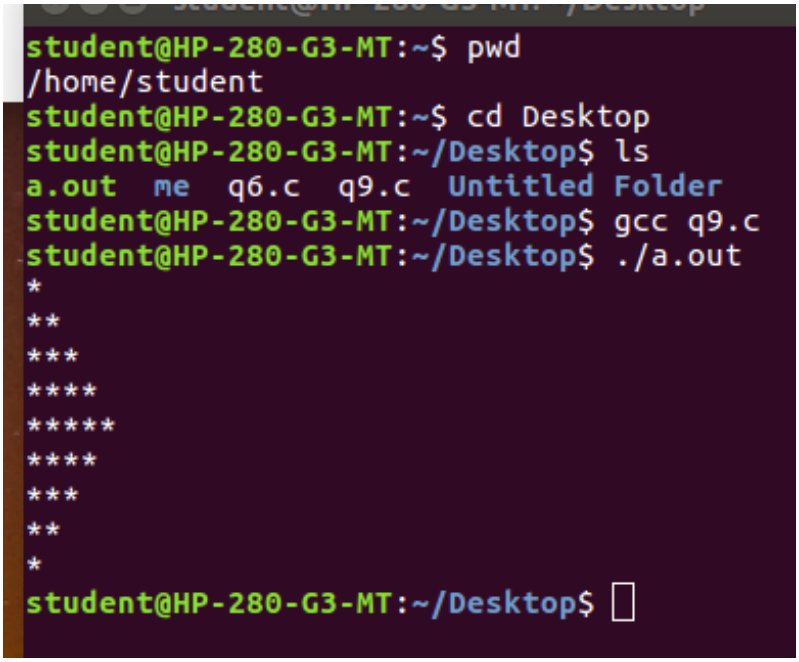
```
#include <stdio.h>
void main()
{
int i, j;
for(i=1; i<=5; i++)
{
for(j=1; j<=i; j++)
{
printf("*");
}
printf("\n");
}
for(i=1; i<=4; i++)
{
for(j=i; j<=4; j++)
{
printf("*");
}
printf("\n");
}
```



```
#include <stdio.h>
void main()
{
        int i, j;
        for(i=1; i<=5; i++)
        {
                for(j=1; j<=i; j++)
                {
                        printf("*");
                }
                printf("\n");
        }
        for(i=1; i<=4; i++)
        {
                for(j=i; j<=4; j++)
                {
                        printf("*");
                }
                printf("\n");
        }
}
```

}

SS of the OUTPUT



10. Write a program to print the following pattern

1

2 1 2

3 2 1 2 3

4 3 2 1 2 3 4

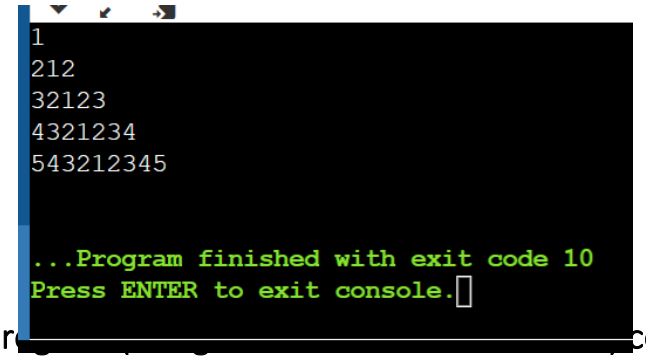
```
#include <stdio.h>
void main()
{
   int i, j;
   for(i = 1; i <= 5; i++)
```

5 4 3 2 1 2 3 4 5

CODE

```
#include <stdio.h>
void main()
{
  int i, j;
  for(i = 1; i <= 5; i++)
  {
      for(j = i; j >= 1; j--)
      {
         printf("%d", j);
      }
      for(j = 2; j <= i; j++)
      {
         printf("%d", j);
      }
      printf("\n");
  }
}
```

SS of the OUTPUT



11. Write a menu-driven pr[illegible]containing following programs:

(i) Factorial of any number

(ii) Prime Number

(iii) Even or Odd number

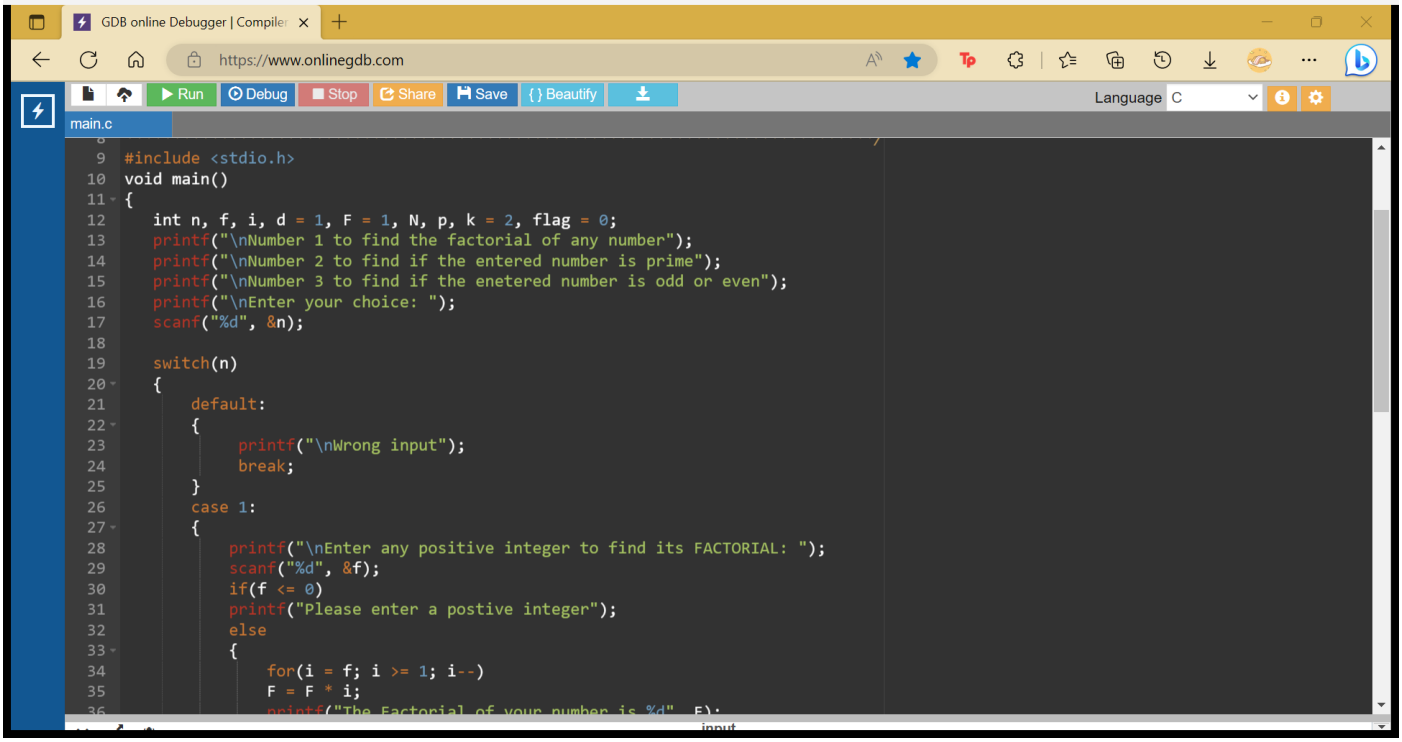
CODE

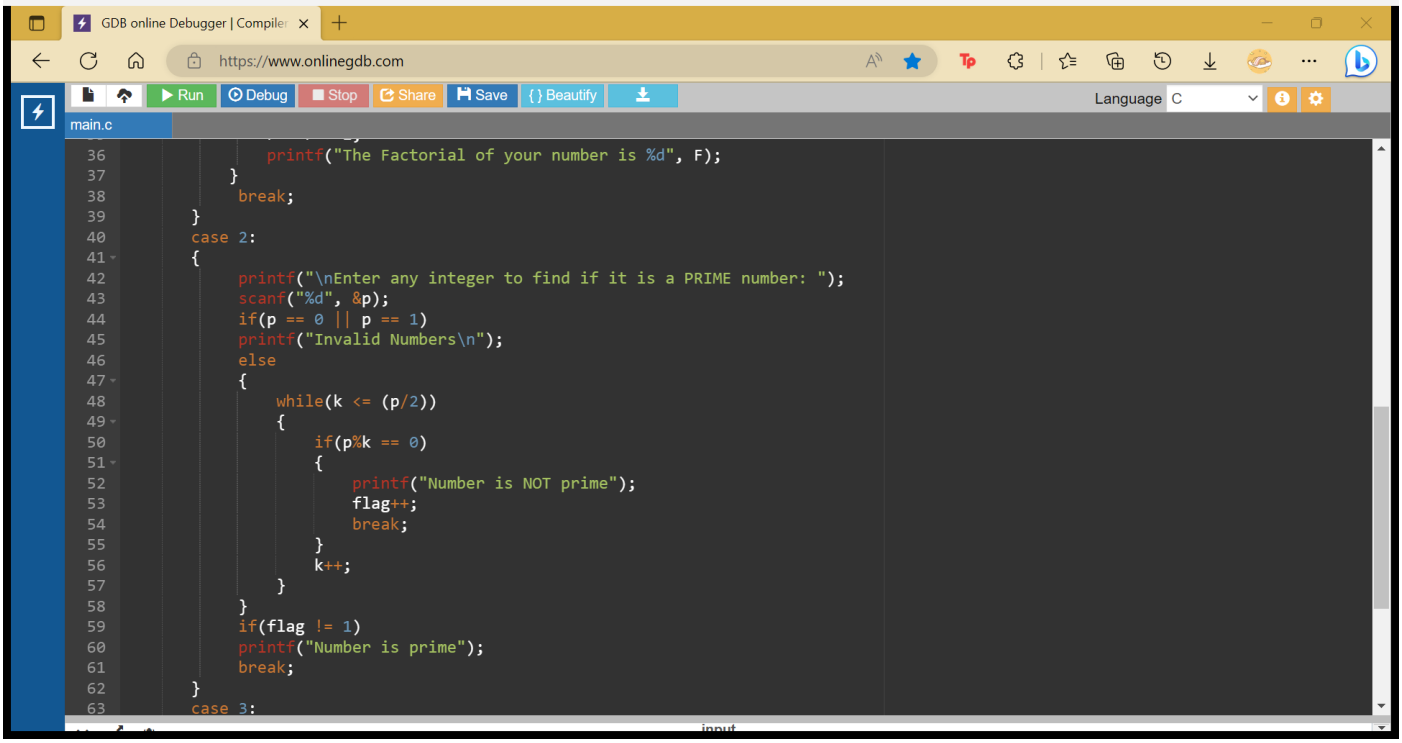
```
#include <stdio.h>
void main()
{
  int n, f, i, d = 1, F = 1, N, p, k = 2, flag = 0;
  printf("\nNumber 1 to find the factorial of any number");
  printf("\nNumber 2 to find if the entered number is prime");
  printf("\nNumber 3 to find if the enetered number is odd or even");
  printf("\nEnter your choice: ");
  scanf("%d", &n);

  switch(n)
  {
     default:
     {
         printf("\nWrong input");
         break;
     }
     case 1:
     {
        printf("\nEnter any positive integer to find its FACTORIAL: ");
        scanf("%d", &f);
        if(f <= 0)
        printf("Please enter a postive integer");
        else
        {
           for(i = f; i >= 1; i--)
           F = F * i;
           printf("The Factorial of your number is %d", F);
```

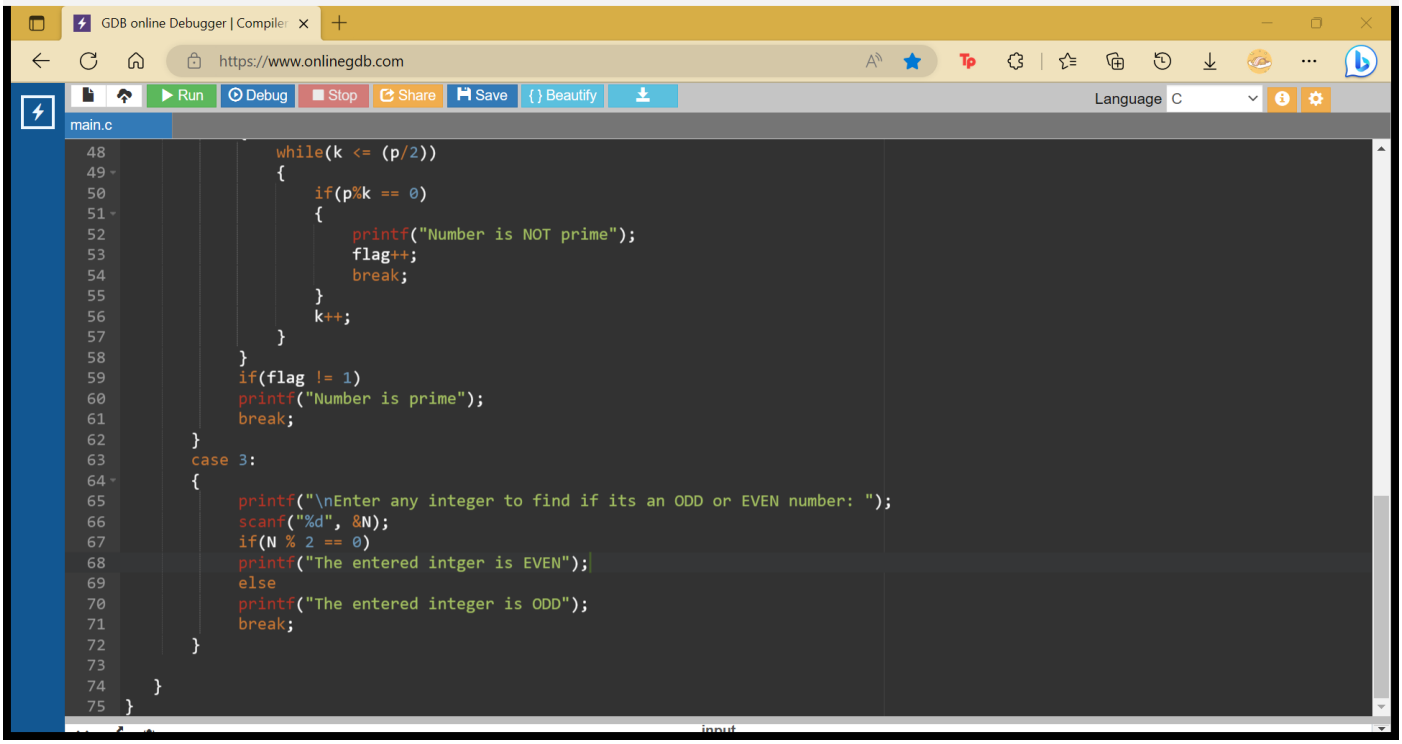
```
    }
    break;
}
case 2:
{
    printf("\nEnter any integer to find if it is a PRIME number: ");
    scanf("%d", &p);
    if(p == 0 || p == 1)
    printf("Invalid Numbers\n");
    else
    {
        while(k <= (p/2))
        {
            if(p%k == 0)
            {
                printf("Number is NOT prime");
                flag++;
                break;
            }
            k++;
        }
    }
    if(flag != 1)
    printf("Number is prime");
    break;
}
case 3:
{
```

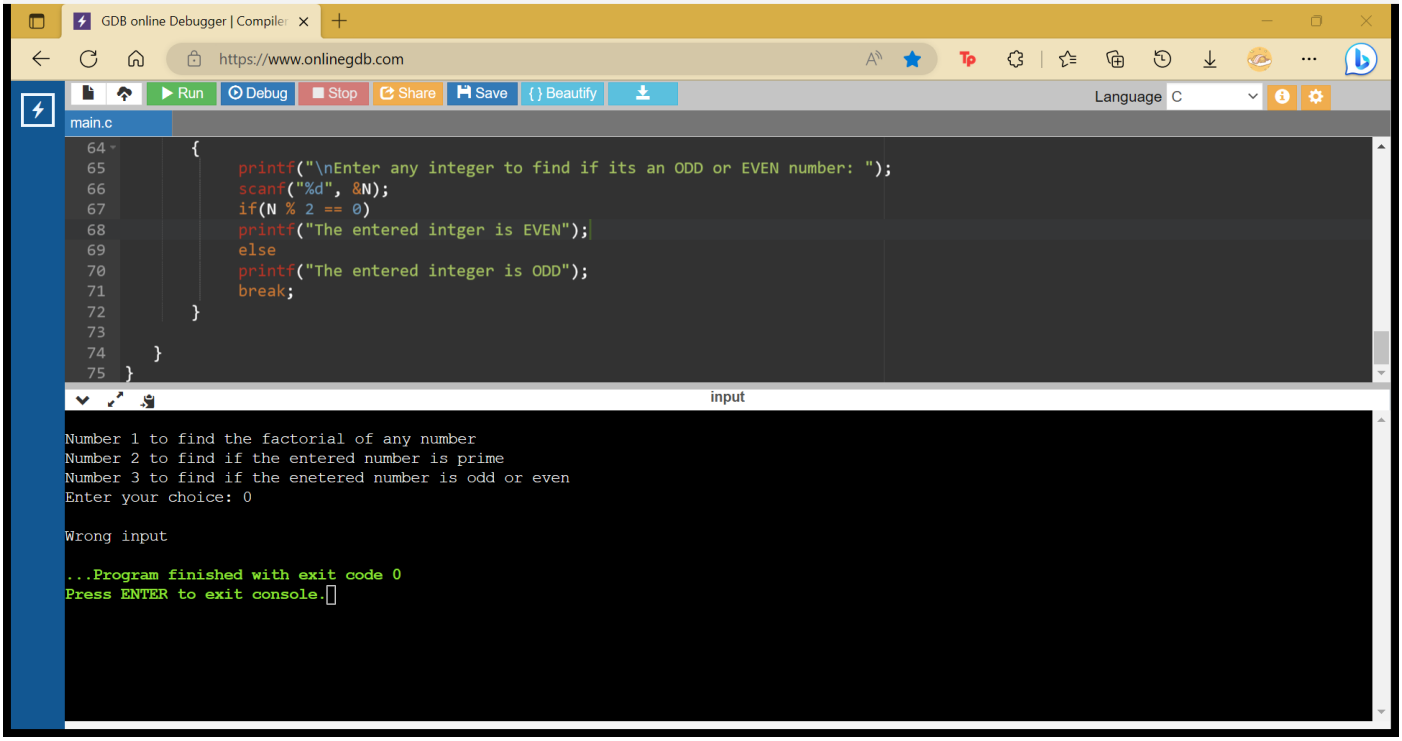
```
        printf("\nEnter any integer to find if its an ODD or EVEN number: ");
        scanf("%d", &N);
        if(N % 2 == 0)
        printf("The entered intger is EVEN");
        else
        printf("The entered integer is ODD");
        break;
    }

  }
}
```

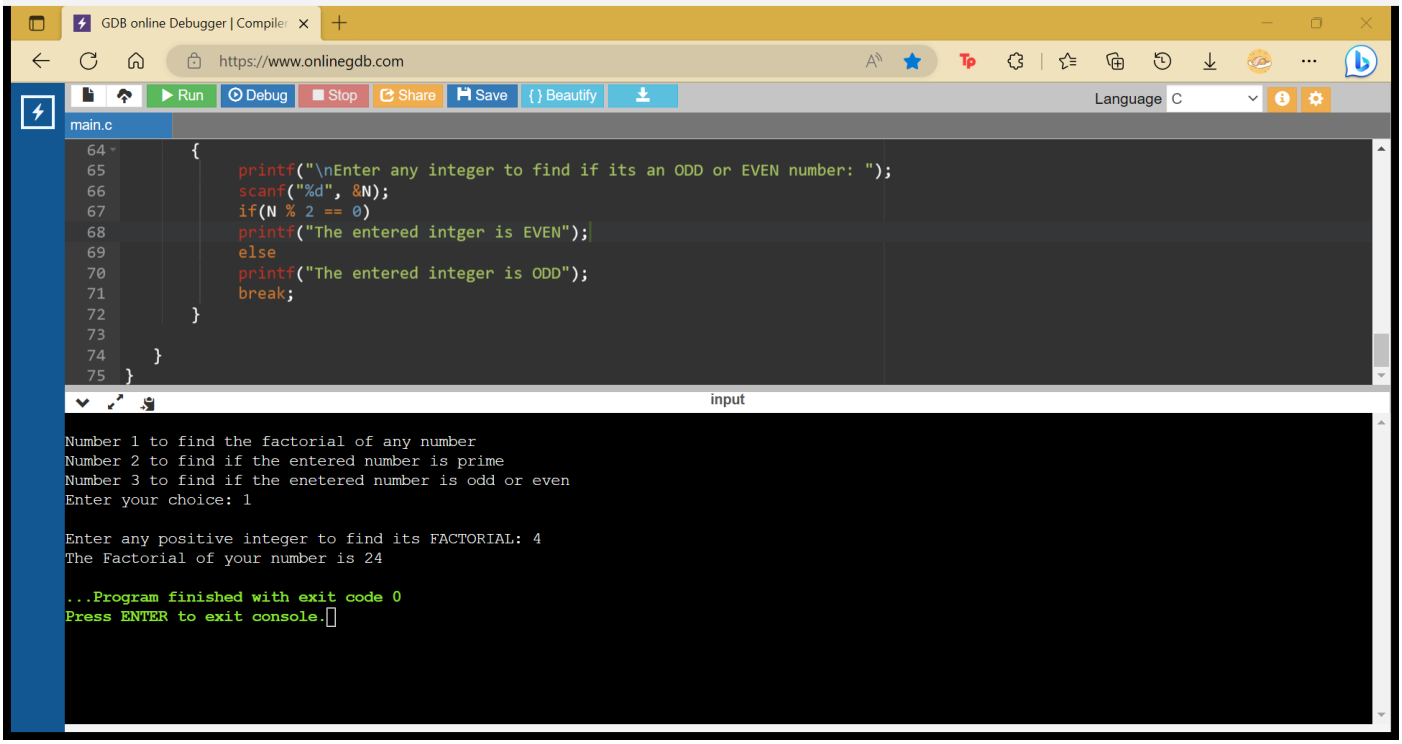
SS of the OUTPUT

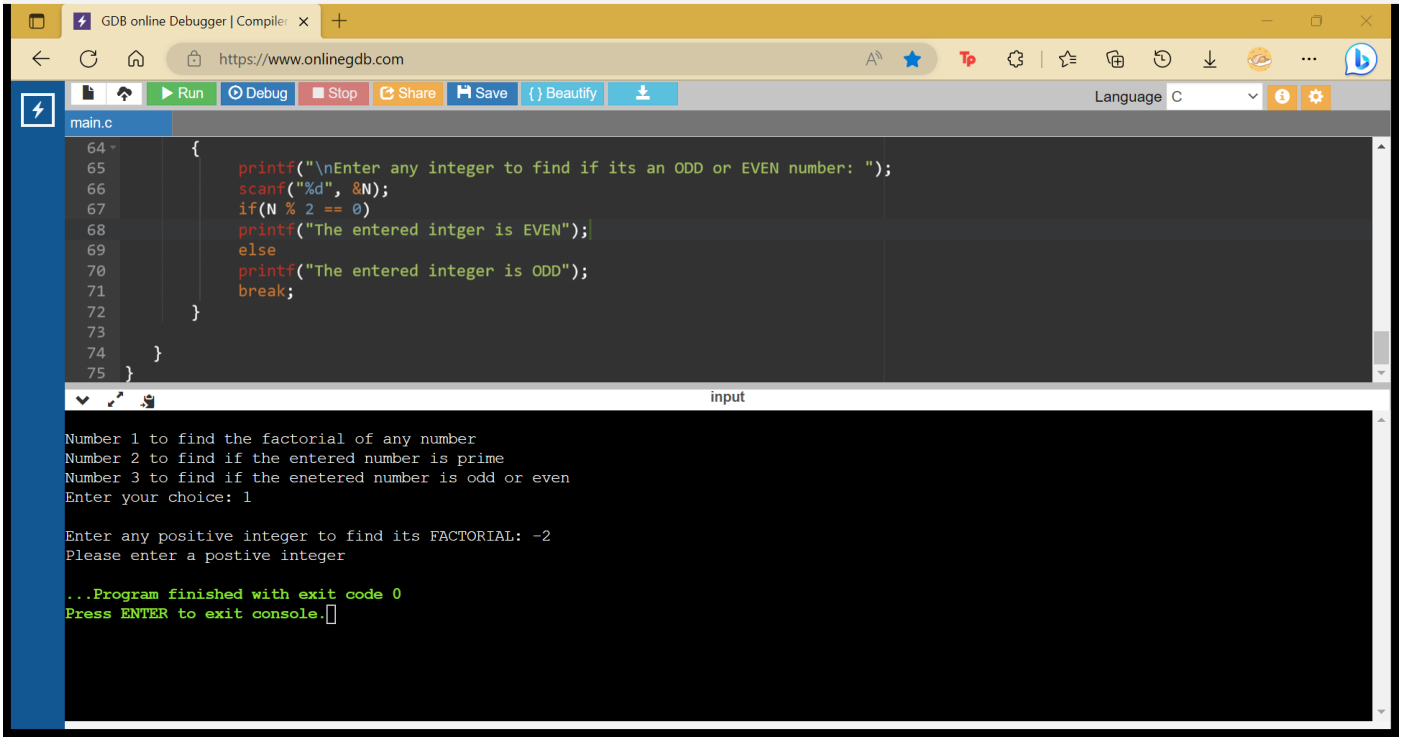


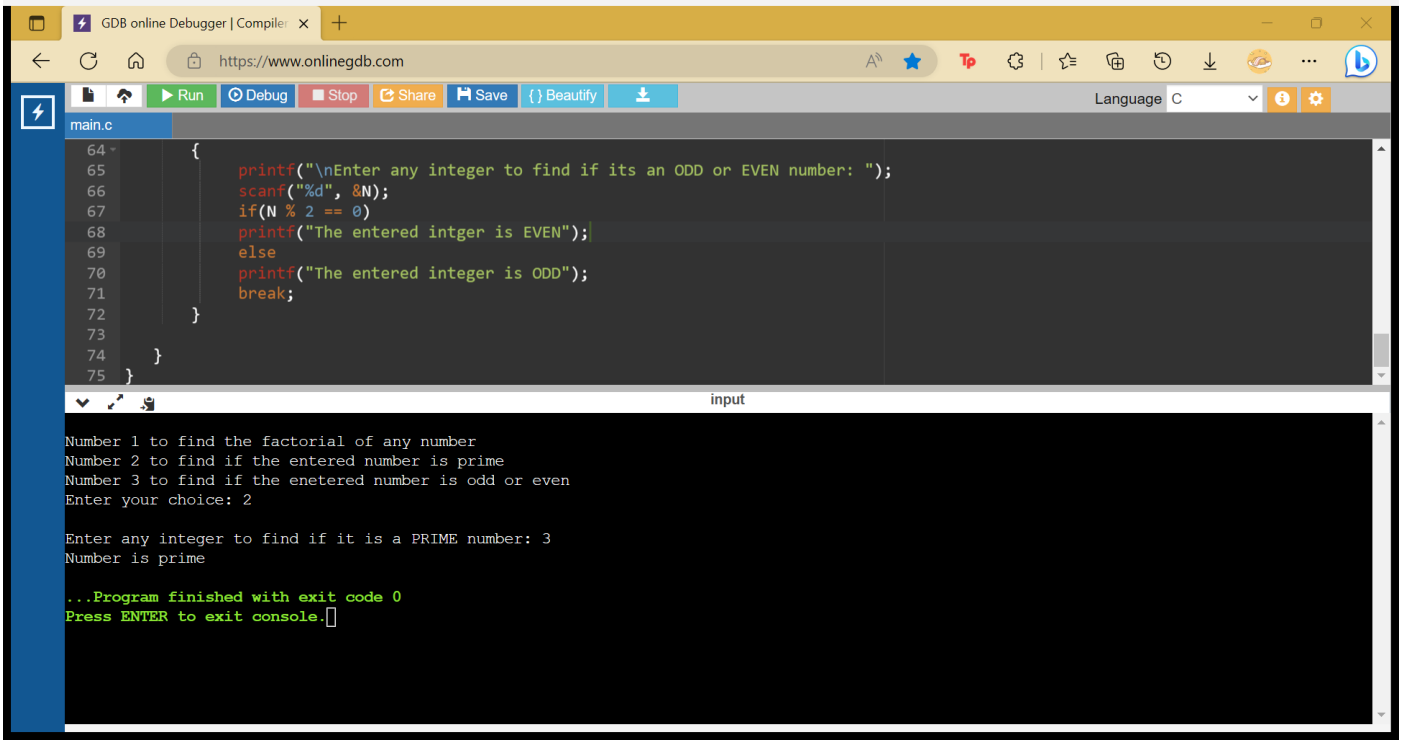

GDB online Debugger | Compiler
https://www.onlinegdb.com
Run
Debug
Stop
Share
Save
{ } Beautify
Language C
main.c
printf("The Factorial of your number is %d", F);
}
break;
}
case 2:
{
printf("\nEnter any integer to find if it is a PRIME number: ");
scanf("%d", &p);
if(p == 0 || p == 1)
printf("Invalid Numbers\n");
else
{
while(k <= (p/2))
{
if(p%k == 0)
{
printf("Number is NOT prime");
flag++;
break;
}
k++;
}
}
if(flag != 1)
printf("Number is prime");
break;
}
case 3:

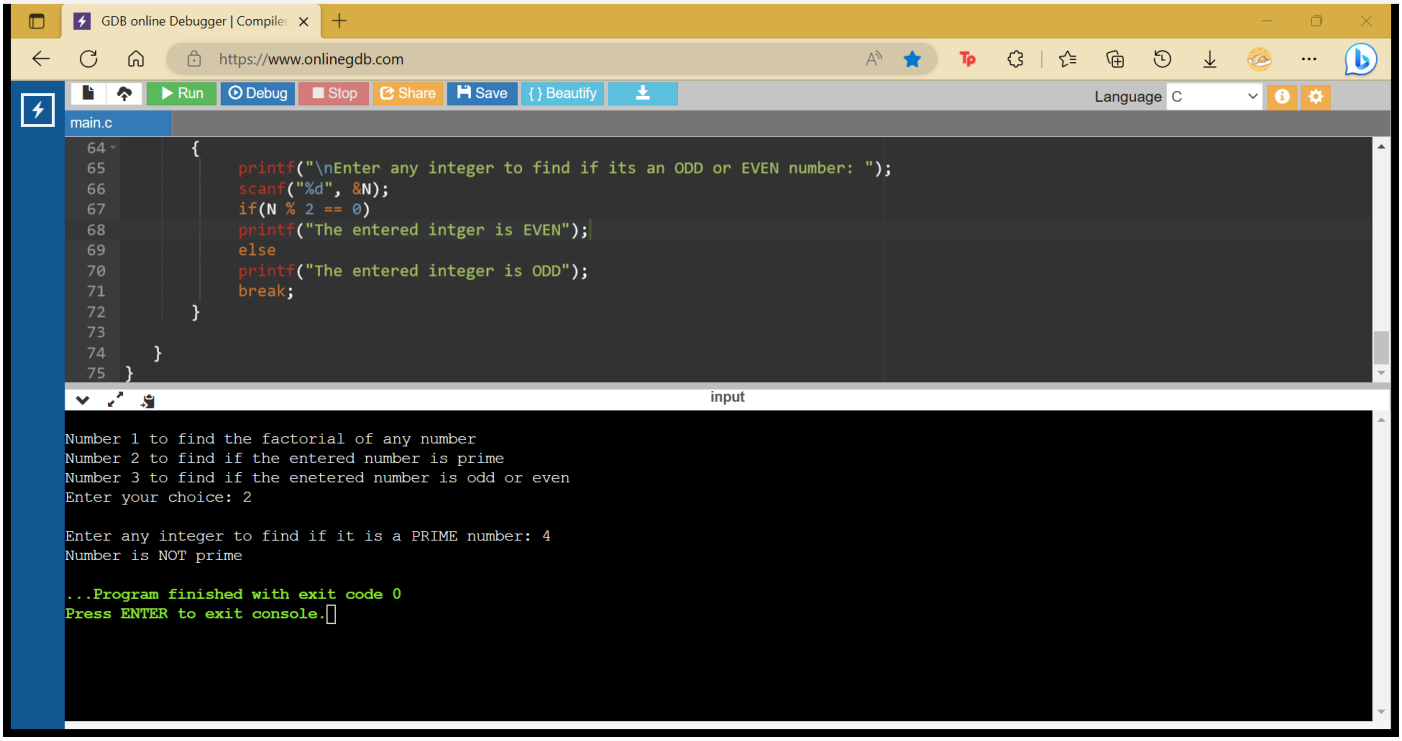

GDB online Debugger | Compiler
https://www.onlinegdb.com
Run
Debug
Stop
Share
Save
{ } Beautify
Language C
main.c
while(k <= (p/2))
{
if(p%k == 0)
{
printf("Number is NOT prime");
flag++;
break;
}
k++;
}
}
if(flag != 1)
printf("Number is prime");
break;
}
case 3:
{
printf("\nEnter any integer to find if its an ODD or EVEN number: ");
scanf("%d", &N);
if(N % 2 == 0)
printf("The entered intger is EVEN");
else
printf("The entered integer is ODD");
break;
}
}
}

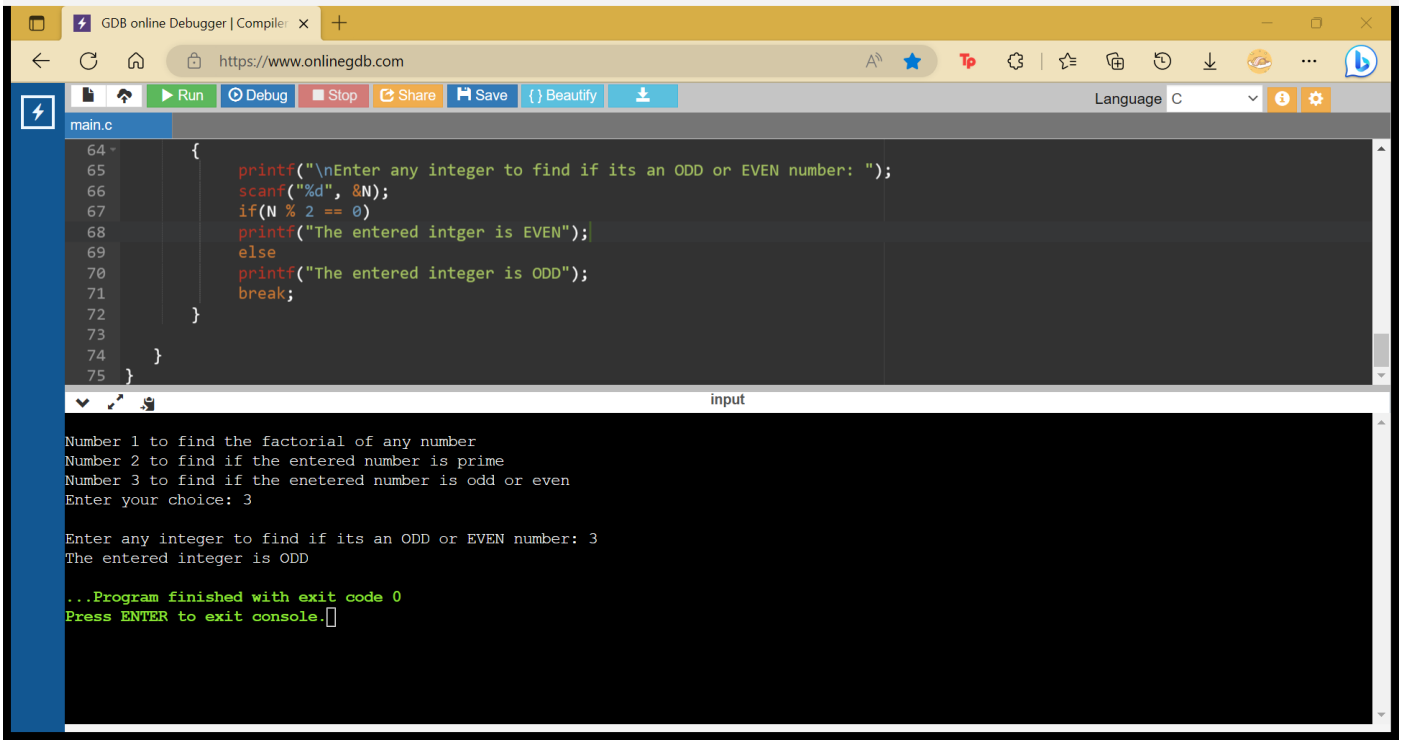

GDB online Debugger | Compiler
https://www.onlinegdb.com
Run
Debug
Stop
Share
Save
{ } Beautify
Language C
main.c
64 {
65 printf("\nEnter any integer to find if its an ODD or EVEN number: ");
66 scanf("%d", &N);
67 if(N % 2 == 0)
68 printf("The entered intger is EVEN");
69 else
70 printf("The entered integer is ODD");
71 break;
72 }
73
74 }
75 }
input
Number 1 to find the factorial of any number
Number 2 to find if the entered number is prime
Number 3 to find if the enetered number is odd or even
Enter your choice: 0
Wrong input
...Program finished with exit code 0
Press ENTER to exit console.

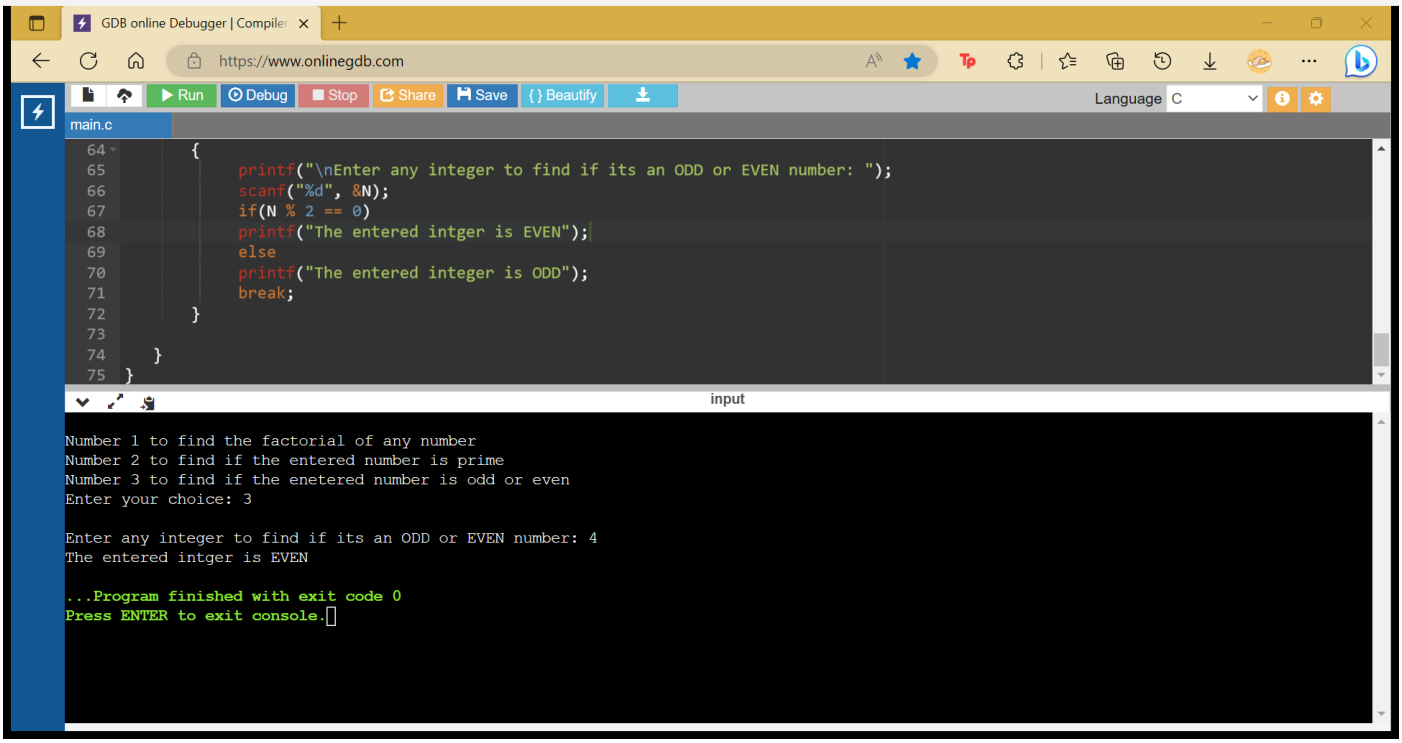

GDB online Debugger | Compiler
https://www.onlinegdb.com
Run
Debug
Stop
Share
Save
{ } Beautify
Language C
main.c
64 {
65 printf("\nEnter any integer to find if its an ODD or EVEN number: ");
66 scanf("%d", &N);
67 if(N % 2 == 0)
68 printf("The entered intger is EVEN");
69 else
70 printf("The entered integer is ODD");
71 break;
72 }
73
74 }
75 }
input
Number 1 to find the factorial of any number
Number 2 to find if the entered number is prime
Number 3 to find if the enetered number is odd or even
Enter your choice: 1
Enter any positive integer to find its FACTORIAL: 4
The Factorial of your number is 24
...Program finished with exit code 0
Press ENTER to exit console.


GDB online Debugger | Compiler
https://www.onlinegdb.com
Run
Debug
Stop
Share
Save
{ } Beautify
Language C
main.c
{
printf("\nEnter any integer to find if its an ODD or EVEN number: ");
scanf("%d", &N);
if(N % 2 == 0)
printf("The entered intger is EVEN");
else
printf("The entered integer is ODD");
break;
}
}
}
input
Number 1 to find the factorial of any number
Number 2 to find if the entered number is prime
Number 3 to find if the enetered number is odd or even
Enter your choice: 1
Enter any positive integer to find its FACTORIAL: -2
Please enter a postive integer
...Program finished with exit code 0
Press ENTER to exit console.


GDB online Debugger | Compiler
https://www.onlinegdb.com
Run
Debug
Stop
Share
Save
{ } Beautify
Language C
main.c
{
printf("\nEnter any integer to find if its an ODD or EVEN number: ");
scanf("%d", &N);
if(N % 2 == 0)
printf("The entered intger is EVEN");
else
printf("The entered integer is ODD");
break;
}
}
}
input
Number 1 to find the factorial of any number
Number 2 to find if the entered number is prime
Number 3 to find if the enetered number is odd or even
Enter your choice: 2
Enter any integer to find if it is a PRIME number: 3
Number is prime
...Program finished with exit code 0
Press ENTER to exit console.


GDB online Debugger | Compiler
https://www.onlinegdb.com
Run
Debug
Stop
Share
Save
{ } Beautify
Language C
main.c
{
printf("\nEnter any integer to find if its an ODD or EVEN number: ");
scanf("%d", &N);
if(N % 2 == 0)
printf("The entered intger is EVEN");
else
printf("The entered integer is ODD");
break;
}
}
}
input
Number 1 to find the factorial of any number
Number 2 to find if the entered number is prime
Number 3 to find if the enetered number is odd or even
Enter your choice: 2
Enter any integer to find if it is a PRIME number: 4
Number is NOT prime
...Program finished with exit code 0
Press ENTER to exit console.


GDB online Debugger | Compiler
https://www.onlinegdb.com
Run
Debug
Stop
Share
Save
{ } Beautify
Language C
main.c
{
printf("\nEnter any integer to find if its an ODD or EVEN number: ");
scanf("%d", &N);
if(N % 2 == 0)
printf("The entered intger is EVEN");
else
printf("The entered integer is ODD");
break;
}
}
}
input
Number 1 to find the factorial of any number
Number 2 to find if the entered number is prime
Number 3 to find if the enetered number is odd or even
Enter your choice: 3
Enter any integer to find if its an ODD or EVEN number: 3
The entered integer is ODD
...Program finished with exit code 0
Press ENTER to exit console.


GDB online Debugger | Compiler
https://www.onlinegdb.com
Run
Debug
Stop
Share
Save
{ } Beautify
Language C
main.c
{
printf("\nEnter any integer to find if its an ODD or EVEN number: ");
scanf("%d", &N);
if(N % 2 == 0)
printf("The entered intger is EVEN");
else
printf("The entered integer is ODD");
break;
}
}
}
input
Number 1 to find the factorial of any number
Number 2 to find if the entered number is prime
Number 3 to find if the enetered number is odd or even
Enter your choice: 3
Enter any integer to find if its an ODD or EVEN number: 4
The entered intger is EVEN
...Program finished with exit code 0
Press ENTER to exit console.