NAME: REYA JESLYN SAHAYA SAMUEL
ROLL NO.: 2210110505

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

```
student@HP-280-G3-MT: ~/Desktop
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.c  Untitled Folder
student@HP-280-G3-MT:~/Desktop$ gcc q1.c
student@HP-280-G3-MT:~/Desktop$ ./a.out
12345
12345
12345
12345
12345
student@HP-280-G3-MT:~/Desktop$
```

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

1

1 2

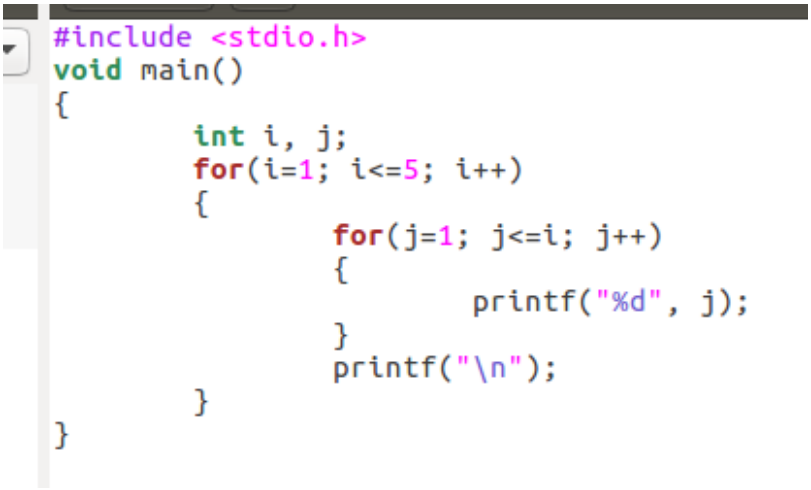
1 2 3

1 2 3 4

1 2 3 4 5

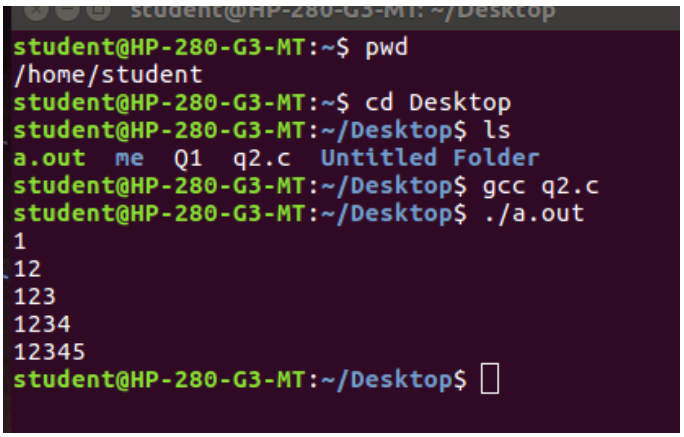
CODE

```
#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$
```

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

1

2 1

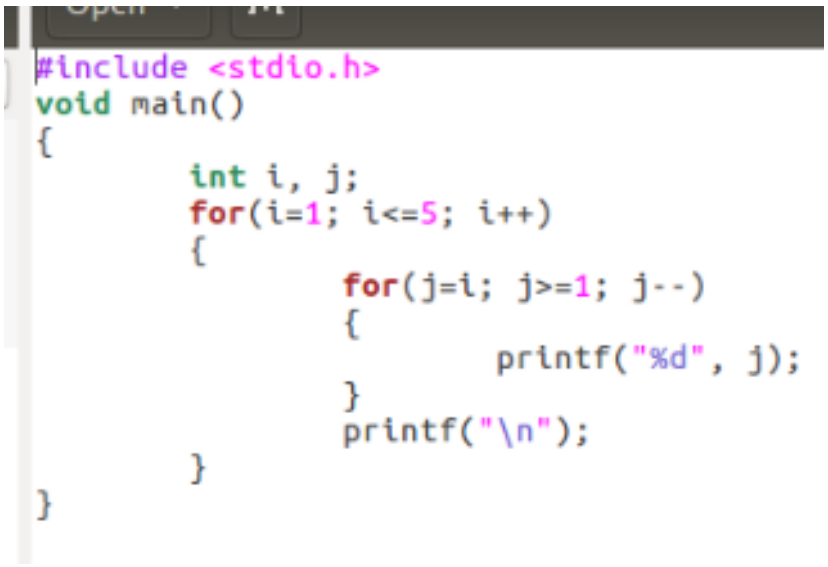
3 2 1

4 3 2 1

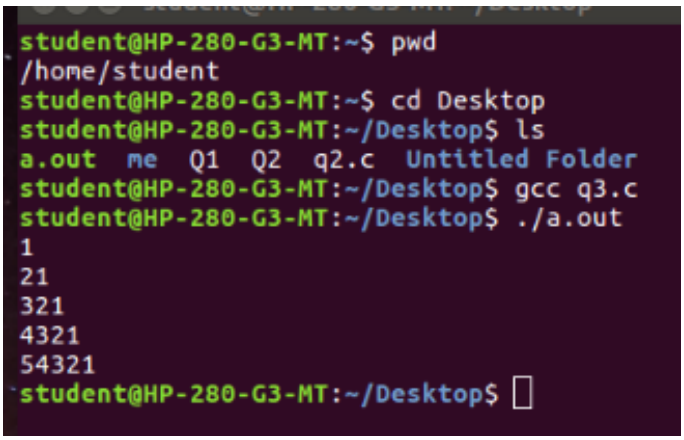
5 4 3 2 1

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");

}

}
```



SS of the OUTPUT



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

1

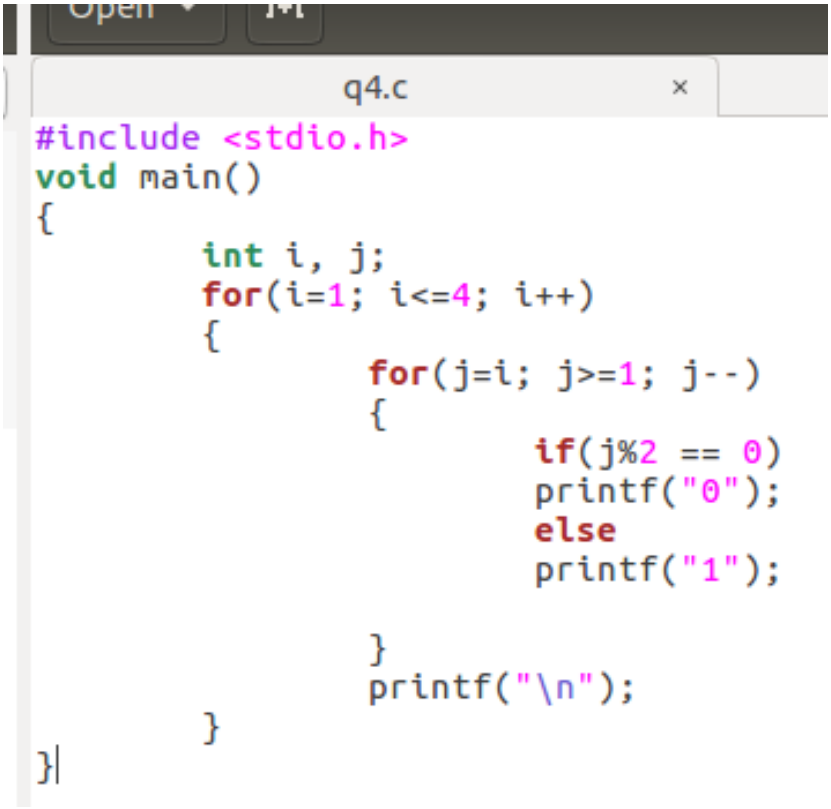
0 1

1 0 1

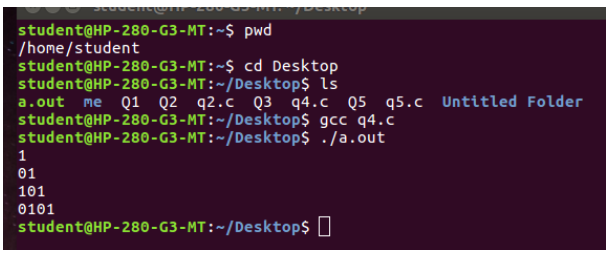
0 1 0 1

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



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

1

1 0

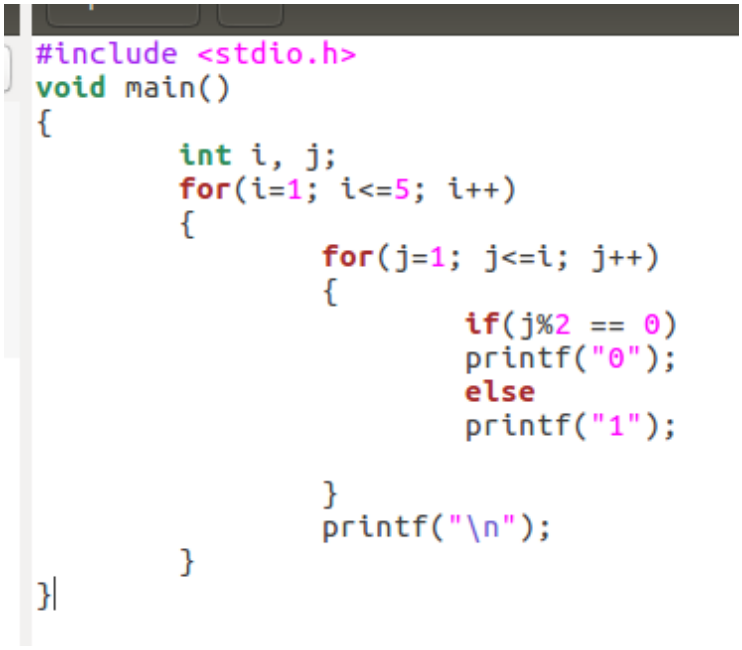
1 0 1

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

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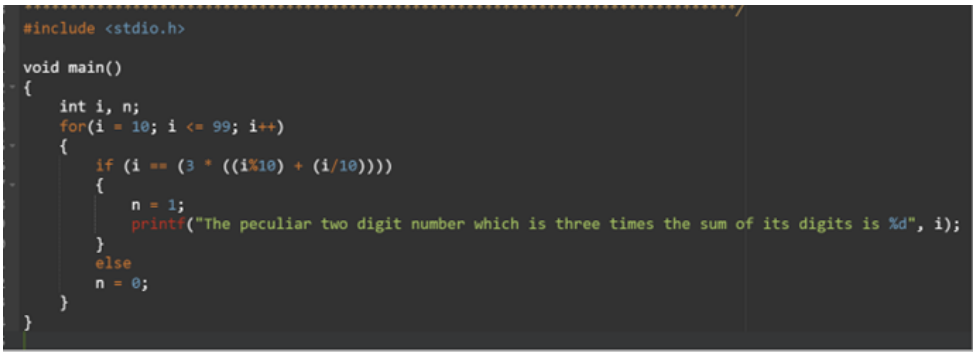
6. Write a C program to find a peculiar 2-digit number which is three times the sum of its digits.

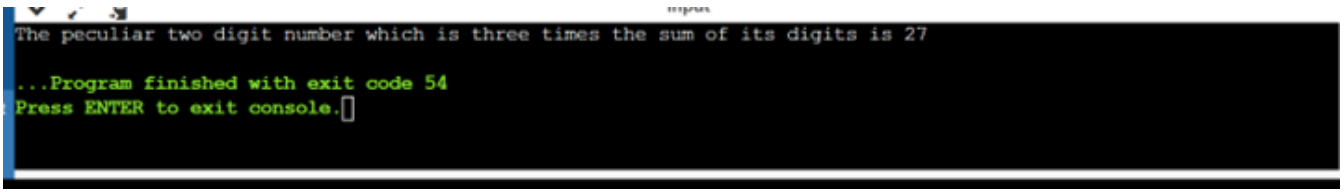
CODE



```c
#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;
    }
}
```

SS of the OUTPUT



```
The peculiar two digit number which is three times the sum of its digits is 27

...Program finished with exit code 54
Press ENTER to exit console.
```

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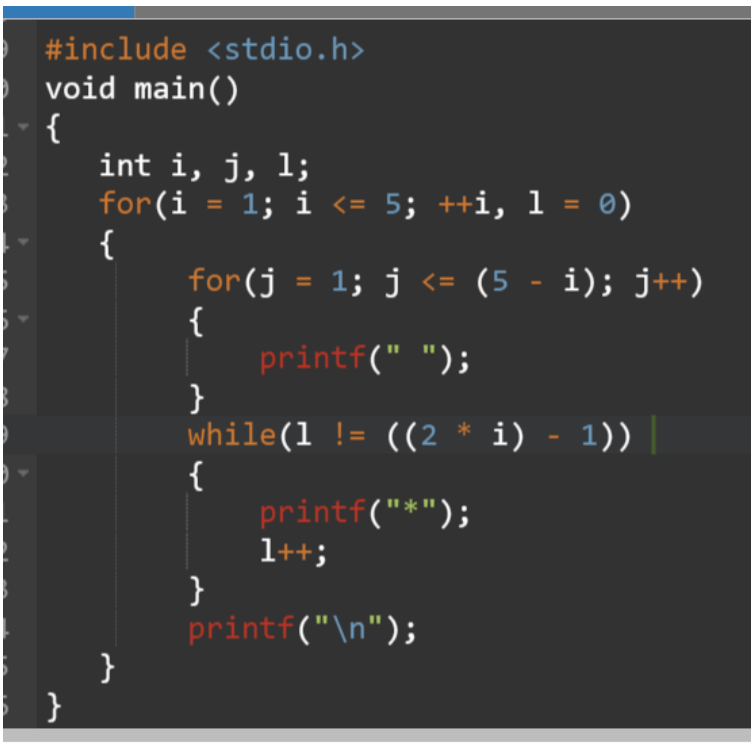
7. Write a program to print the following pattern on the output screen.

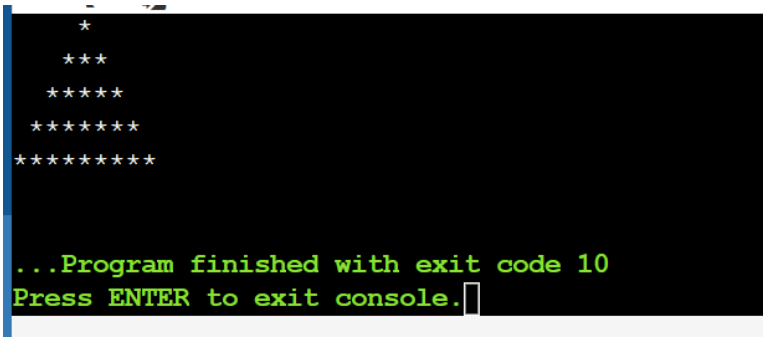
```
    *
   ***
  *****
 *******
*********
```

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



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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");
  }
```

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```
}
```

SS of the OUTPUT

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9. Write a program to print the following pattern

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

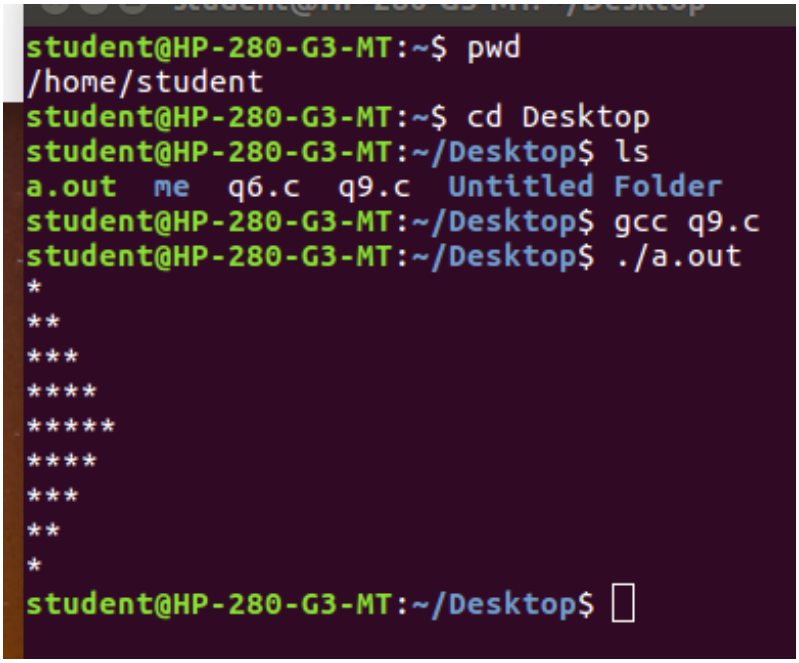
CODE

```
#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++)
{
```

```
#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");
        }
}
```

```
printf("*");

}

printf("\n");

}

}
```

SS of the OUTPUT



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10. Write a program to print the following pattern

1

2 1 2

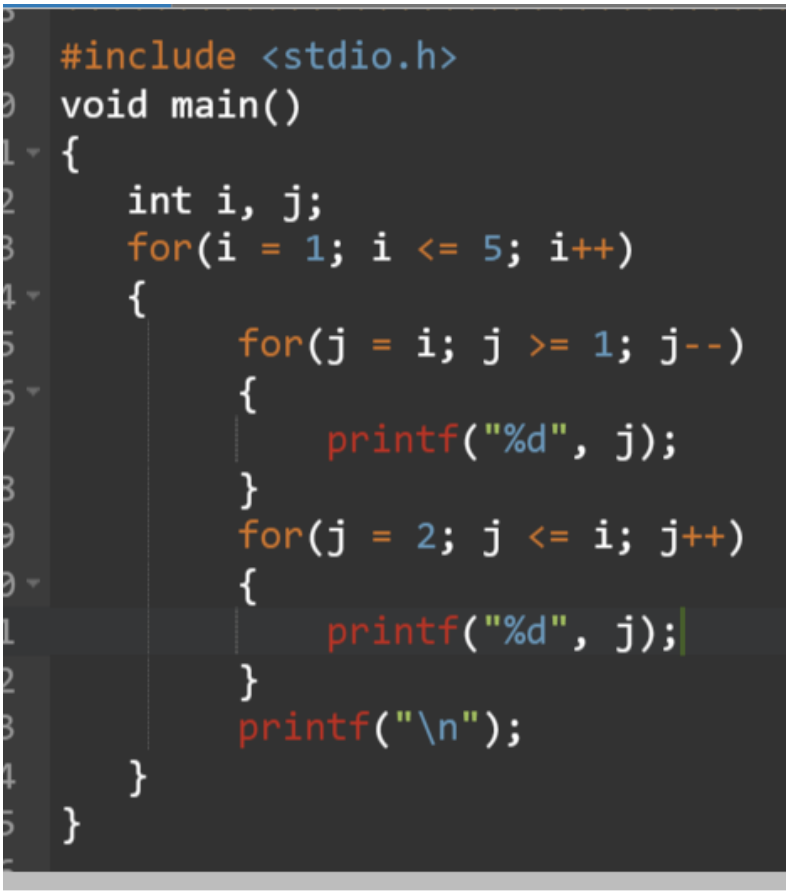
3 2 1 2 3

4 3 2 1 2 3 4

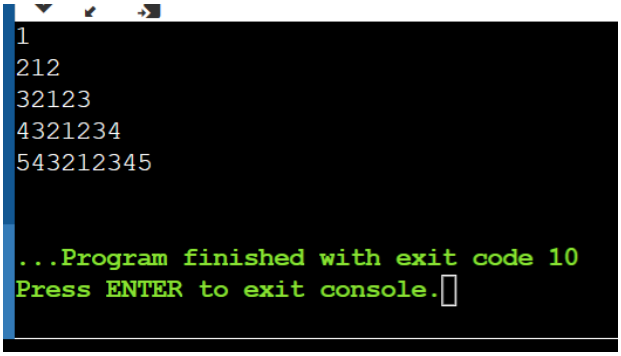
5 4 3 2 1 2 3 4 5

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



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11. Write a menu-driven program (using switch control statements) 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;
    }

  }
}
```

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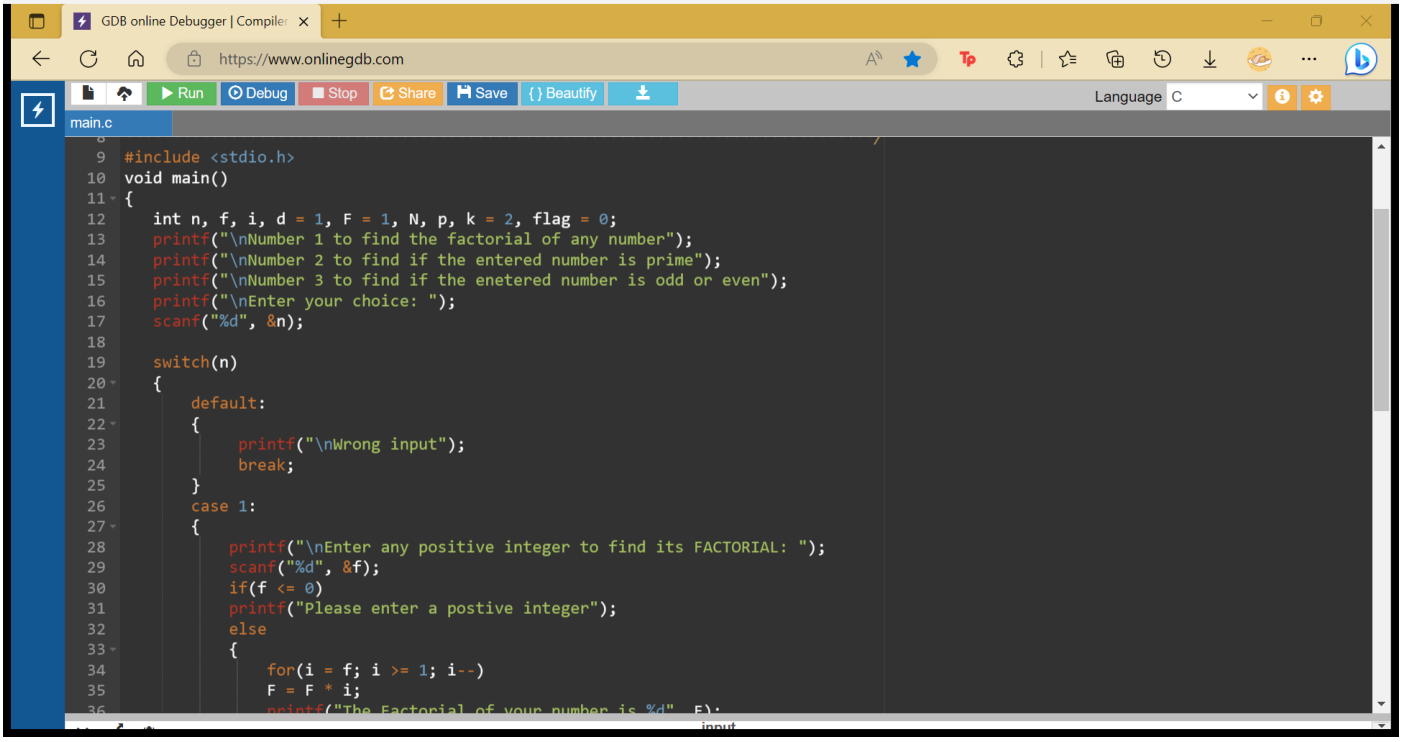

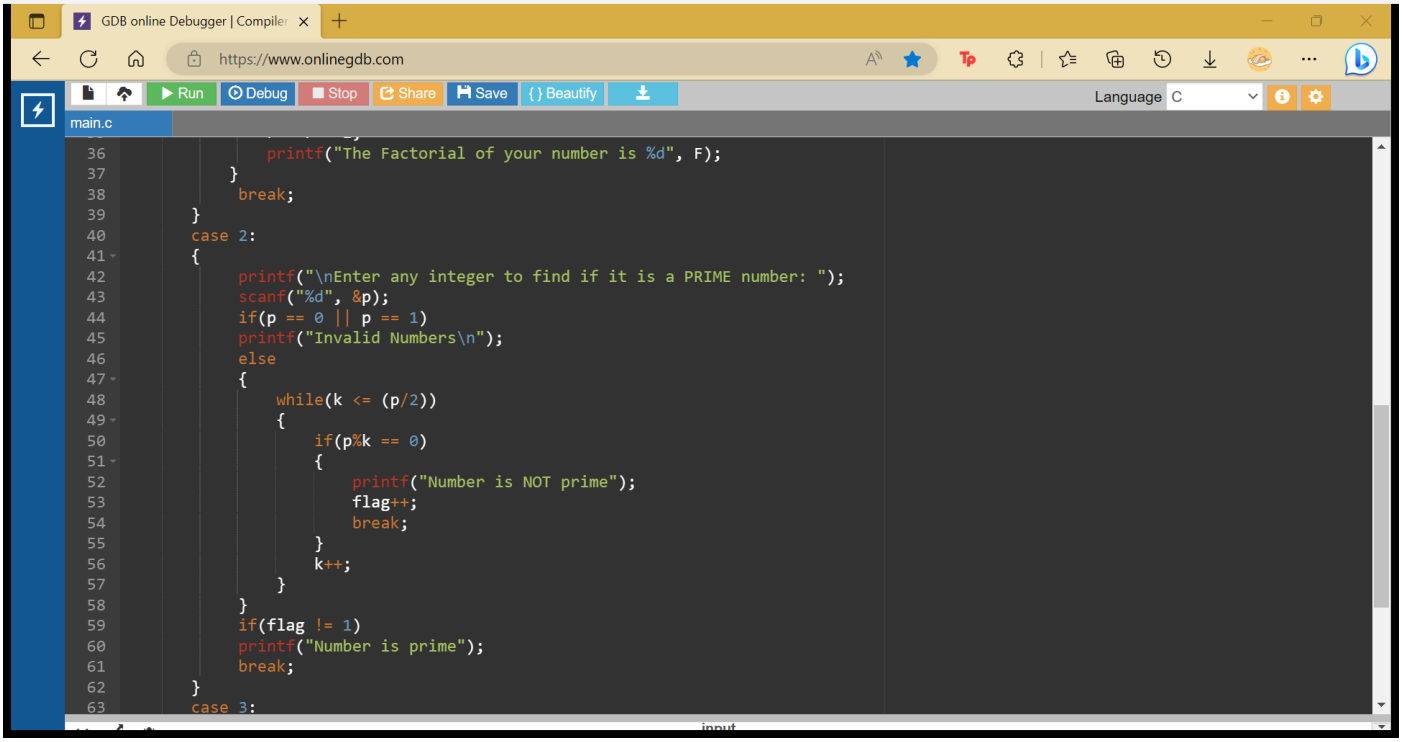

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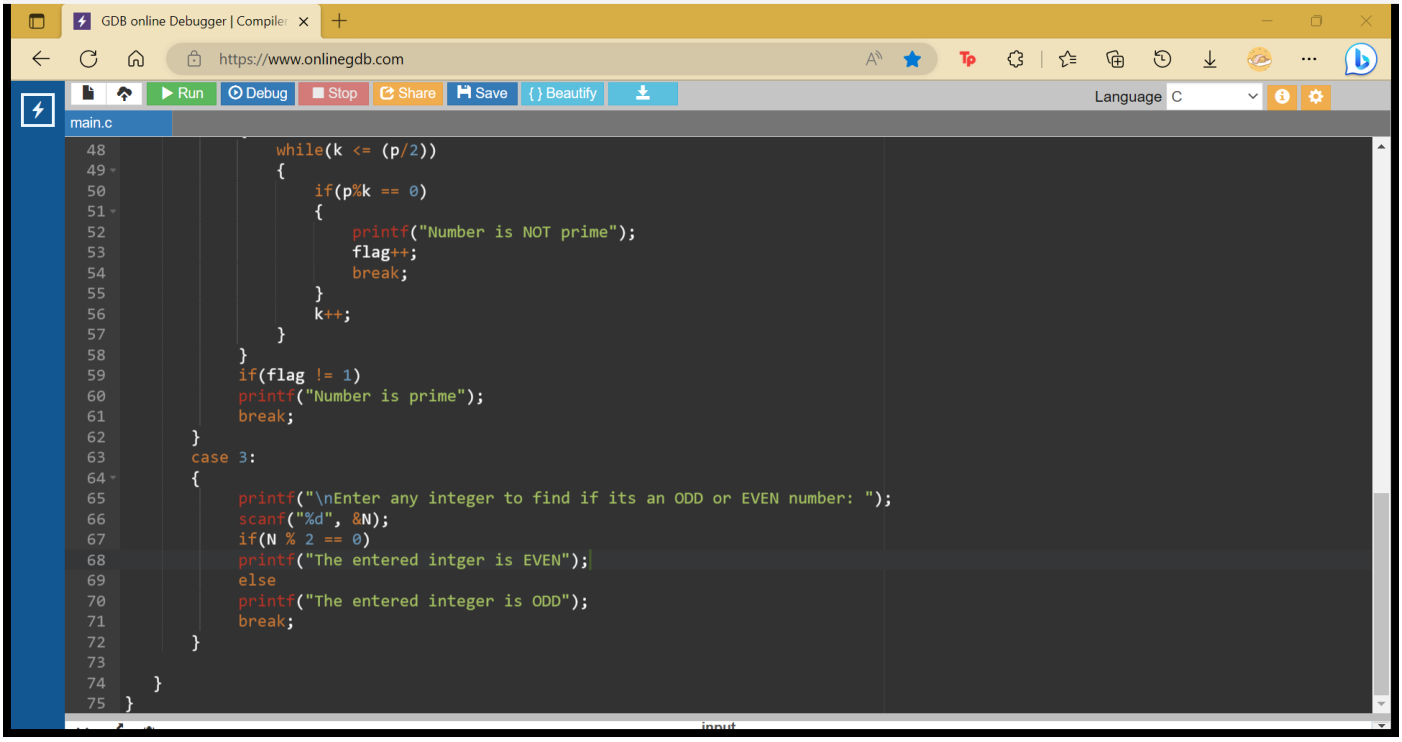

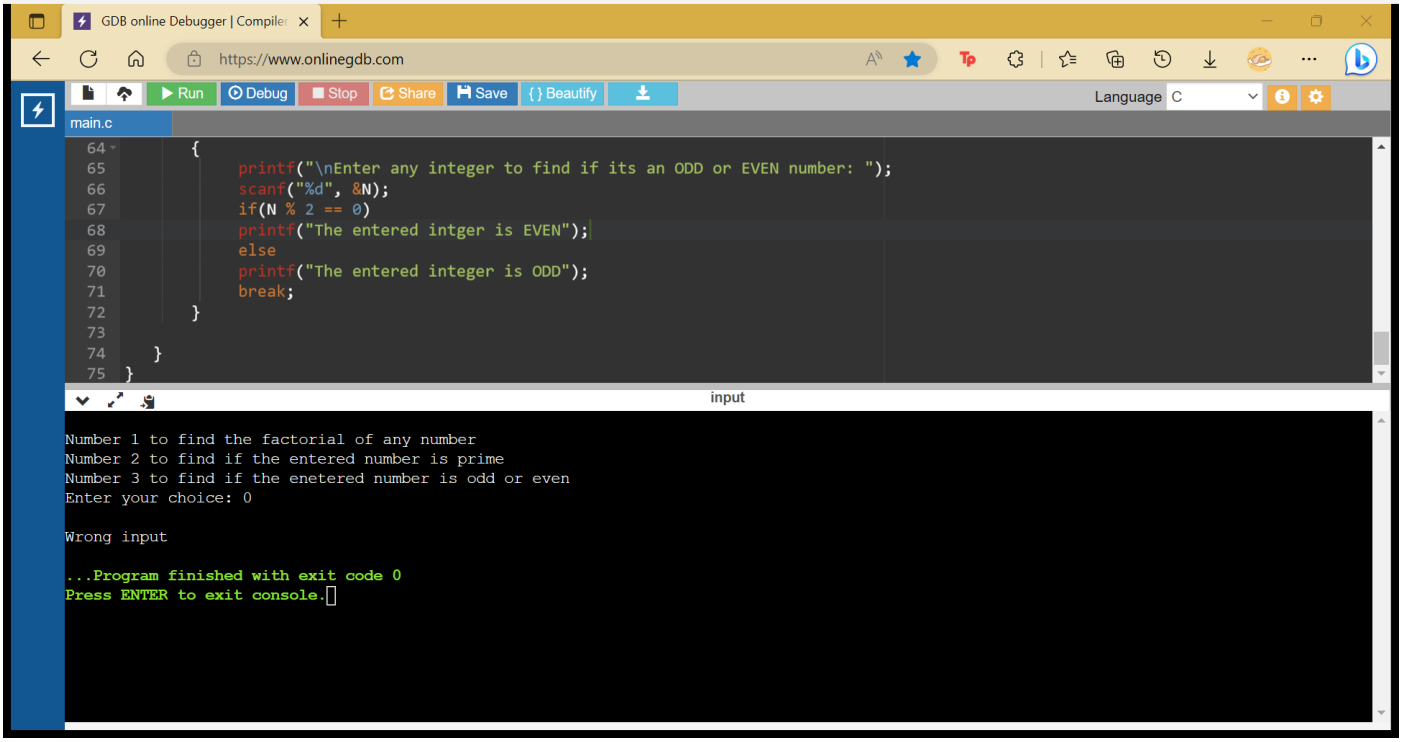

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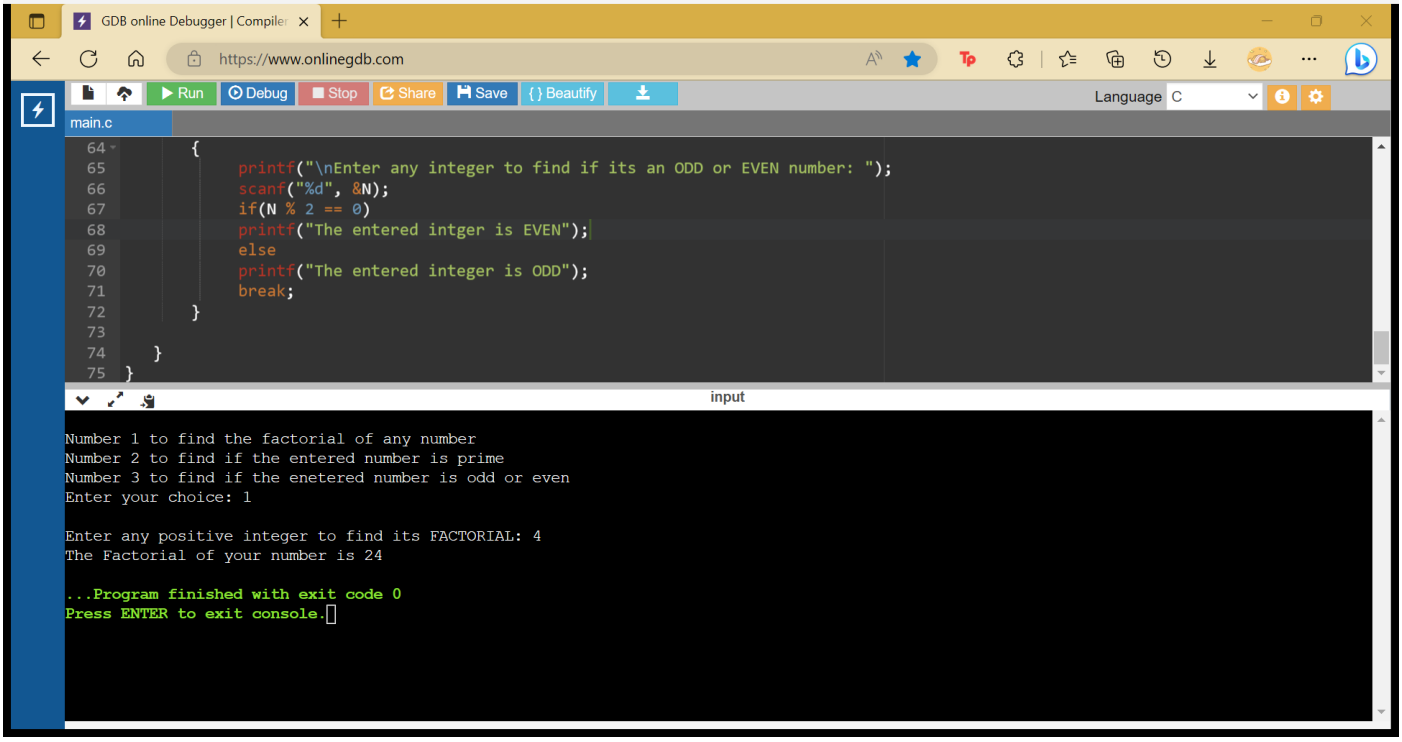

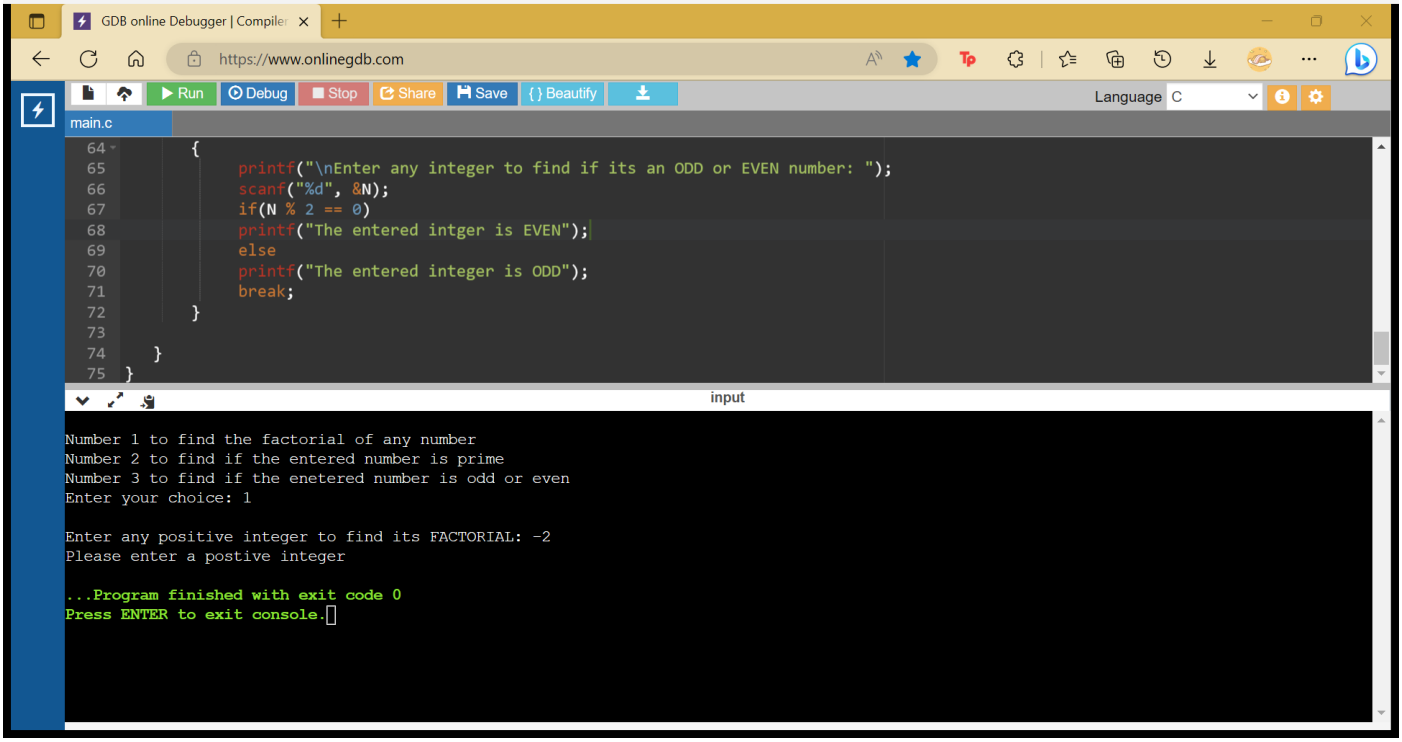

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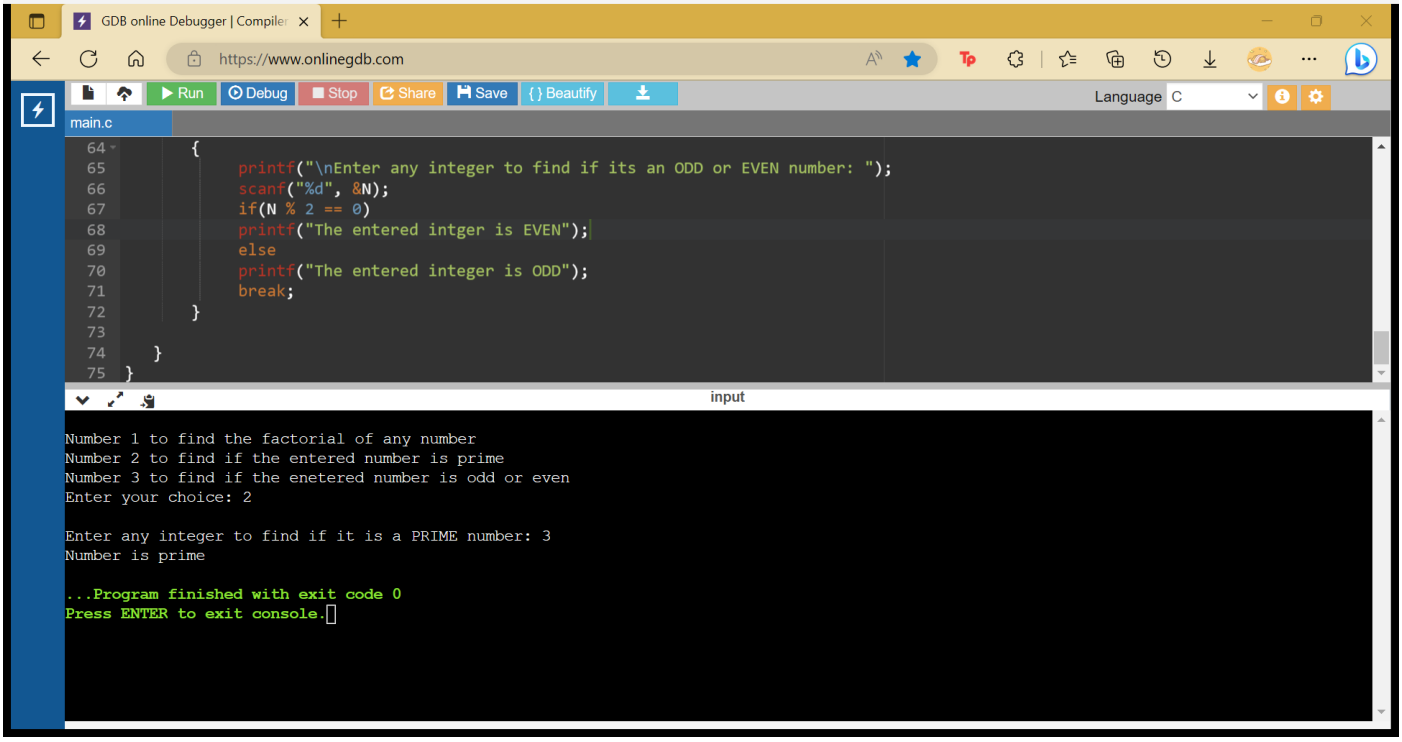

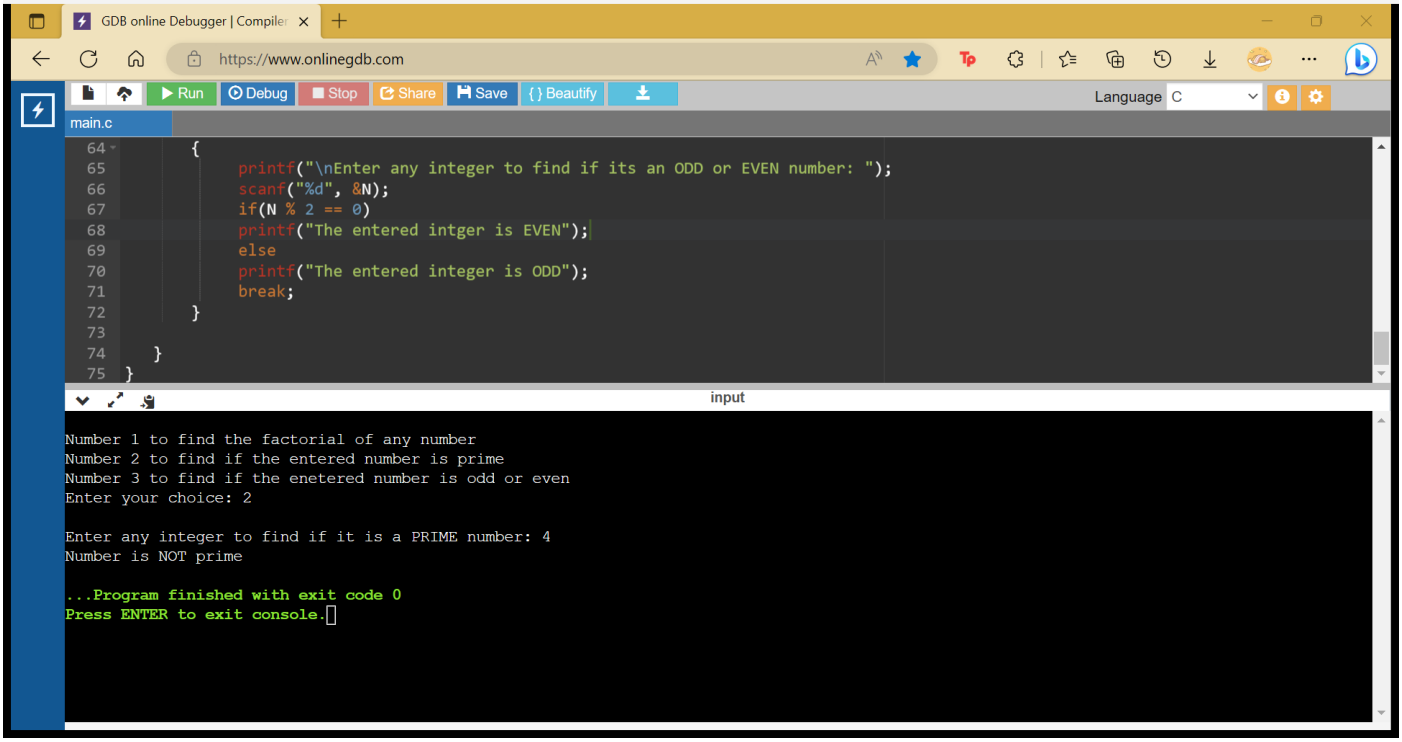

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