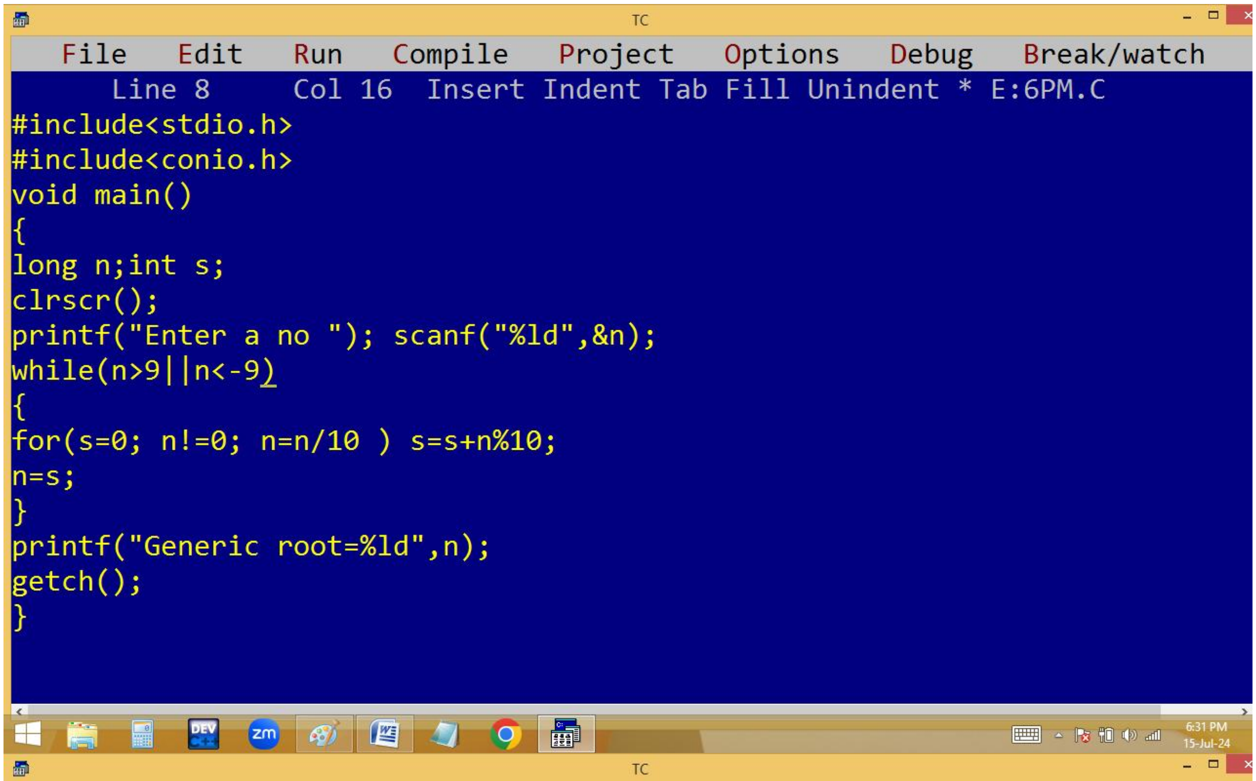
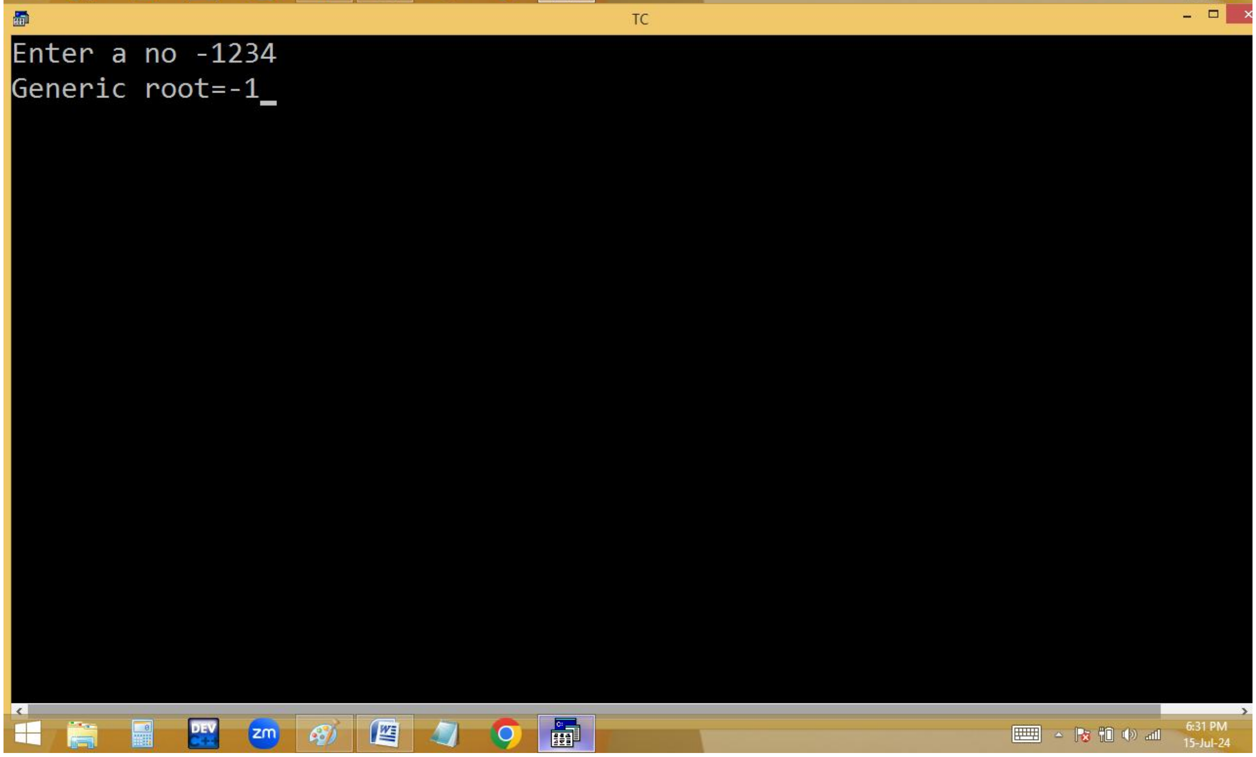
Finding generic root of given no.

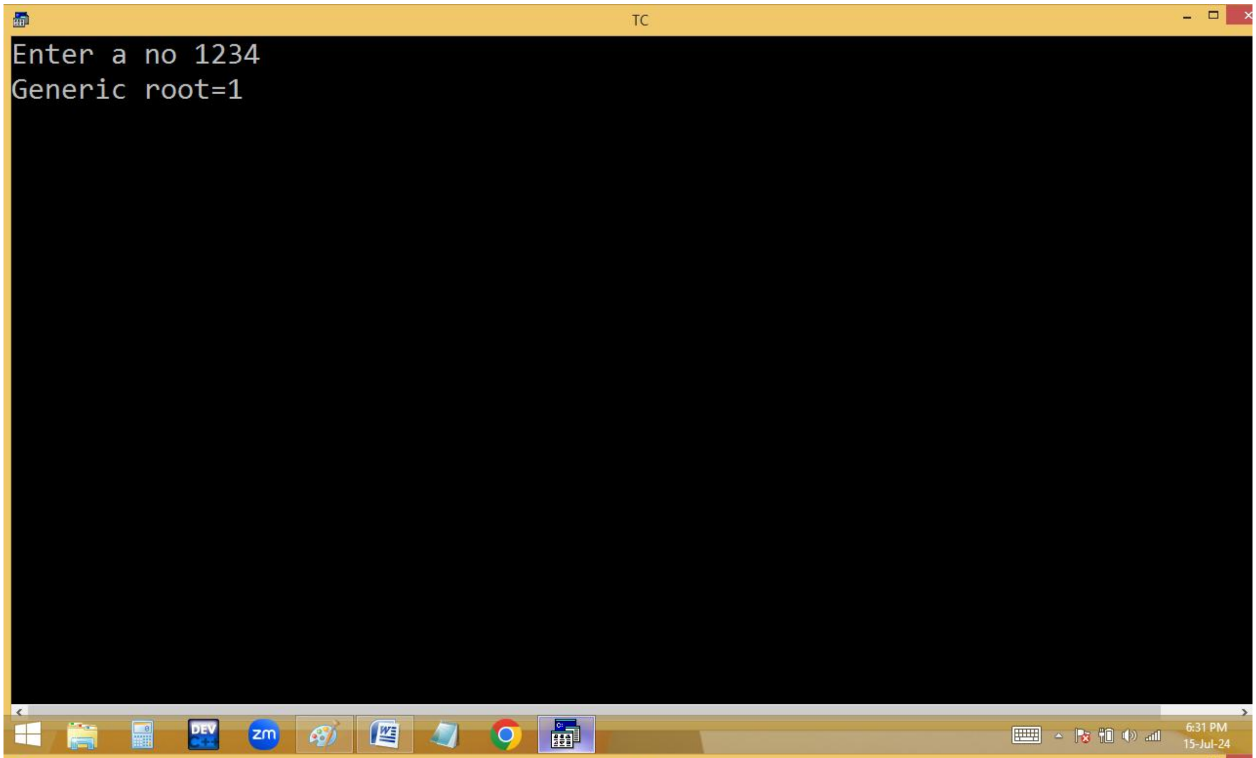
5677 = 5+6+7+7 = 25 → 2+5 = 7



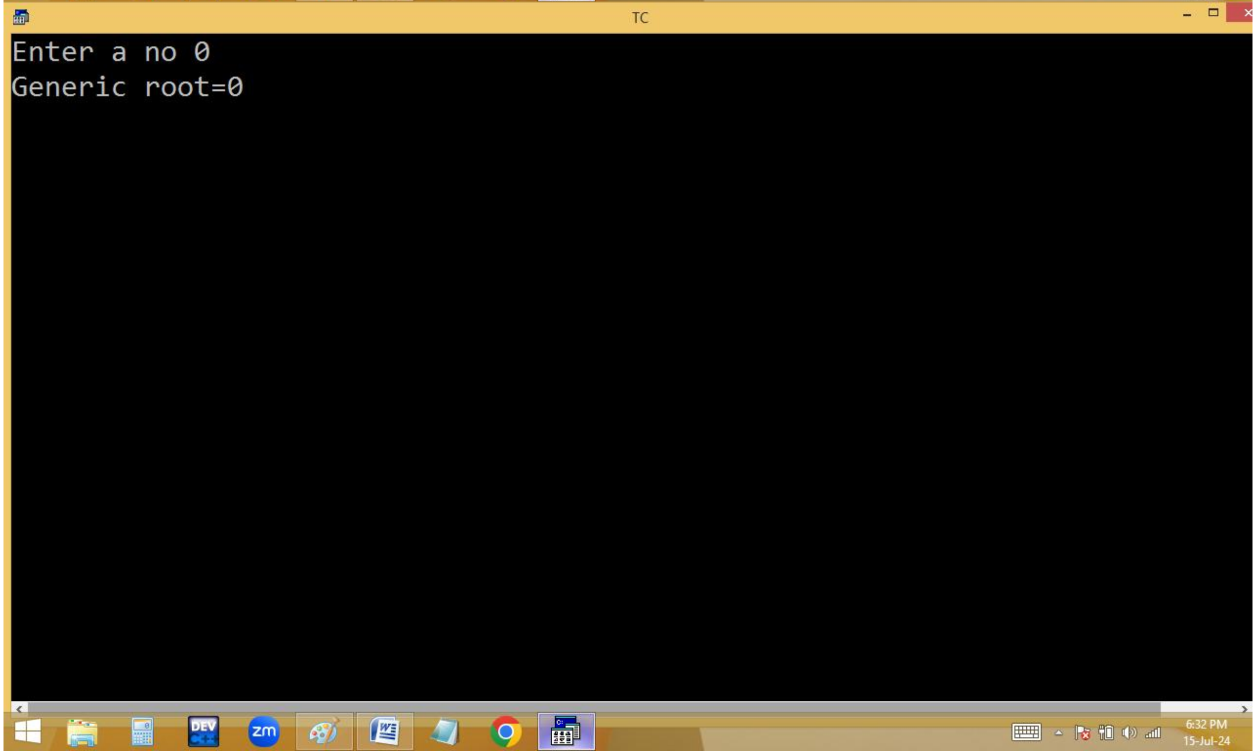
```
#include<stdio.h>
#include<conio.h>
void main()
{
long n;int s;
clrscr();
printf("Enter a no "); scanf("%ld",&n);
while(n>9||n<-9)
{
for(s=0; n!=0; n=n/10 ) s=s+n%10;
n=s;
}
printf("Generic root=%ld",n);
getch();
}
```



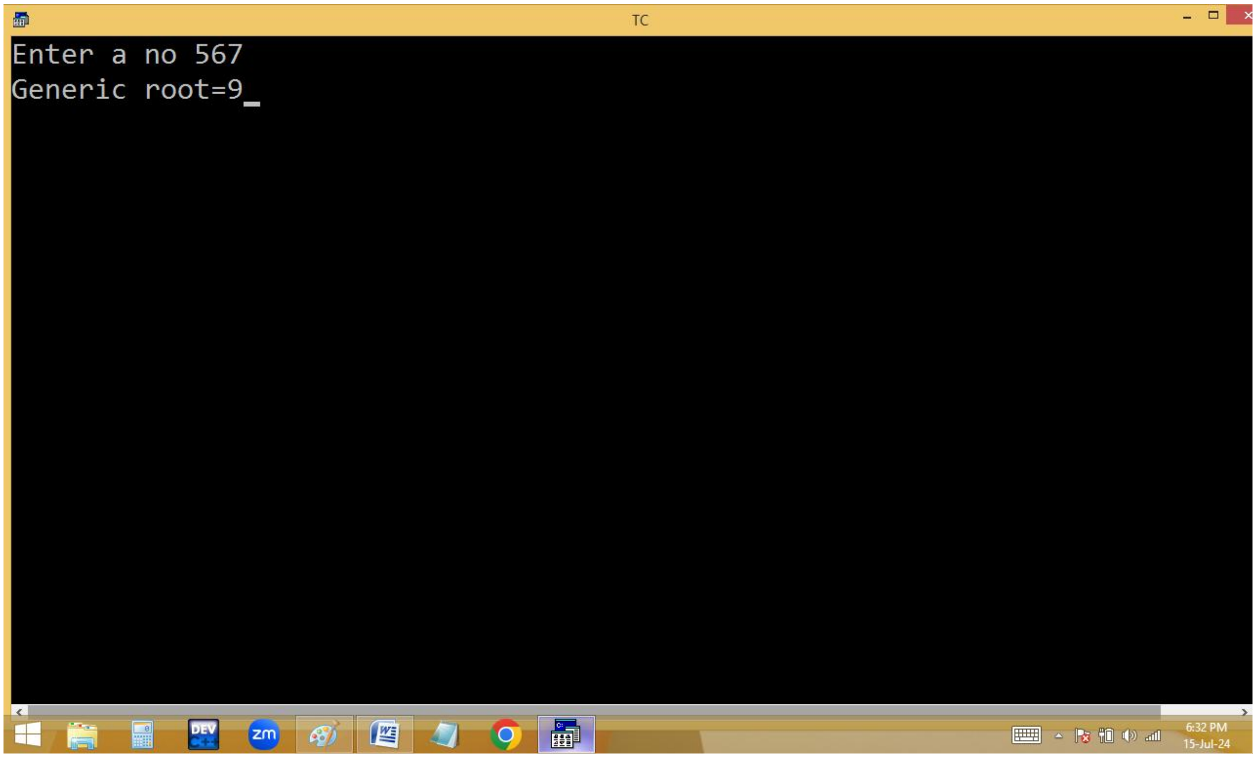
```
Enter a no -1234
Generic root=-1
```



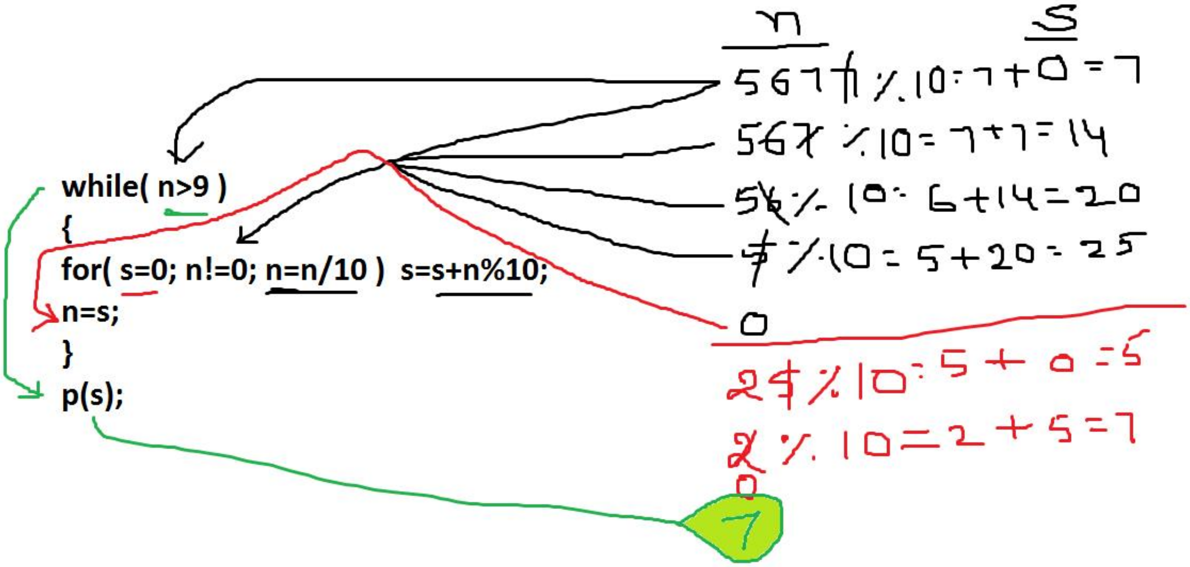
```
Enter a no 1234
Generic root=1
```



```
Enter a no 0
Generic root=0
```



```
Enter a no 567
Generic root=9_
```

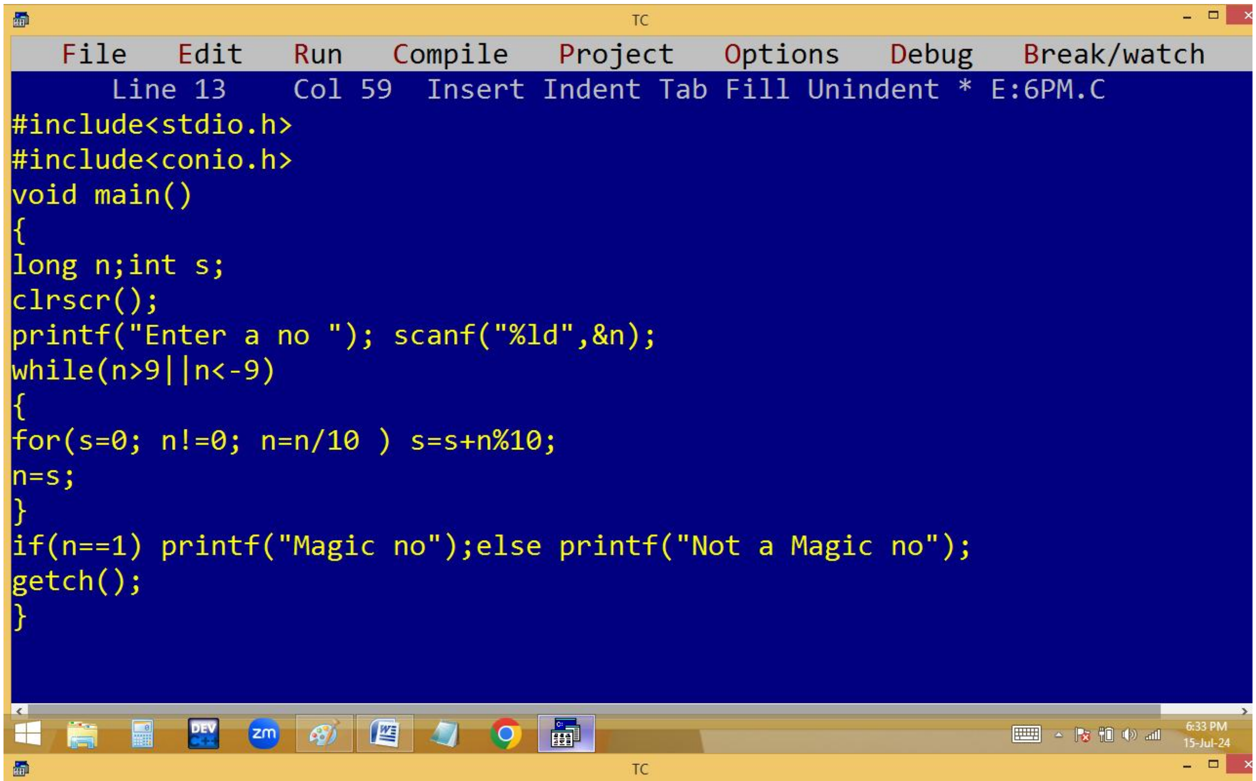


```
while( n>9 )
{
for( s=0; n!=0; n=n/10 )  s=s+n%10;
n=s;
}
p(s);
```

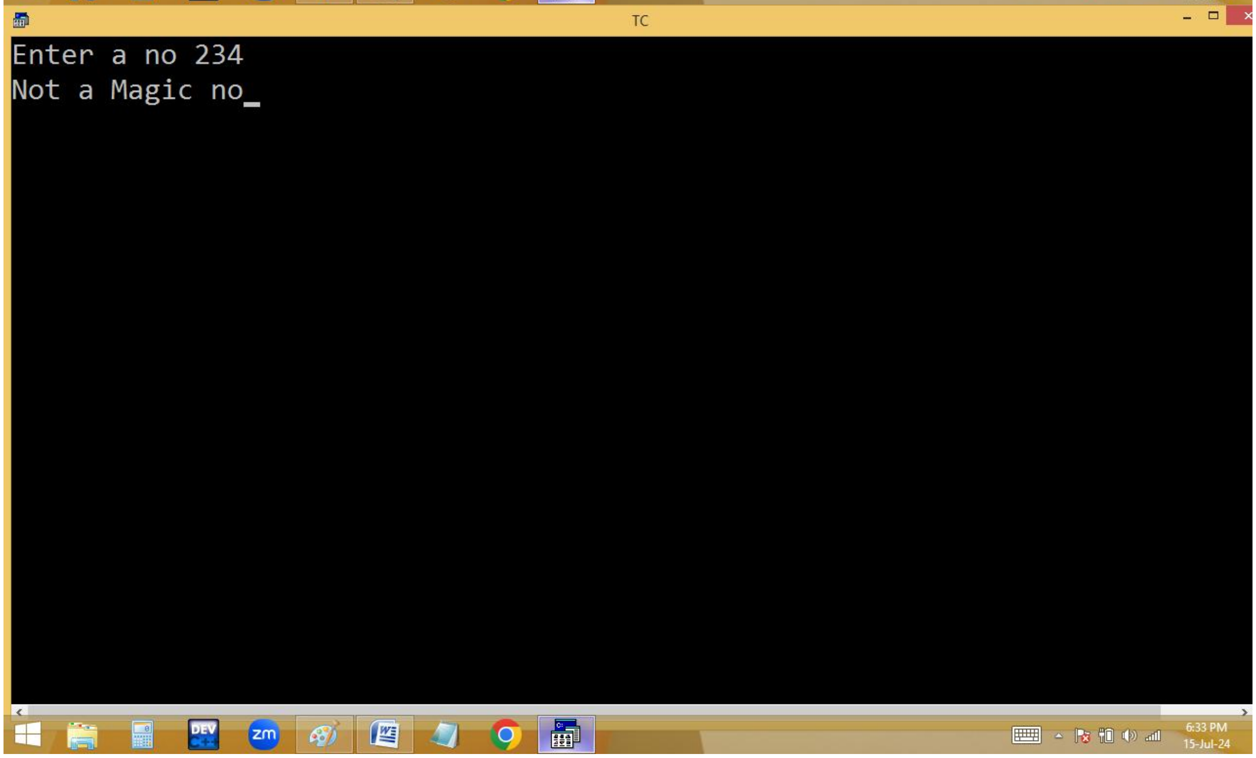
Finding magic no or not

If generic root is 1 it is a magic no.

1234 → 1+2+3+4 = 10 → 1+0 =



```c
#include<stdio.h>
#include<conio.h>
void main()
{
long n;int s;
clrscr();
printf("Enter a no "); scanf("%ld",&n);
while(n>9||n<-9)
{
for(s=0; n!=0; n=n/10 ) s=s+n%10;
n=s;
}
if(n==1) printf("Magic no");else printf("Not a Magic no");
getch();
}
```



```
Enter a no 234
Not a Magic no_
```

Finding strong no or not?

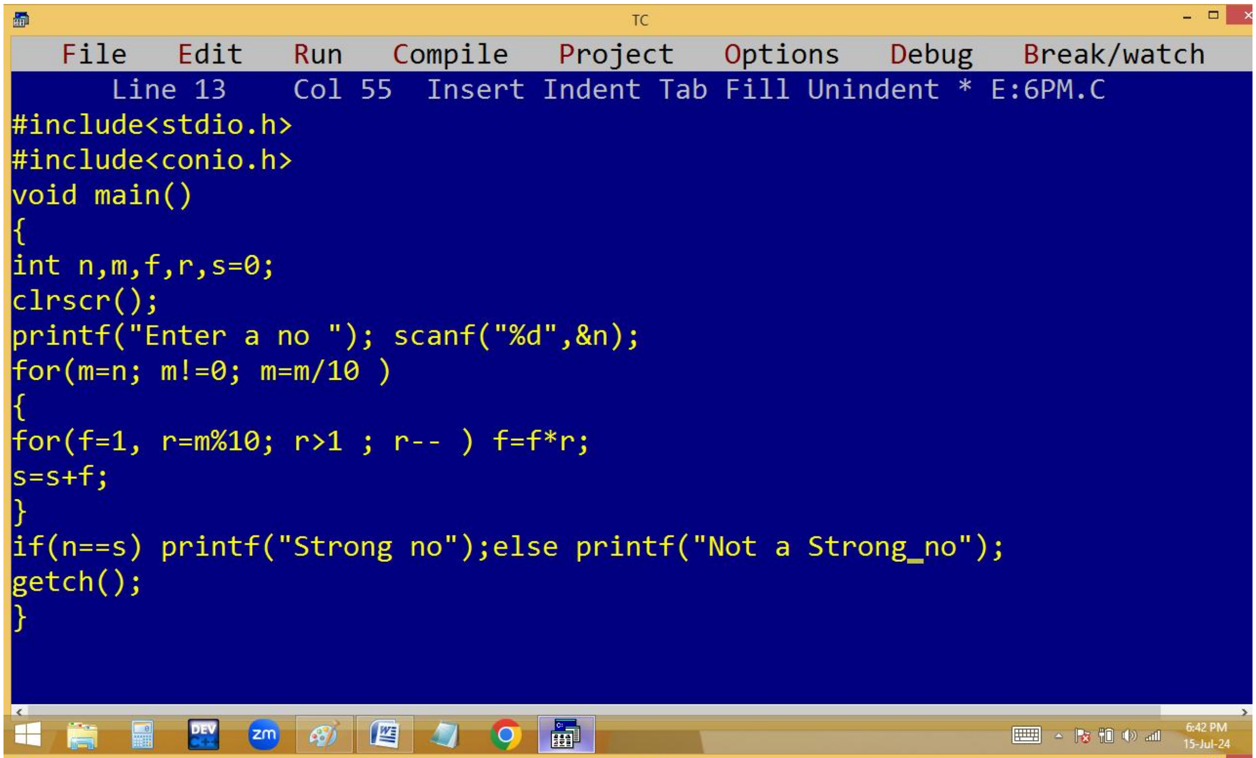
Sum of factorial of each digit is equal to given no.

1 factorial 1

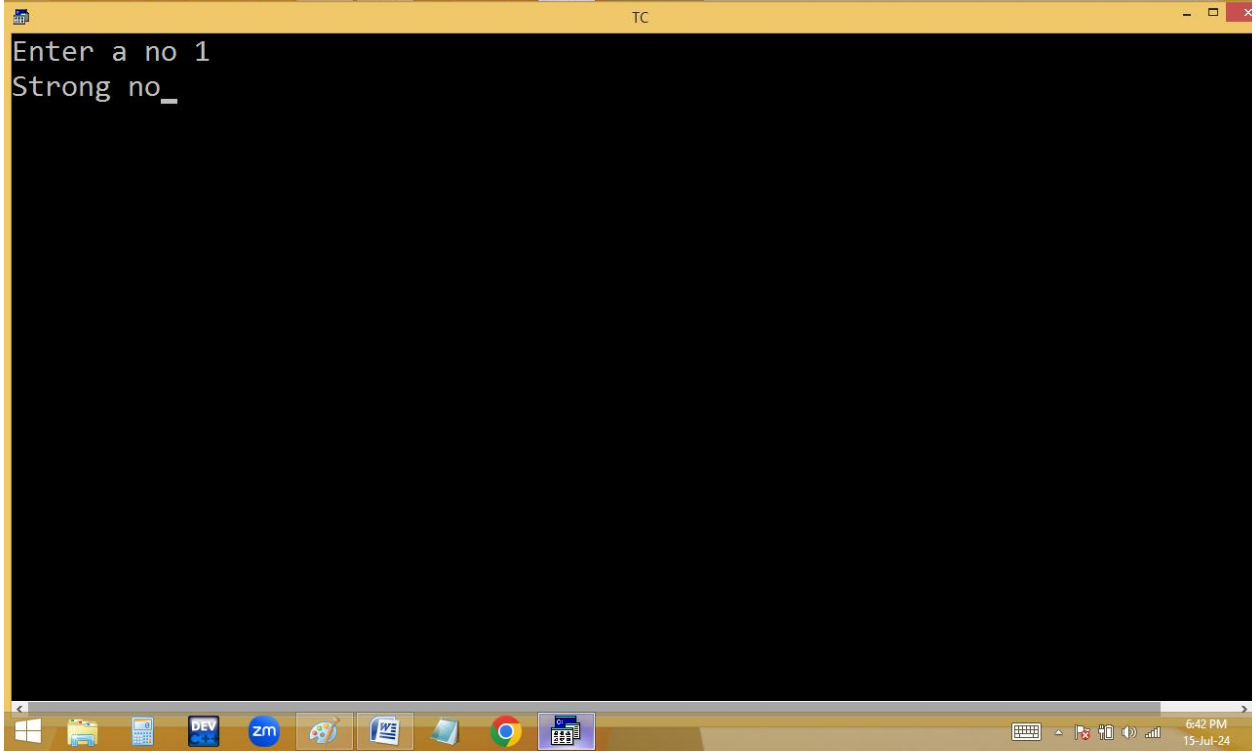
2 factorial 2

3 factorial 6 ← not a strong no

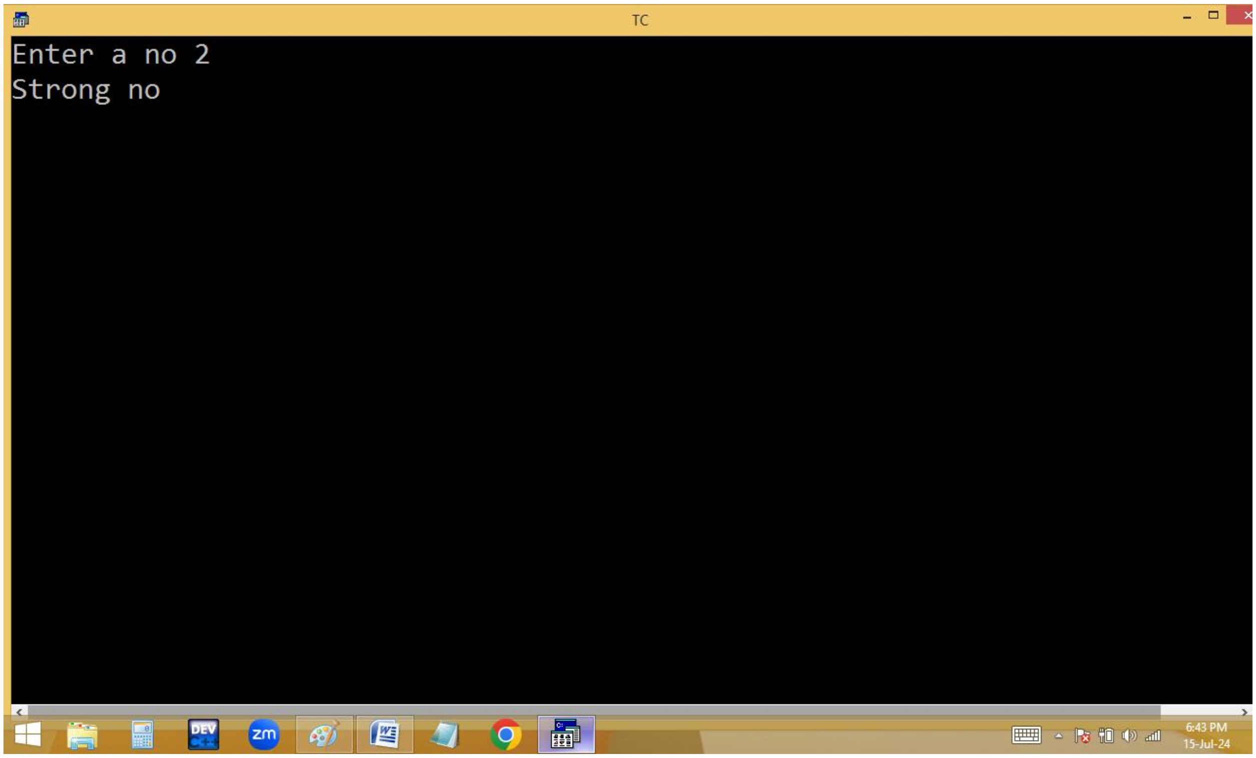
145 →1! + 4! + 5! = 1 + 24 + 120 = 145


TC
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 55 Insert Indent Tab Fill Unindent * E:6PM.C
6:42 PM
15-Jul-24

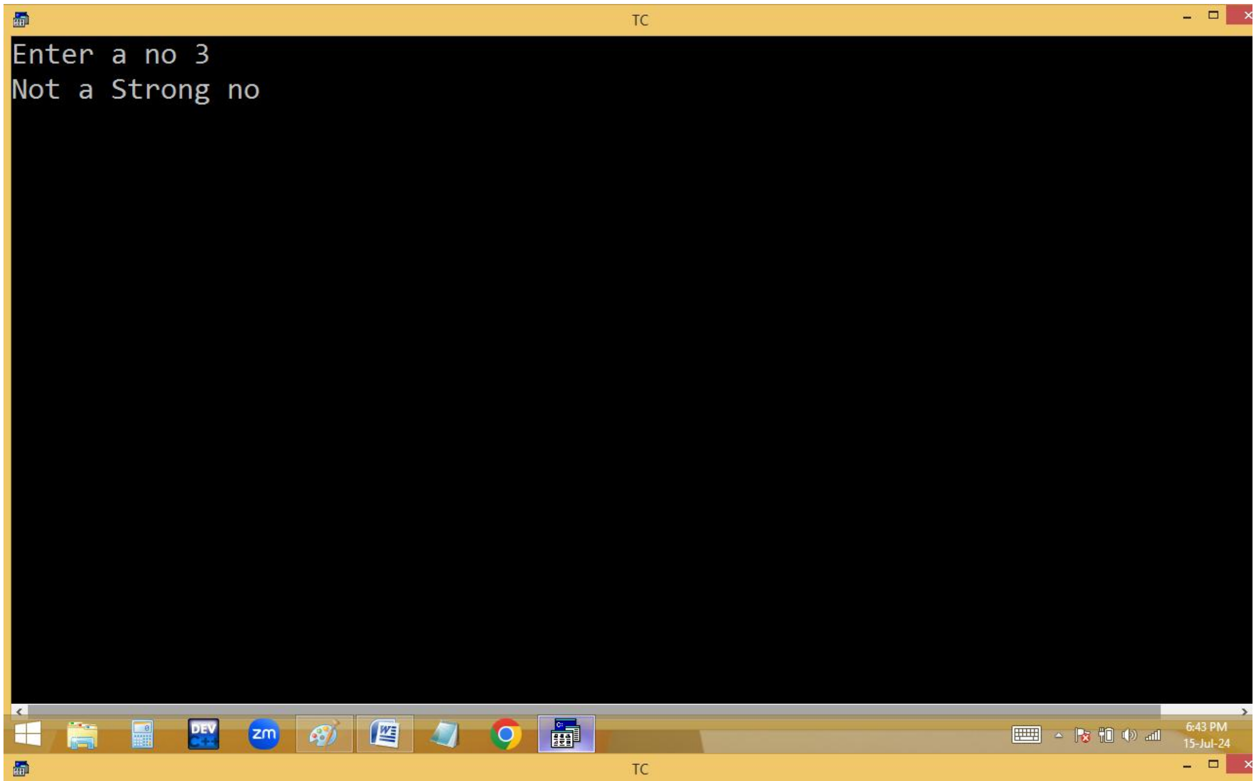
```
#include<stdio.h>
#include<conio.h>
void main()
{
int n,m,f,r,s=0;
clrscr();
printf("Enter a no "); scanf("%d",&n);
for(m=n; m!=0; m=m/10 )
{
for(f=1, r=m%10; r>1 ; r-- ) f=f*r;
s=s+f;
}
if(n==s) printf("Strong no");else printf("Not a Strong no");
getch();
}
```



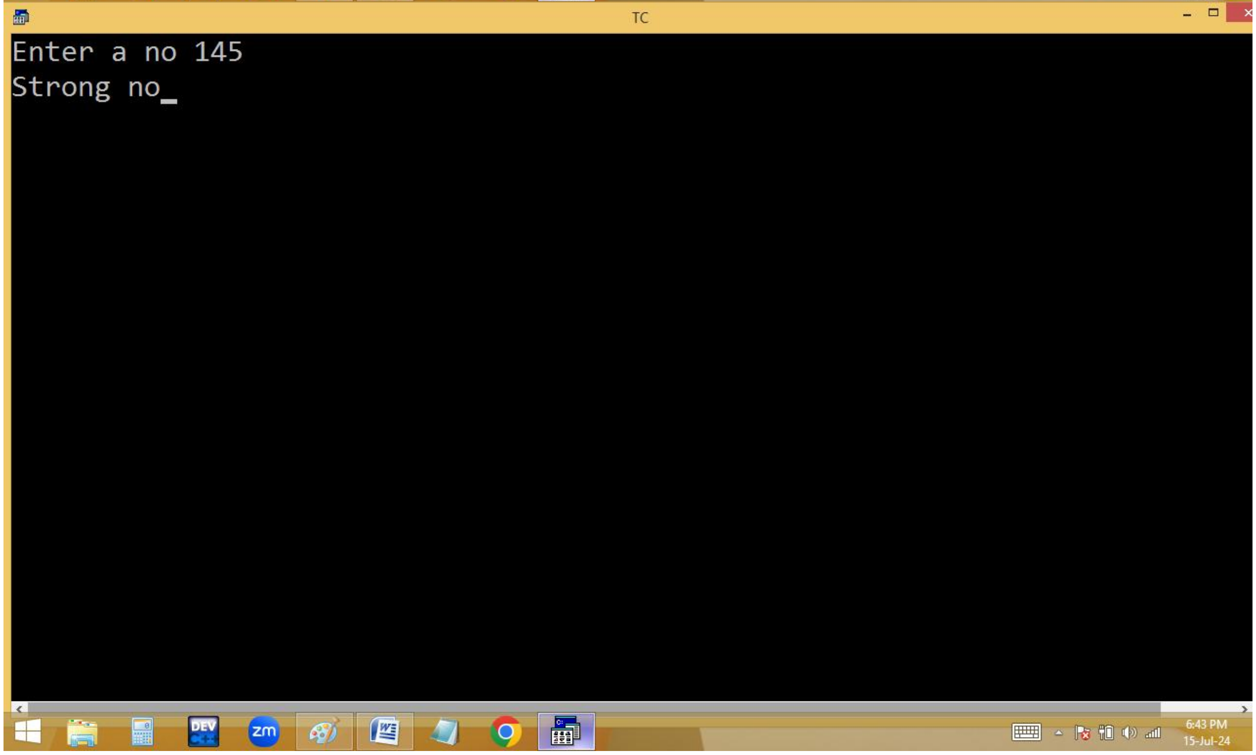
```
Enter a no 1
Strong no
```



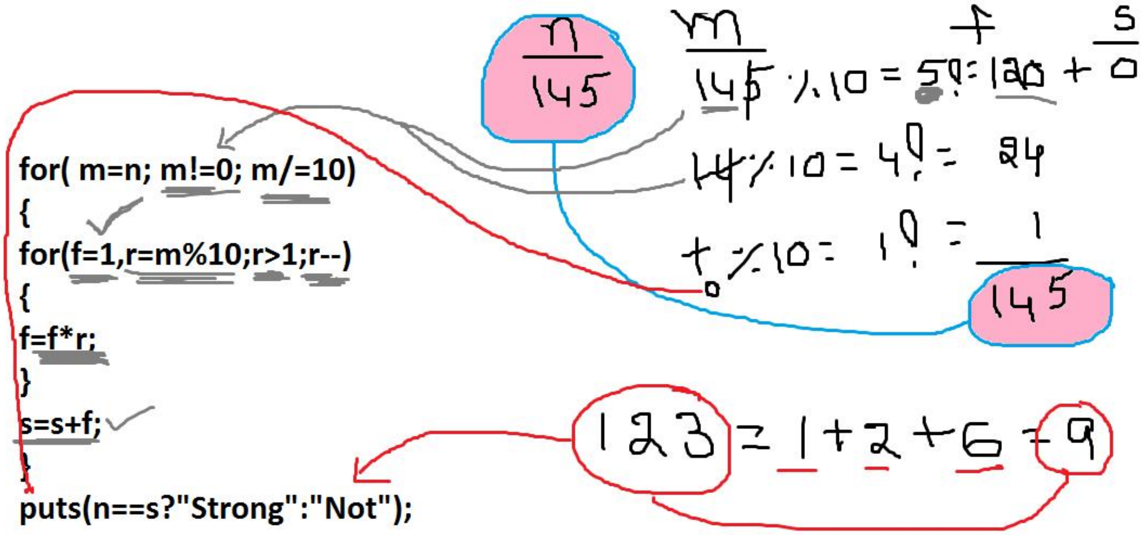
```
Enter a no 2
Strong no
```



```
Enter a no 3
Not a Strong no
```



```
Enter a no 145
Strong no_
```

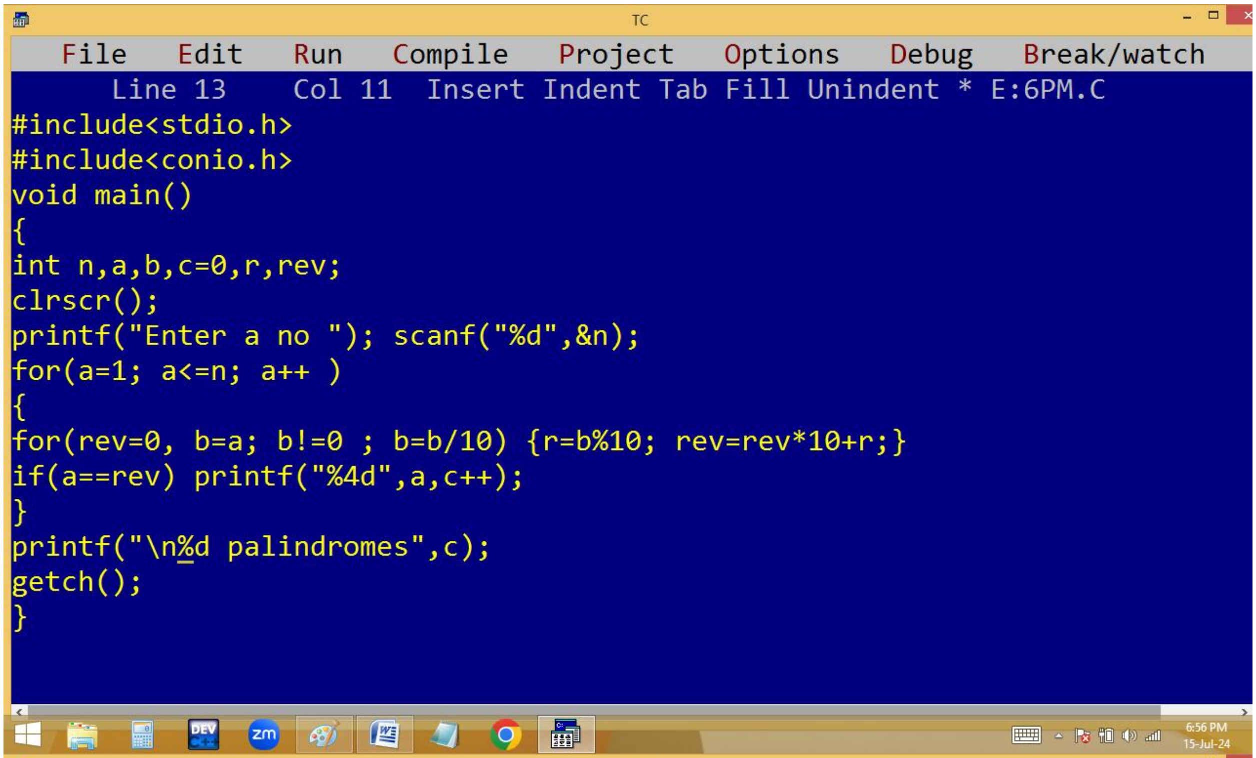


```
for( m=n; m!=0; m/=10)
{
for(f=1,r=m%10;r>1;r--)
{
f=f*r;
}
s=s+f;
}
puts(n==s?"Strong":"Not");
```

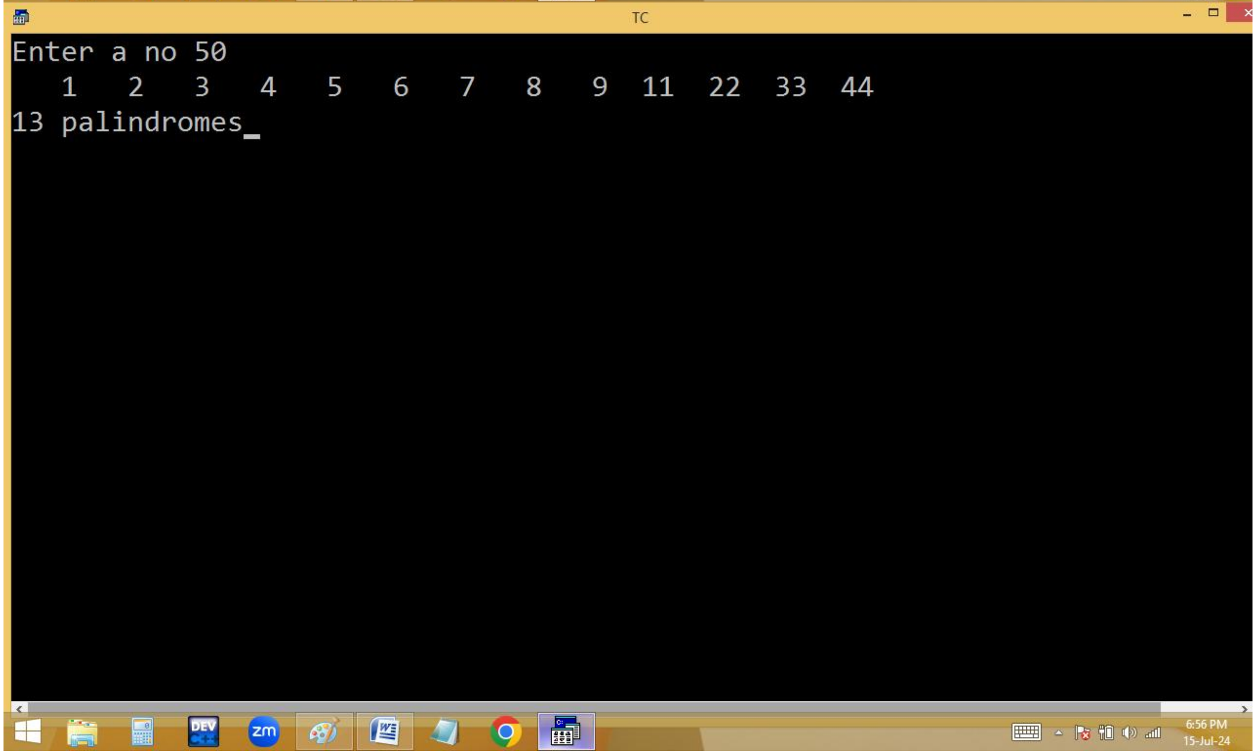
Printing 1..n palindrome no’s and count.

Eg: 1 to 50 palindromes and count

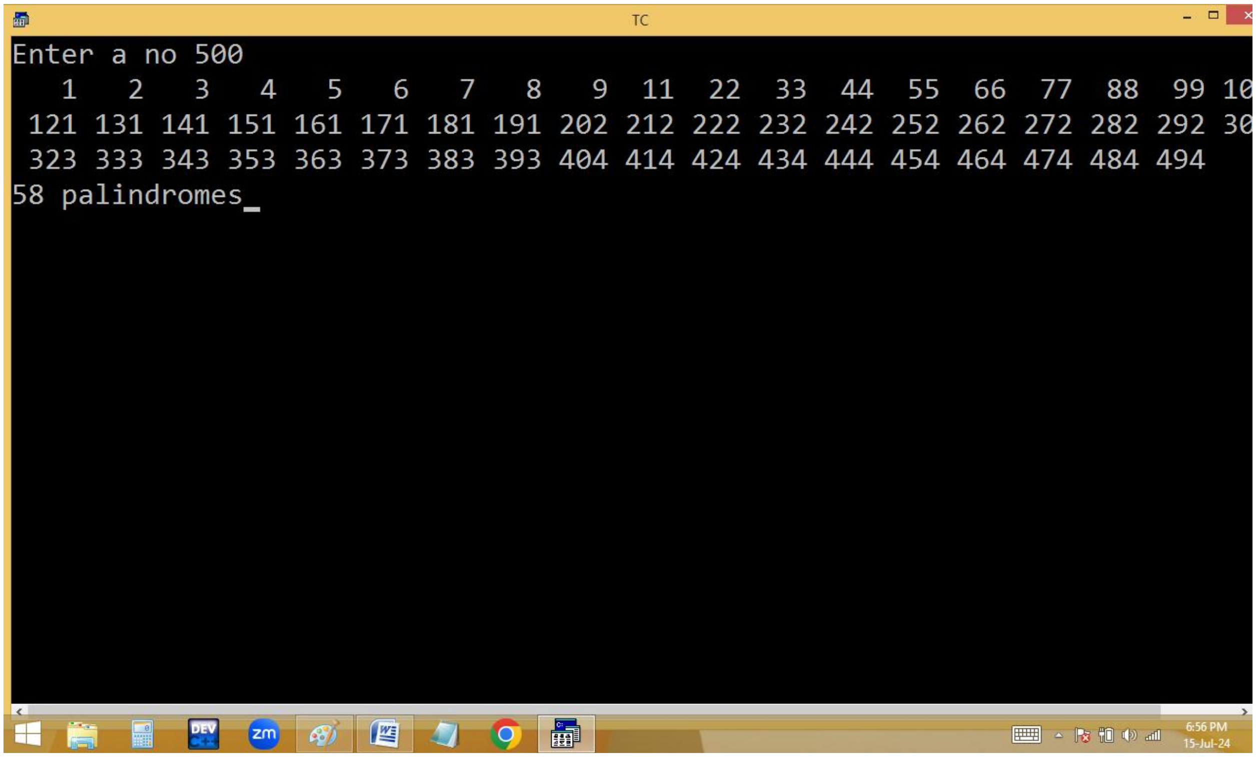
1 to 9 11 22 33 44 – 13 palindromes


TC
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 11 Insert Indent Tab Fill Unindent * E:6PM.C
6:56 PM
15-Jul-24

```
#include<stdio.h>
#include<conio.h>
void main()
{
int n,a,b,c=0,r,rev;
clrscr();
printf("Enter a no "); scanf("%d",&n);
for(a=1; a<=n; a++ )
{
for(rev=0, b=a; b!=0 ; b=b/10) {r=b%10; rev=rev*10+r;}
if(a==rev) printf("%4d",a,c++);
}
printf("\n%d palindromes",c);
getch();
}
```



```
Enter a no 50
   1   2   3   4   5   6   7   8   9  11  22  33  44
13 palindromes_
```

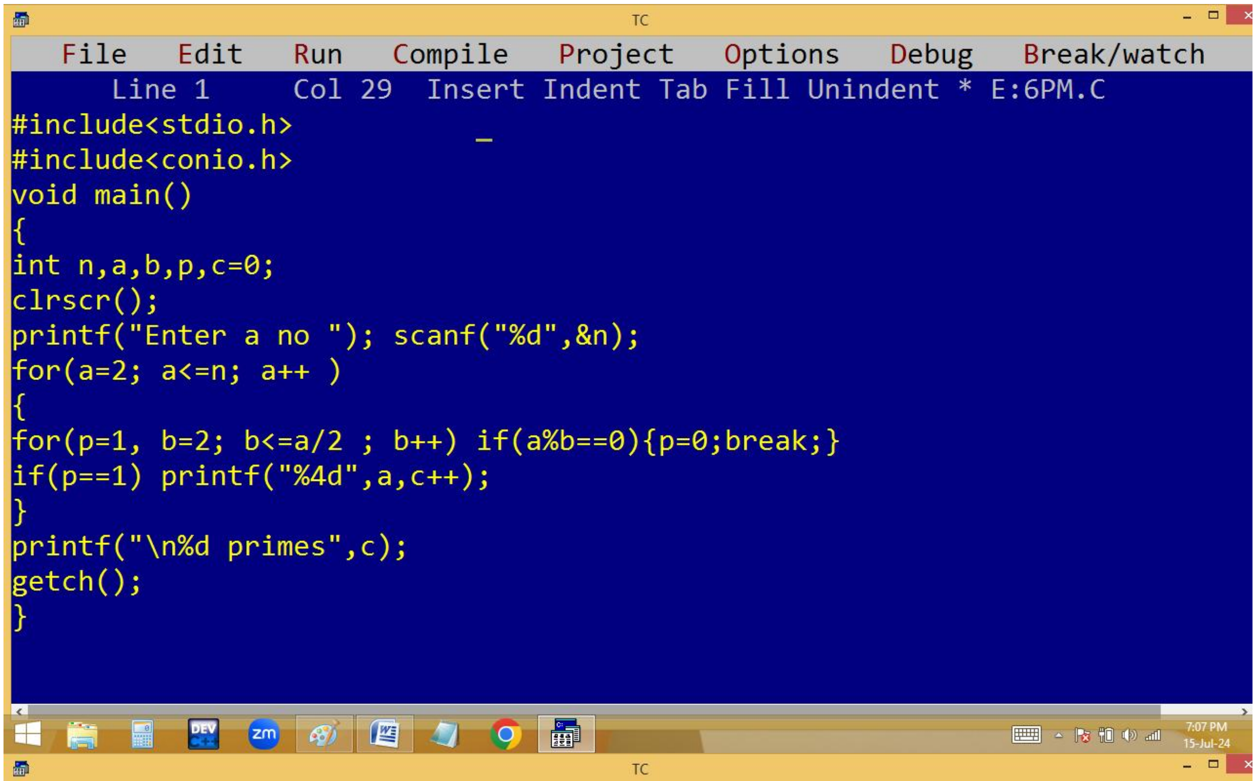


```
Enter a no 500
   1    2    3    4    5    6    7    8    9   11   22   33   44   55   66   77   88   99  10
 121  131  141  151  161  171  181  191  202  212  222  232  242  252  262  272  282  292  30
 323  333  343  353  363  373  383  393  404  414  424  434  444  454  464  474  484  494
58 palindromes_
```

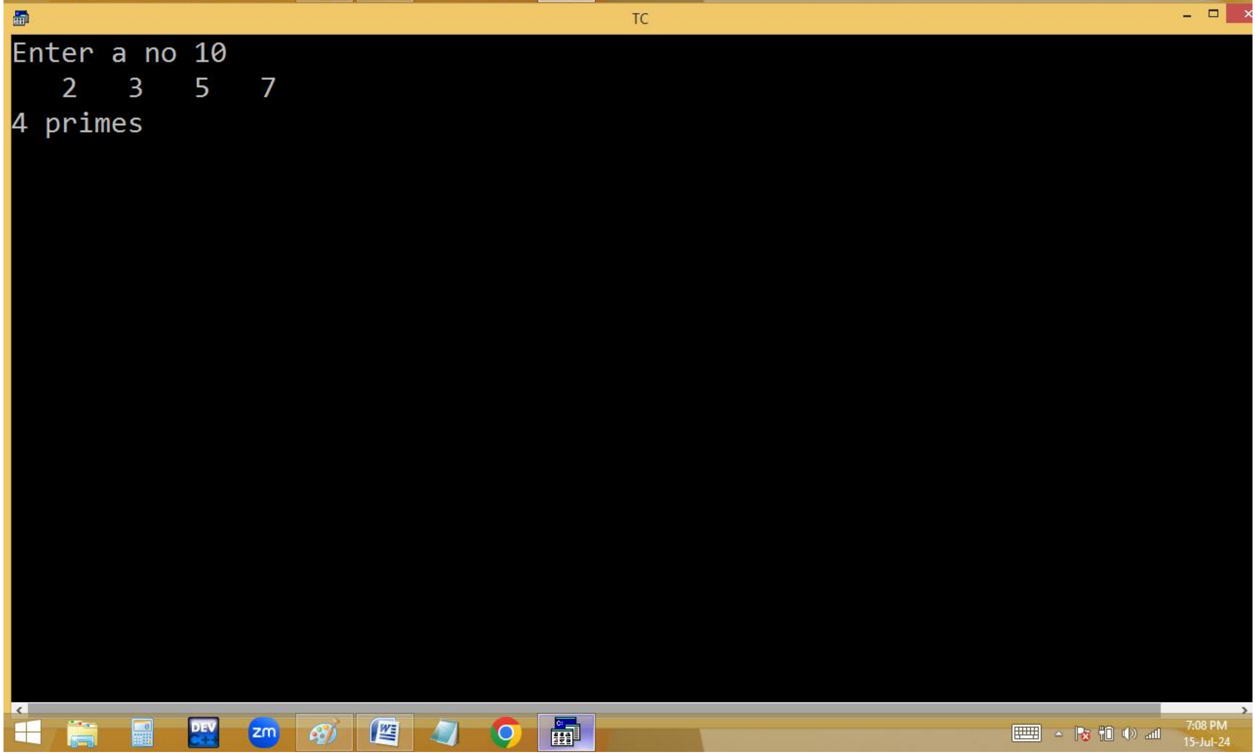
```
for( a=1; a<=n; a++ )
{
for( b=a,rev=0 ;b!=0;b=b/10)
{
r=b%10; rev=rev*10+r;
}
if(a==rev)p(a, c++);
}
p(c);
```

	n	a →	b	r	rev	c
✓	50	1	1%10 =	1 ✓	0×10+1=1 ✓	0 1 ✓
✓		2	2%10=	2	0×10+2=2	2 9
✗		10	10%10=	0	0×10+0=0	10
			1%10=	1	0×10+1=1	
✓		11	11%10=	1	0×10+1=1	
			1%10=	1	1×10+1=11	

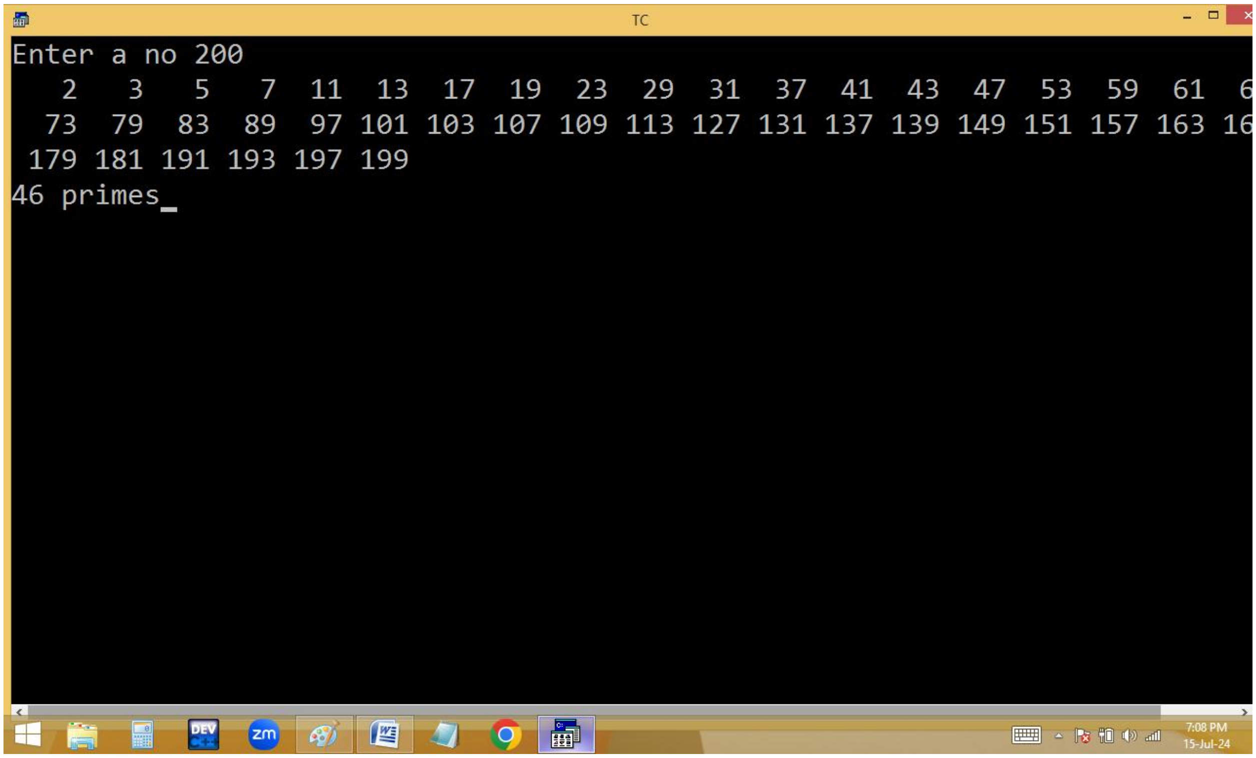
Print 1..n primes and count:


TC
File Edit Run Compile Project Options Debug Break/watch
Line 1 Col 29 Insert Indent Tab Fill Unindent * E:6PM.C
7:07 PM
15-Jul-24

```c
#include<stdio.h>
#include<conio.h>
void main()
{
int n,a,b,p,c=0;
clrscr();
printf("Enter a no "); scanf("%d",&n);
for(a=2; a<=n; a++ )
{
for(p=1, b=2; b<=a/2 ; b++) if(a%b==0){p=0;break;}
if(p==1) printf("%4d",a,c++);
}
printf("\n%d primes",c);
getch();
}
```

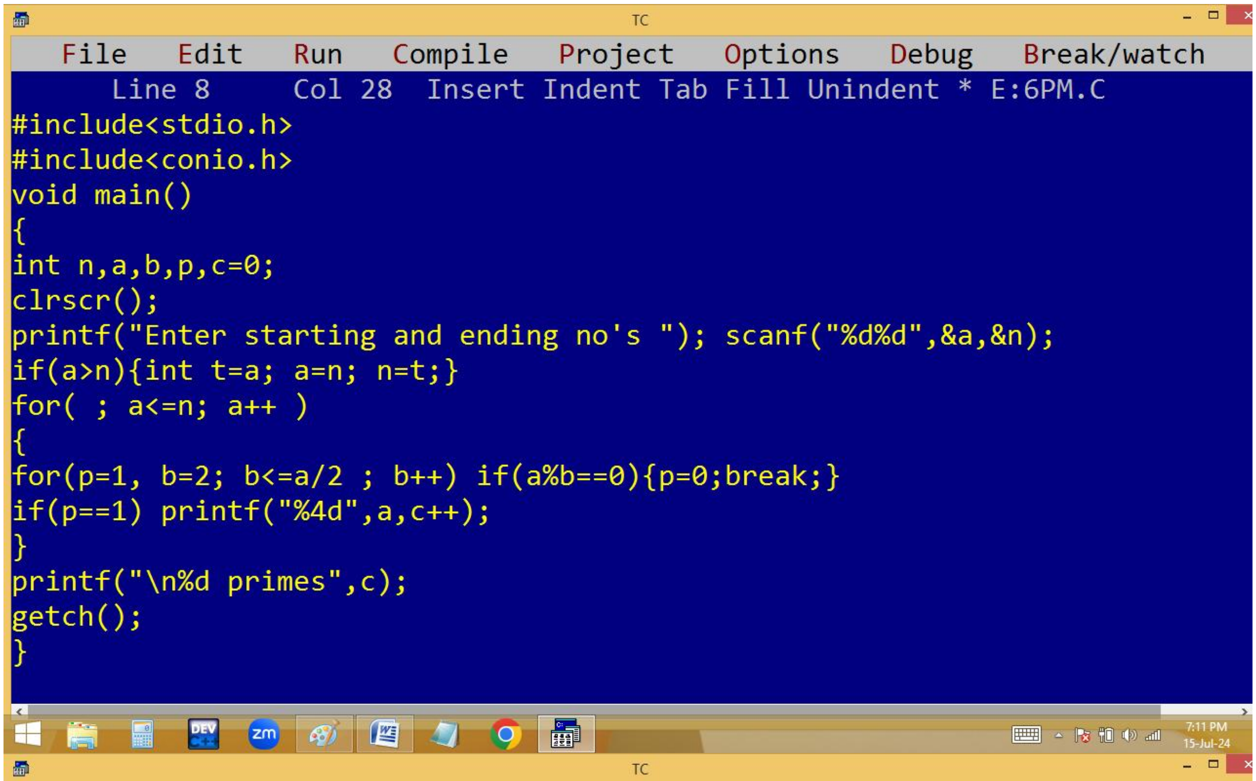


```
Enter a no 10
   2   3   5   7
4 primes
```

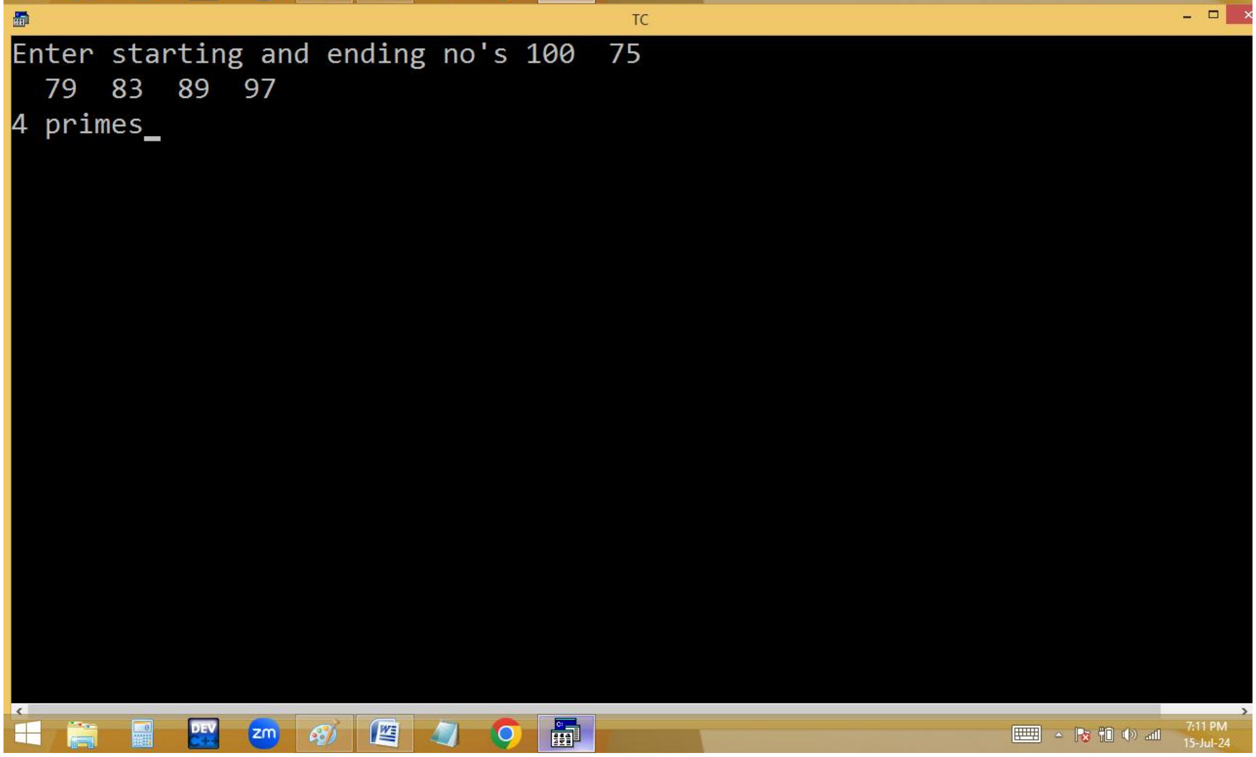


```
Enter a no 200
    2    3    5    7   11   13   17   19   23   29   31   37   41   43   47   53   59   61   6
   73   79   83   89   97  101  103  107  109  113  127  131  137  139  149  151  157  163  16
  179  181  191  193  197  199
46 primes_
```

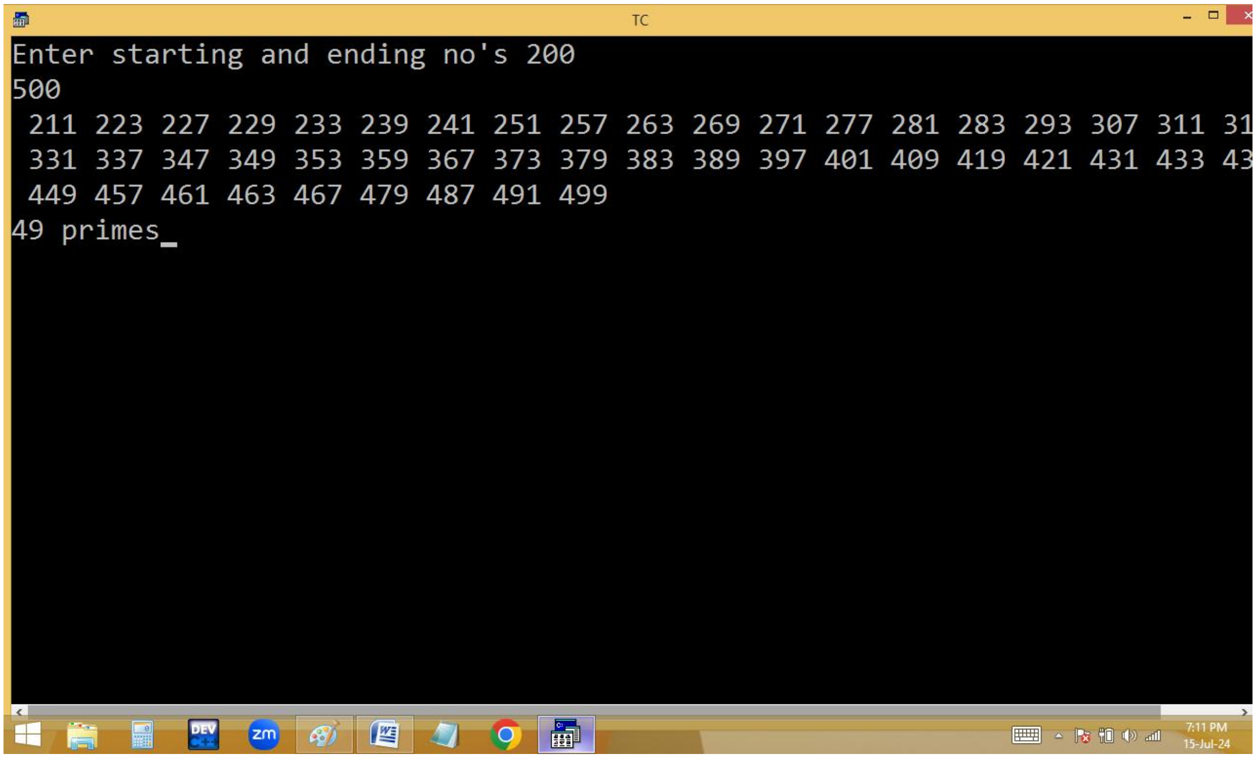
Print n to n primes and count:


TC
File Edit Run Compile Project Options Debug Break/watch
Line 8 Col 28 Insert Indent Tab Fill Unindent * E:6PM.C
7:11 PM
15-Jul-24

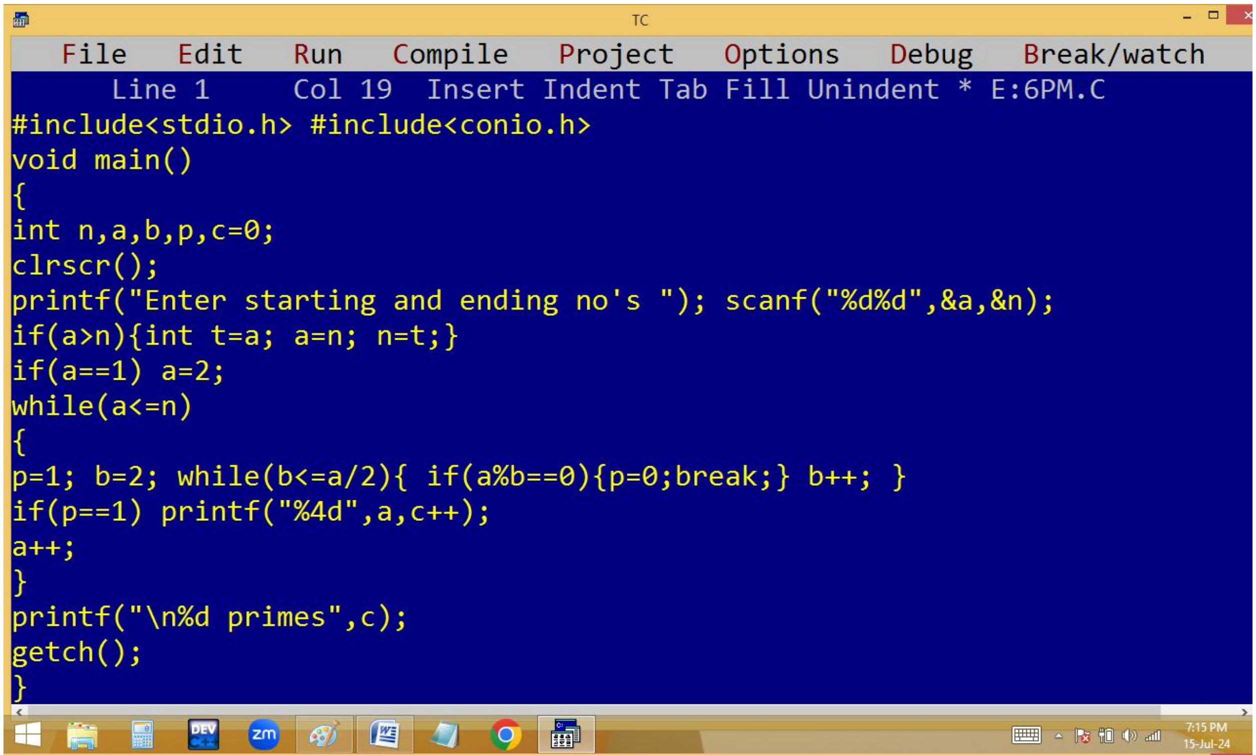
```
#include<stdio.h>
#include<conio.h>
void main()
{
int n,a,b,p,c=0;
clrscr();
printf("Enter starting and ending no's "); scanf("%d%d",&a,&n);
if(a>n){int t=a; a=n; n=t;}
for( ; a<=n; a++ )
{
for(p=1, b=2; b<=a/2 ; b++) if(a%b==0){p=0;break;}
if(p==1) printf("%4d",a,c++);
}
printf("\n%d primes",c);
getch();
}
```



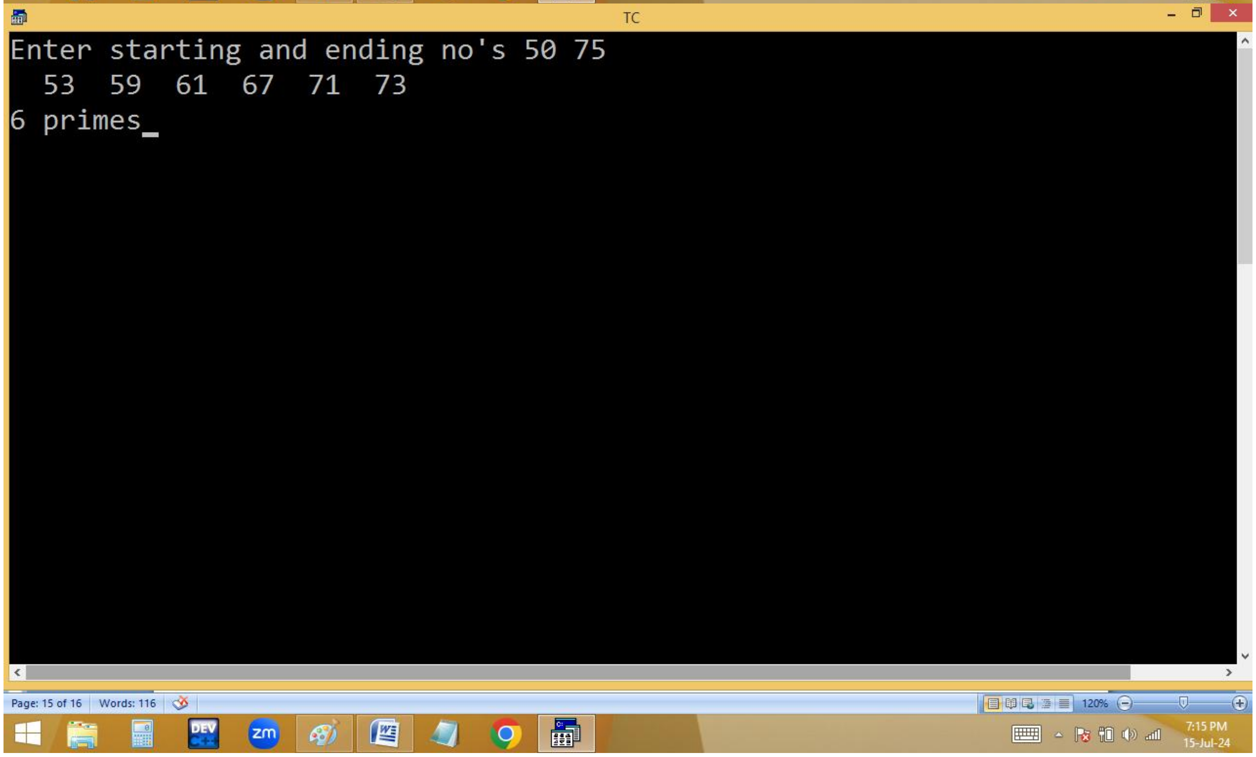
```
Enter starting and ending no's 100  75
  79  83  89  97
4 primes_
```



```
Enter starting and ending no's 200
500
 211 223 227 229 233 239 241 251 257 263 269 271 277 281 283 293 307 311 31
 331 337 347 349 353 359 367 373 379 383 389 397 401 409 419 421 431 433 43
 449 457 461 463 467 479 487 491 499
49 primes_
```


TC
File Edit Run Compile Project Options Debug Break/watch
Line 1 Col 19 Insert Indent Tab Fill Unindent * E:6PM.C
7:15 PM
15-Jul-24

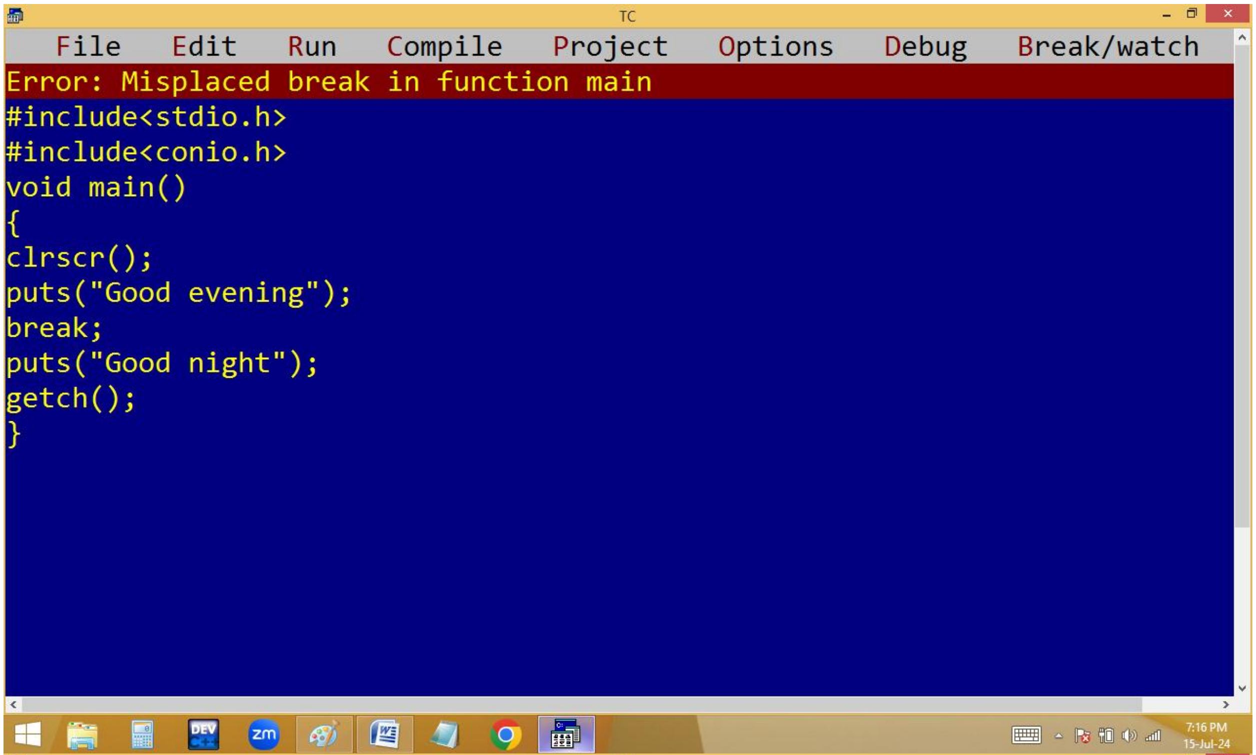
```
#include<stdio.h> #include<conio.h>
void main()
{
int n,a,b,p,c=0;
clrscr();
printf("Enter starting and ending no's "); scanf("%d%d",&a,&n);
if(a>n){int t=a; a=n; n=t;}
if(a==1) a=2;
while(a<=n)
{
p=1; b=2; while(b<=a/2){ if(a%b==0){p=0;break;} b++; }
if(p==1) printf("%4d",a,c++);
a++;
}
printf("\n%d primes",c);
getch();
}
```



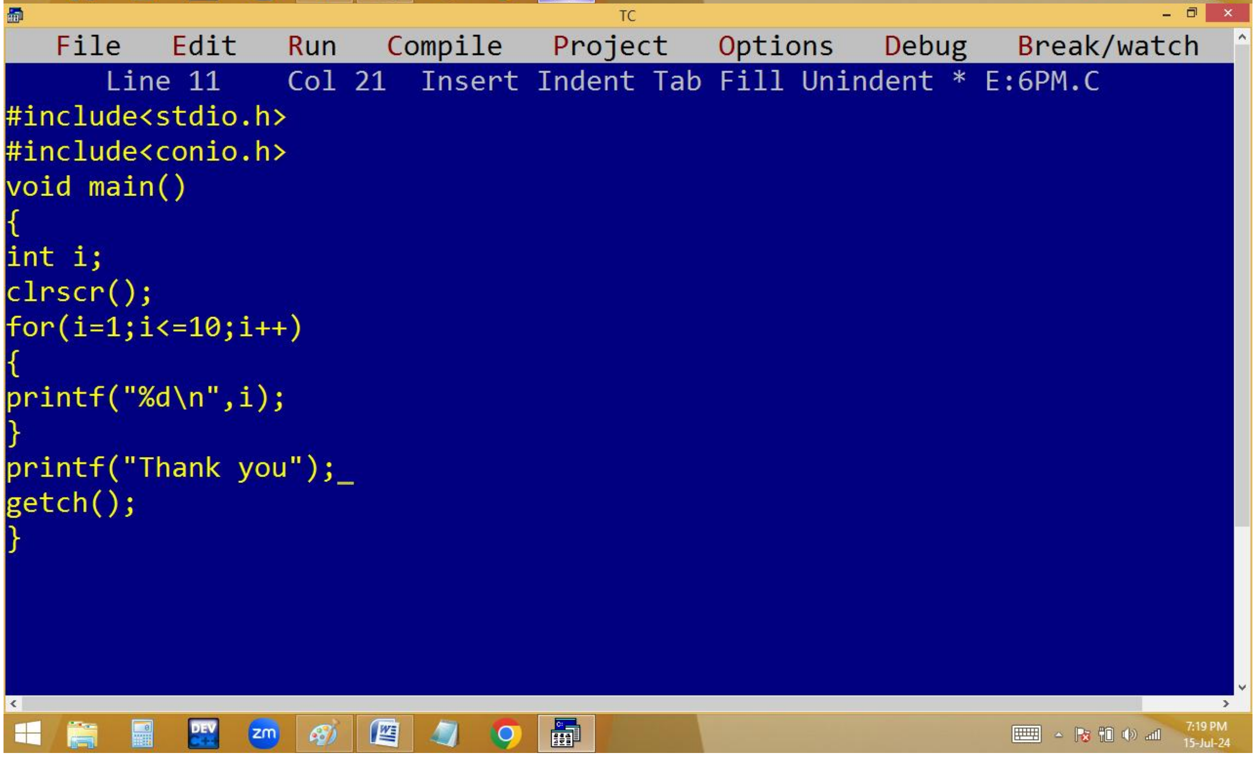
```
Enter starting and ending no's 50 75
  53  59  61  67  71  73
6 primes_
```

break: It is a keyword used within switch / loop.

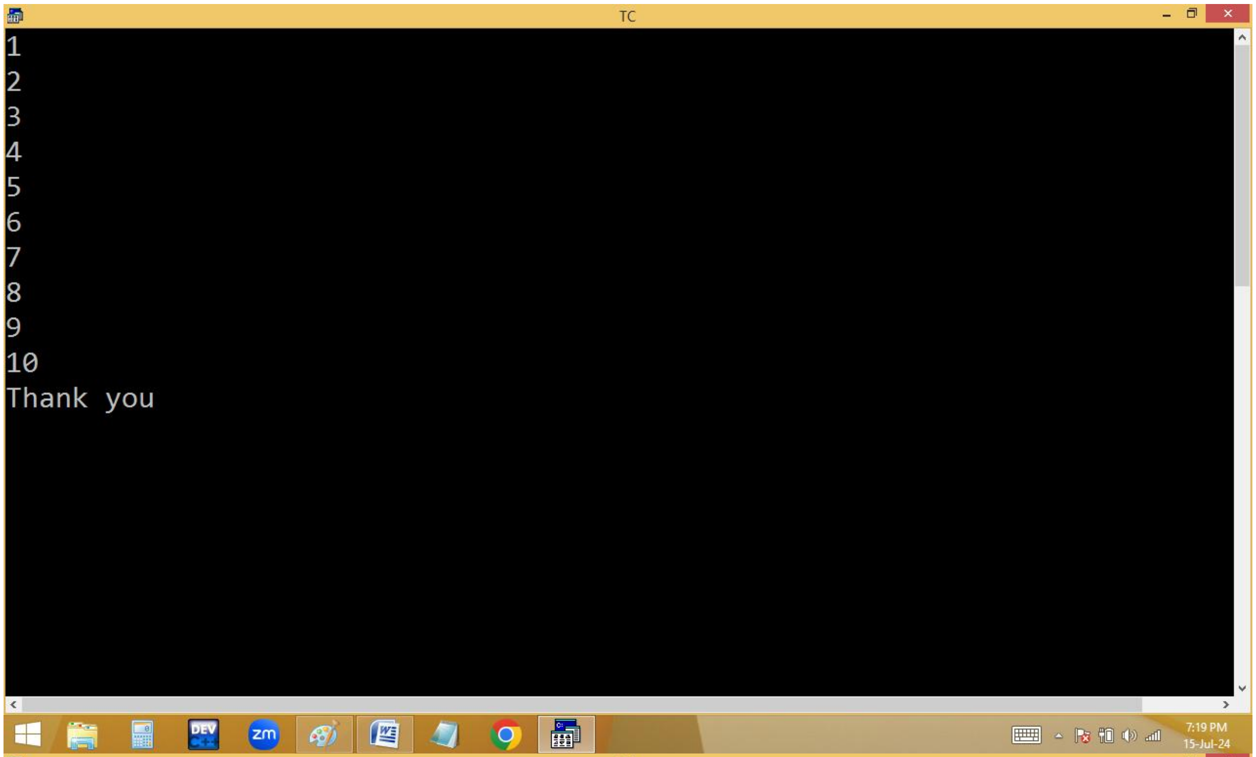
When break is occurred program execution jumped to the first statement after the switch / loop.



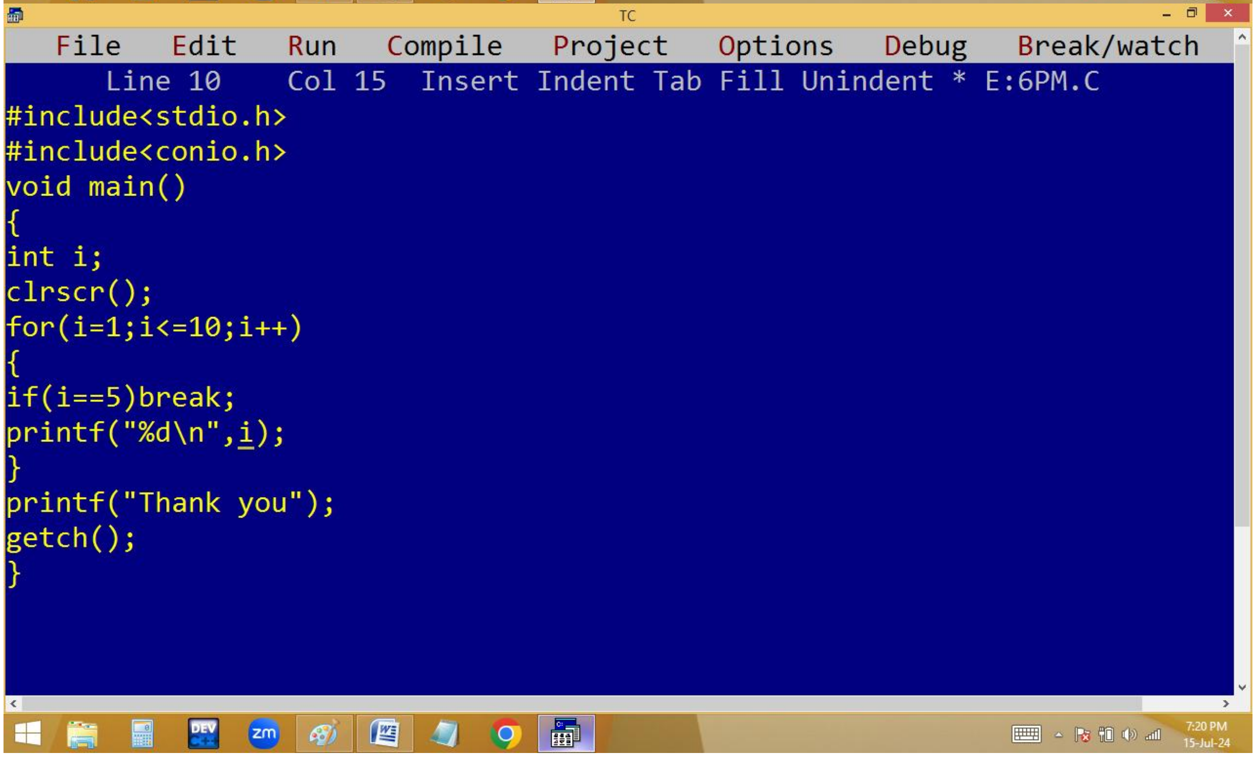
```
Error: Misplaced break in function main
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
puts("Good evening");
break;
puts("Good night");
getch();
}
```



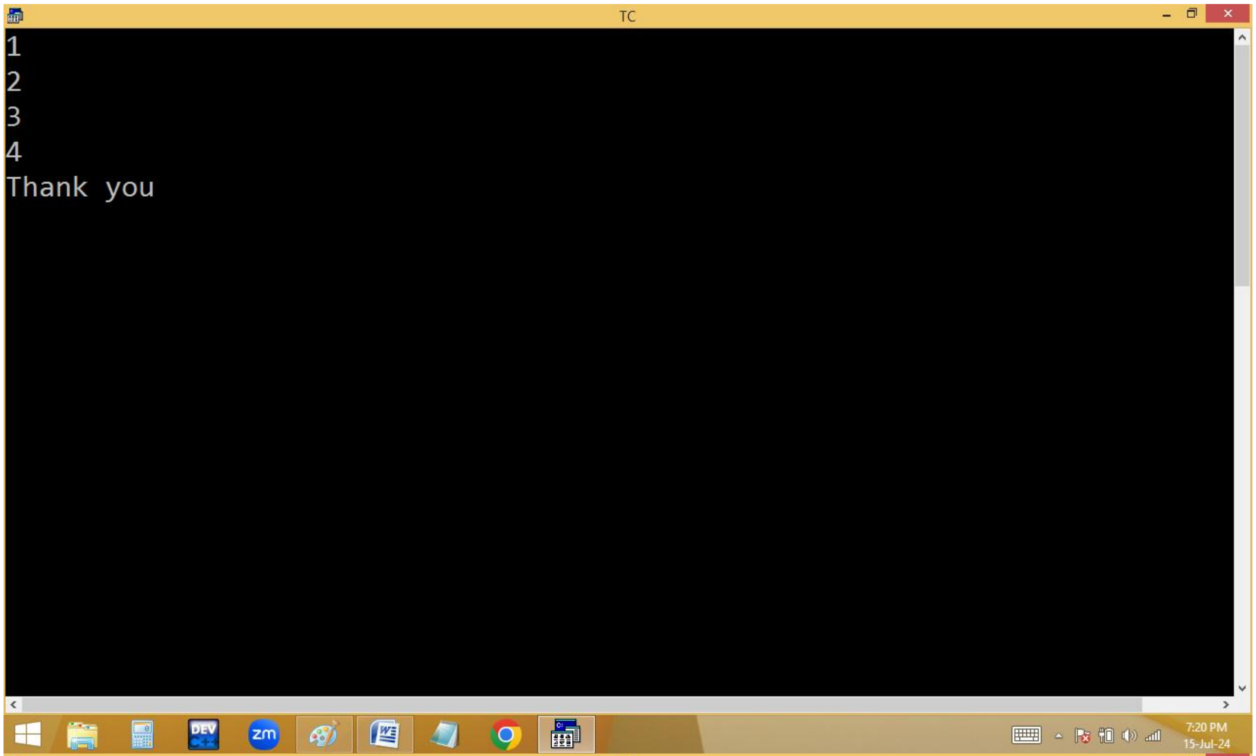
```
      Line 11     Col 21  Insert Indent Tab Fill Unindent * E:6PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int i;
clrscr();
for(i=1;i<=10;i++)
{
printf("%d\n",i);
}
printf("Thank you");_
getch();
}
```



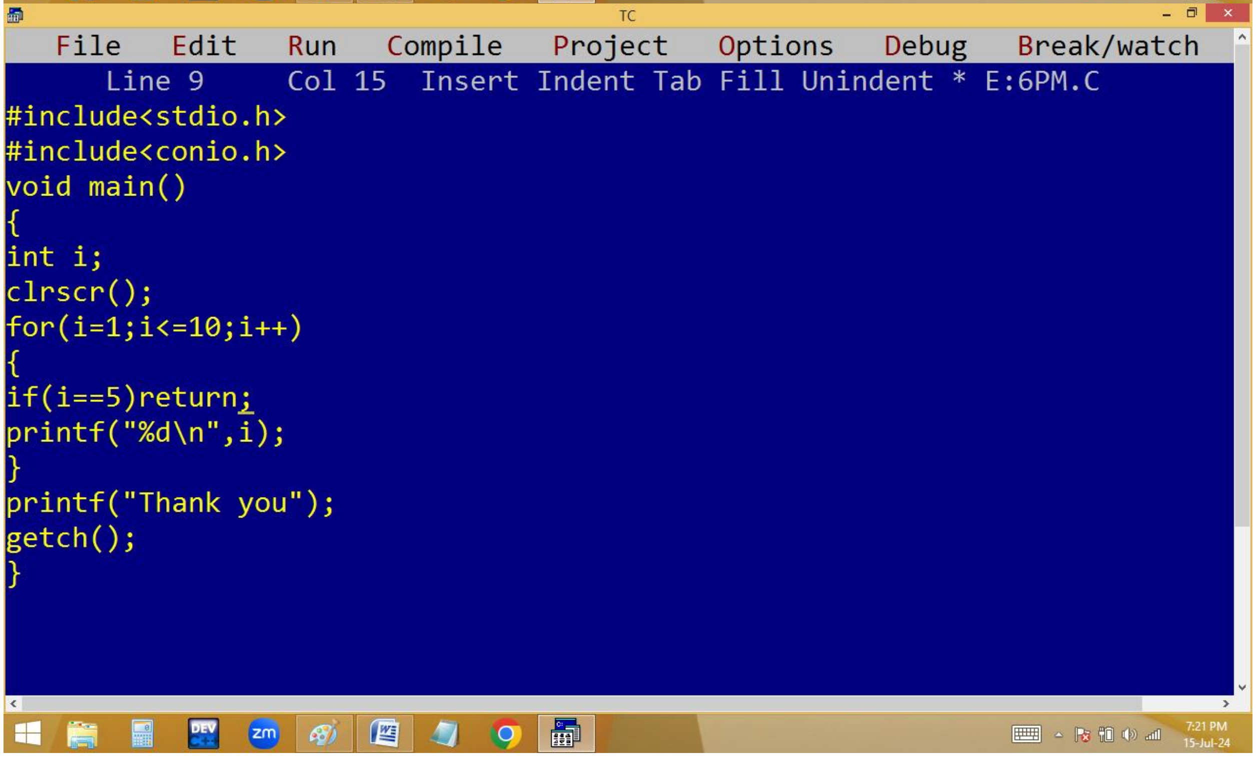
```
1
2
3
4
5
6
7
8
9
10
Thank you
```



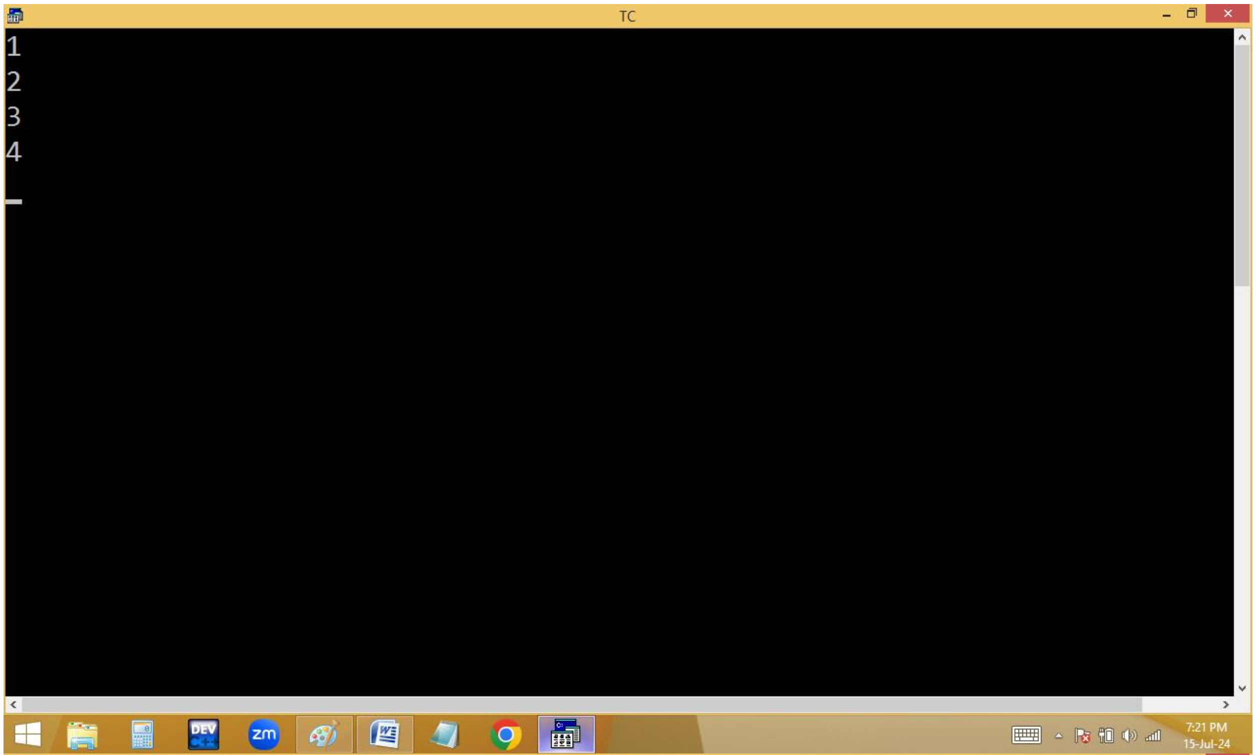
```
#include<stdio.h>
#include<conio.h>
void main()
{
int i;
clrscr();
for(i=1;i<=10;i++)
{
if(i==5)break;
printf("%d\n",i);
}
printf("Thank you");
getch();
}
```



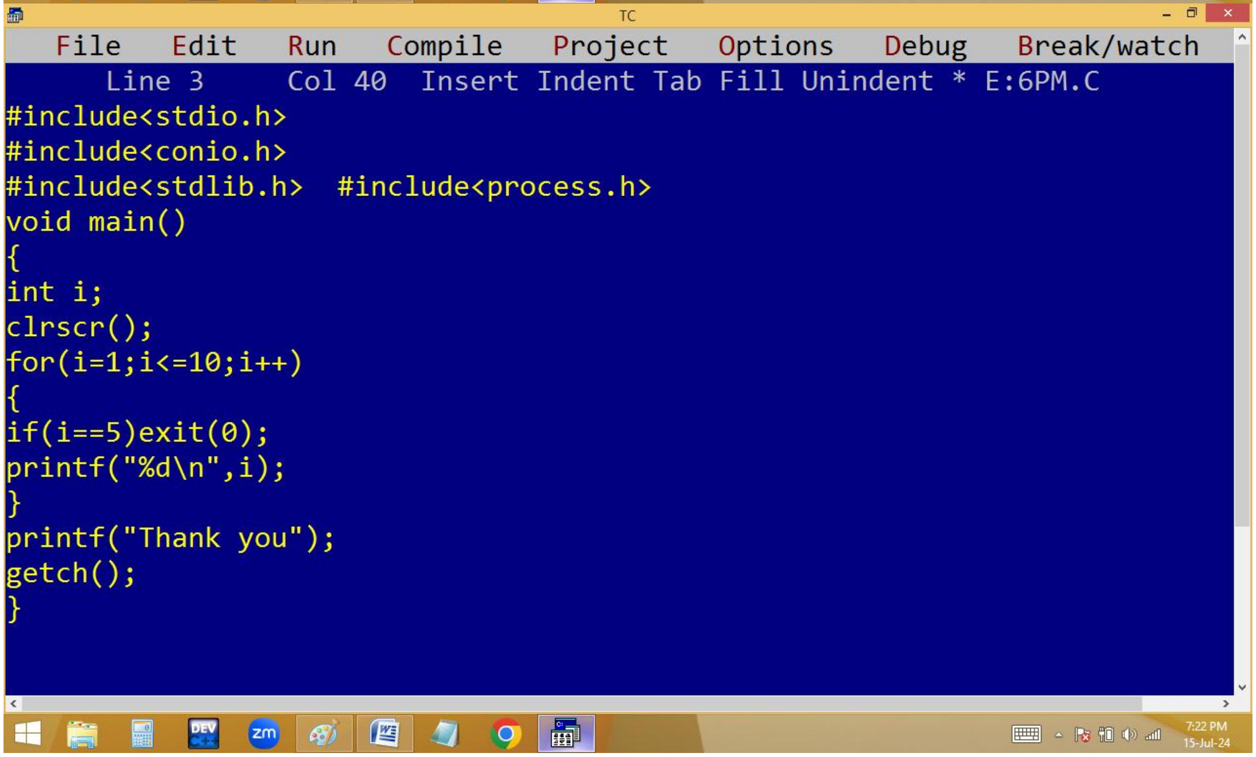
```
1
2
3
4
Thank you
```



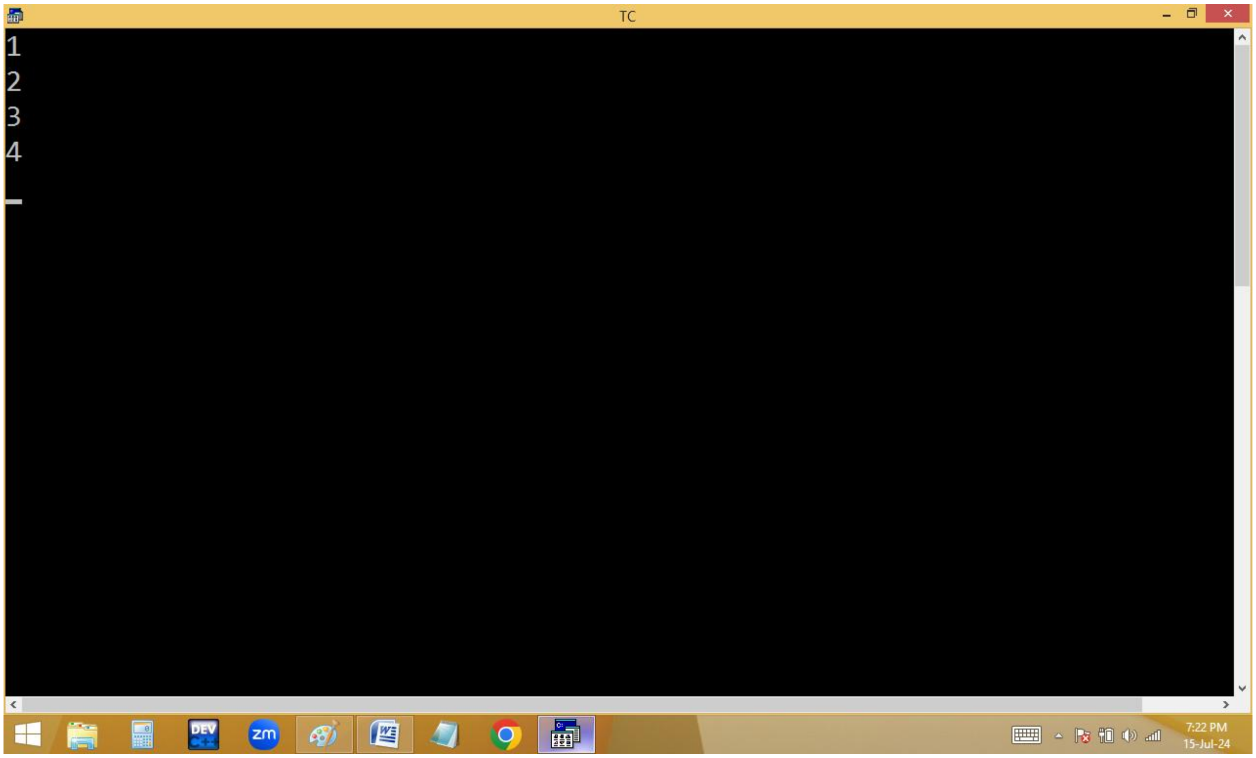
```
#include<stdio.h>
#include<conio.h>
void main()
{
int i;
clrscr();
for(i=1;i<=10;i++)
{
if(i==5)return;
printf("%d\n",i);
}
printf("Thank you");
getch();
}
```



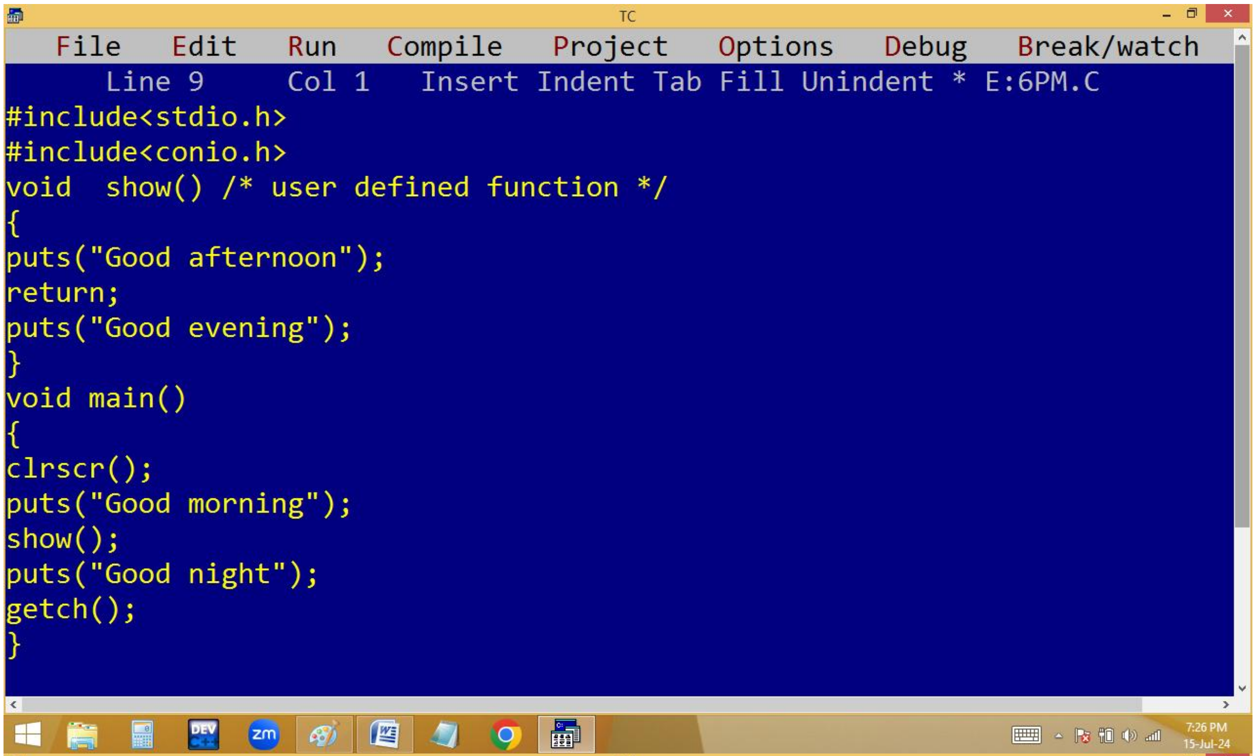
```
1
2
3
4
```



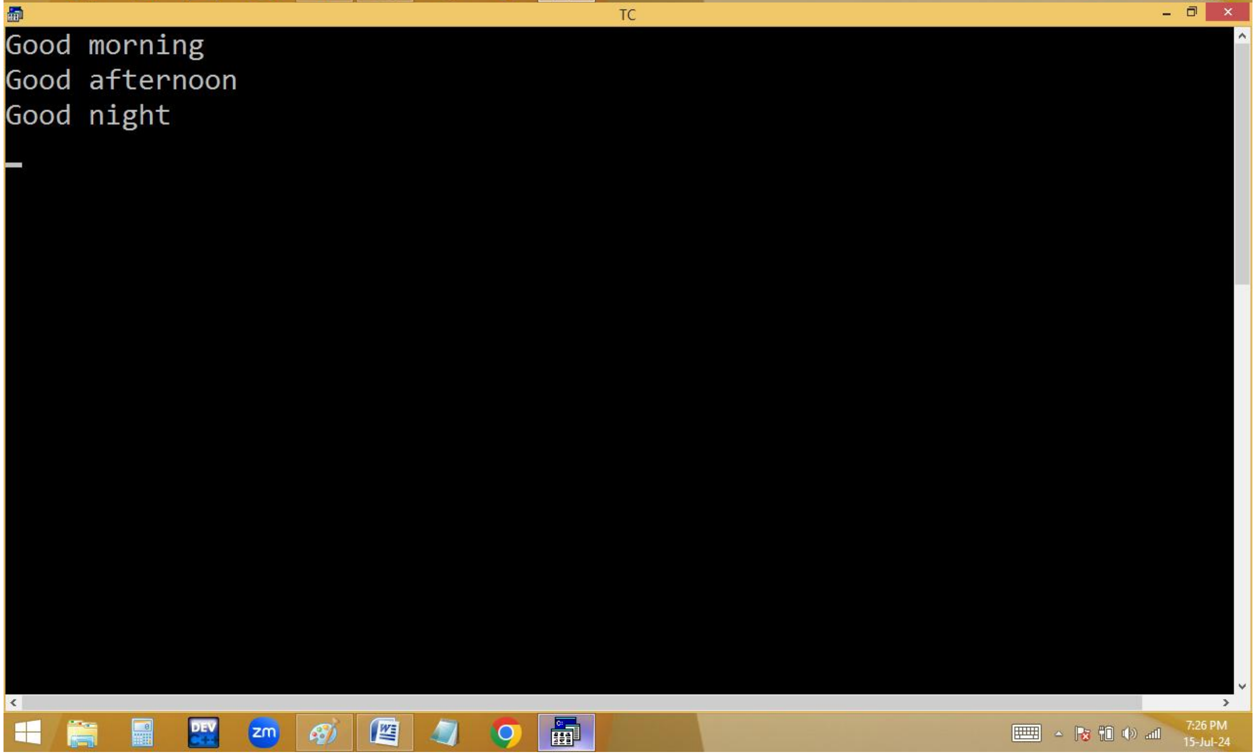
```c
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>  #include<process.h>
void main()
{
int i;
clrscr();
for(i=1;i<=10;i++)
{
if(i==5)exit(0);
printf("%d\n",i);
}
printf("Thank you");
getch();
}
```



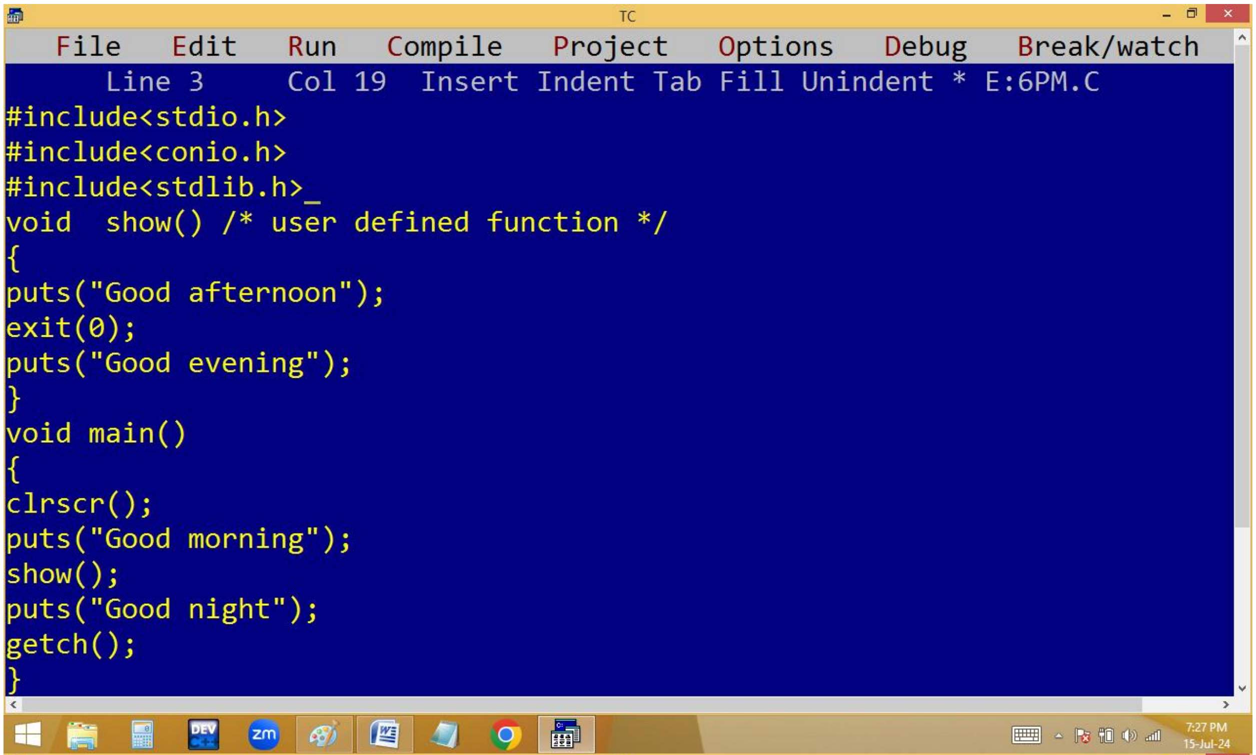
```
1
2
3
4
```



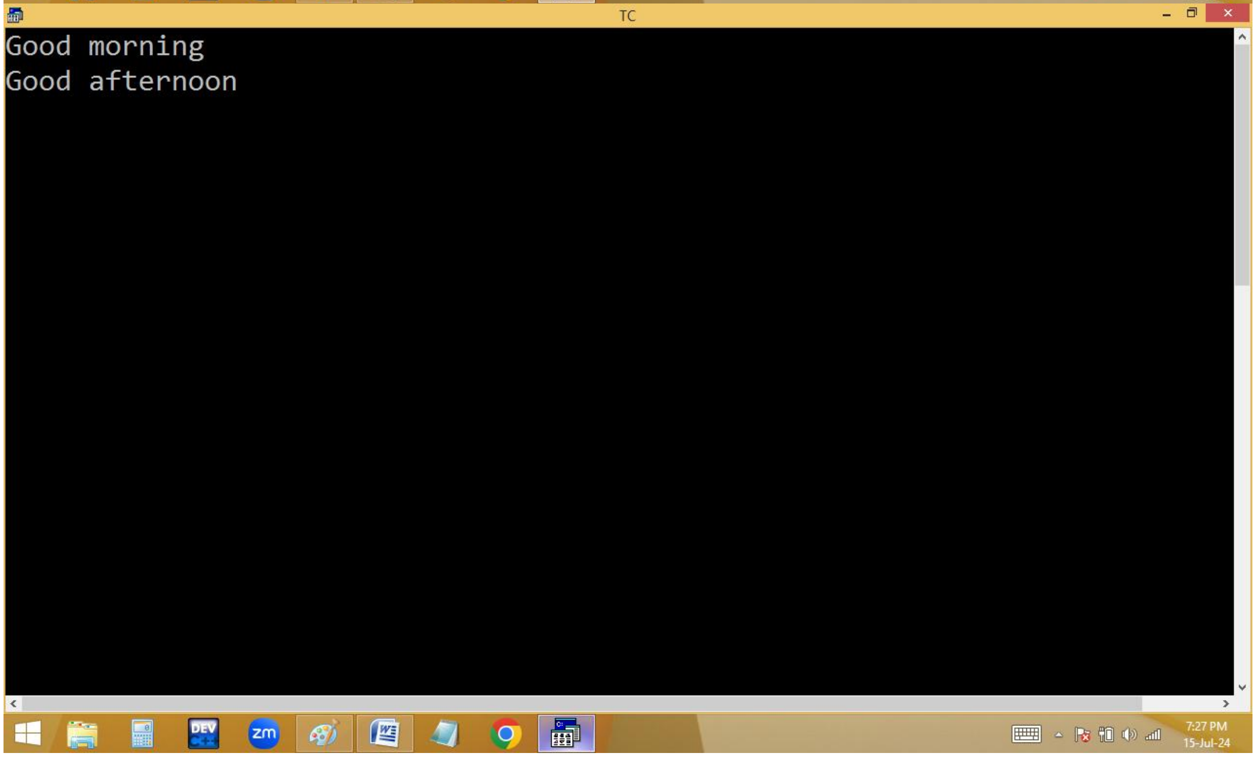
```c
#include<stdio.h>
#include<conio.h>
void  show() /* user defined function */
{
puts("Good afternoon");
return;
puts("Good evening");
}
void main()
{
clrscr();
puts("Good morning");
show();
puts("Good night");
getch();
}
```



```
Good morning
Good afternoon
Good night
```


TC
File Edit Run Compile Project Options Debug Break/watch
Line 3 Col 19 Insert Indent Tab Fill Unindent * E:6PM.C
7:27 PM
15-Jul-24

```
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>_
void  show() /* user defined function */
{
puts("Good afternoon");
exit(0);
puts("Good evening");
}
void main()
{
clrscr();
puts("Good morning");
show();
puts("Good night");
getch();
}
```

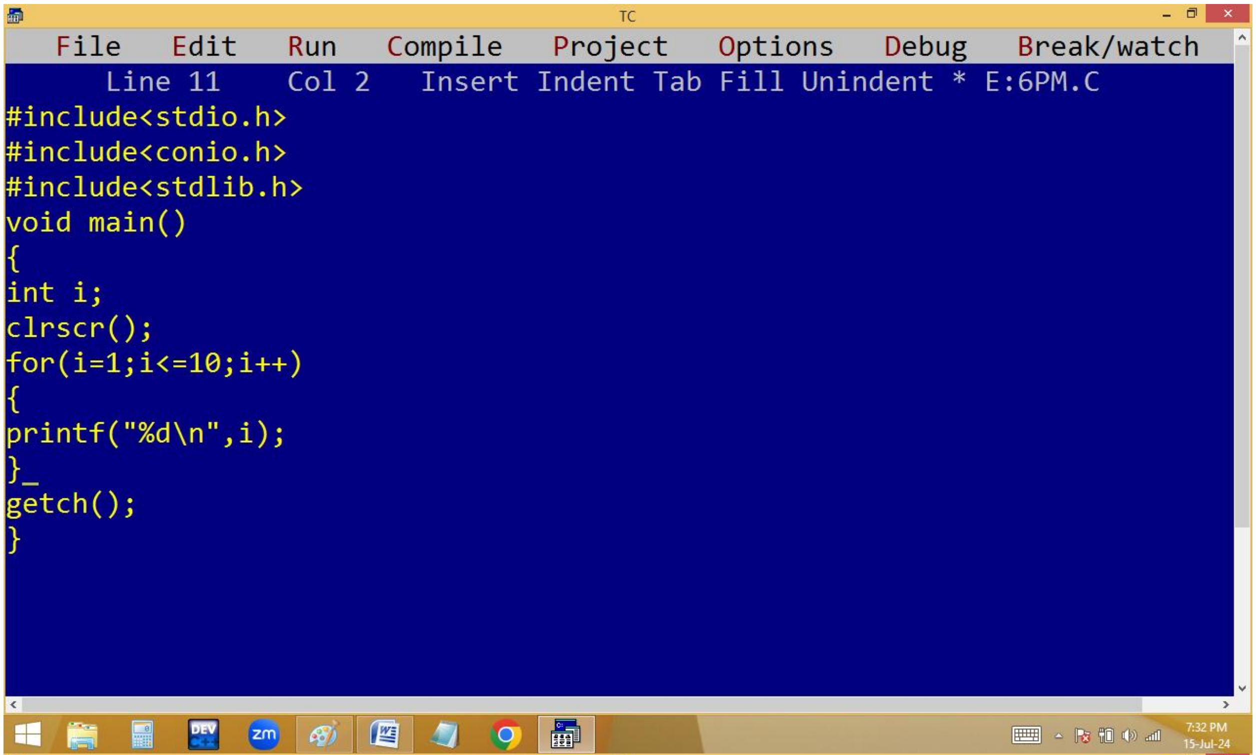


```
Good morning
Good afternoon
```

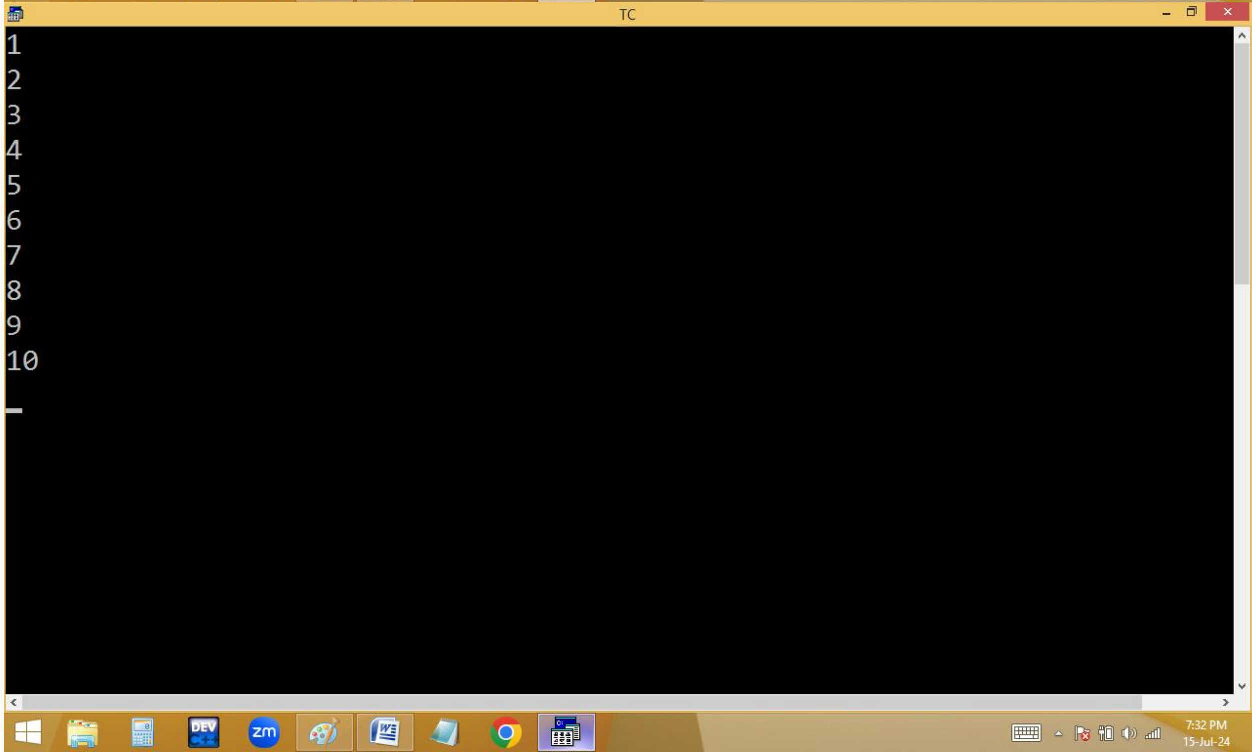
break	exit()	Return
Keyword	Function	Keyword
Header file not required	stdlib.h / process.h required	Header file not required

Terminates switch / loop	Terminates total program	Closes that function only
Should be used within switch/loop	Used any where	Used any where

Continue: when continue word is occurred, the program execution jumped to end of the loop and later beginning of the loop. Due to this the remaining statements in that loop are not working. When we want to skip the statements in a loop then only use the continue keyword.

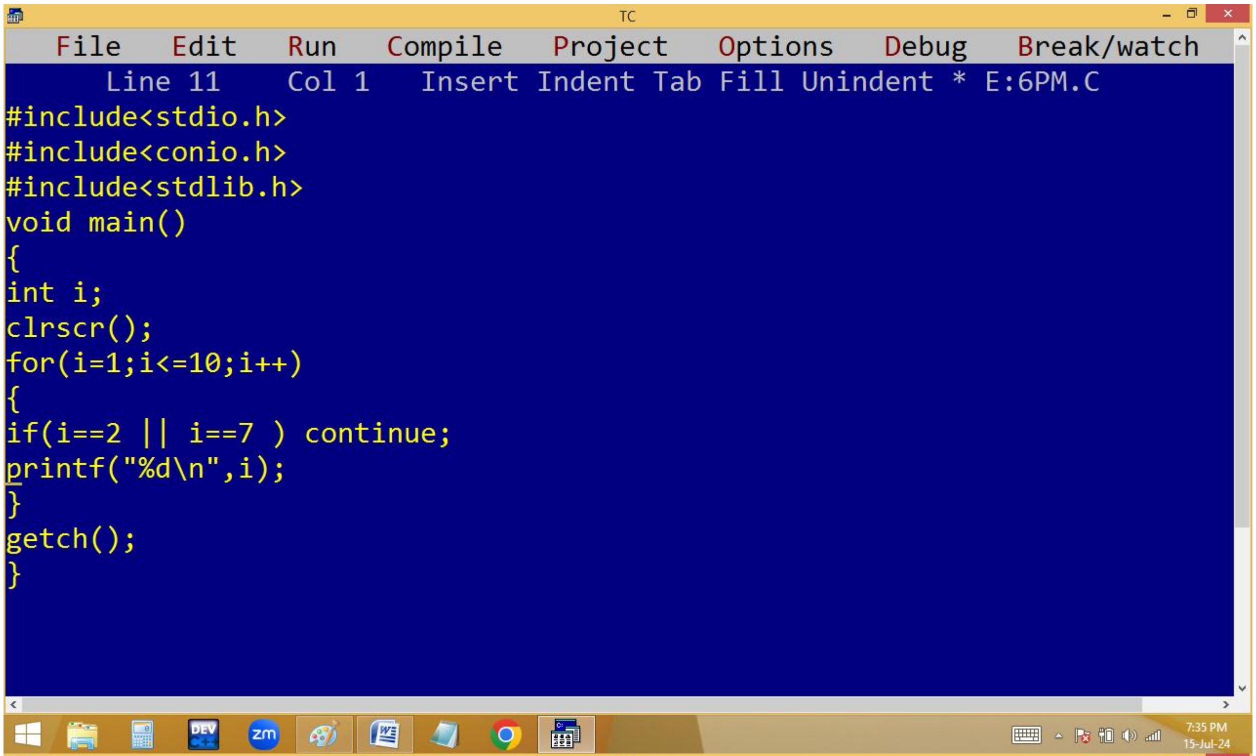


```
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
void main()
{
int i;
clrscr();
for(i=1;i<=10;i++)
{
printf("%d\n",i);
}
getch();
}
```

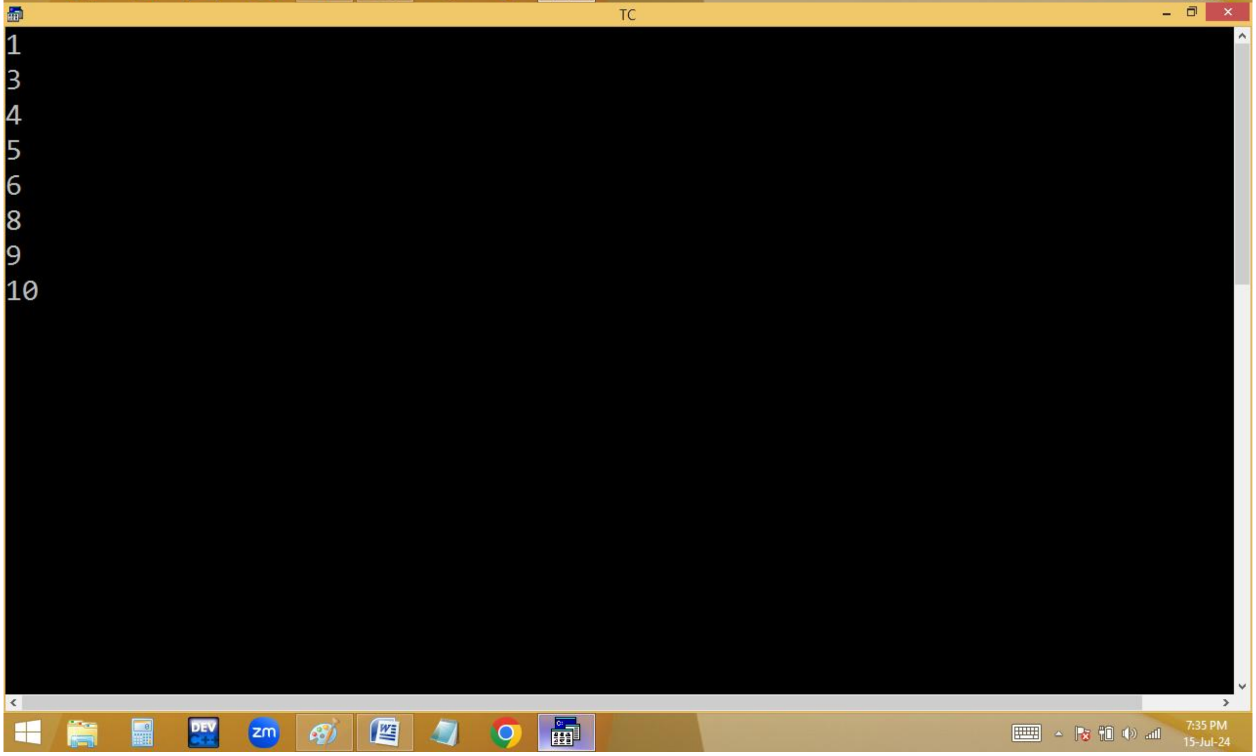


```
1
2
3
4
5
6
7
8
9
10
```

Printing 1 to 10 except 2 and 10.

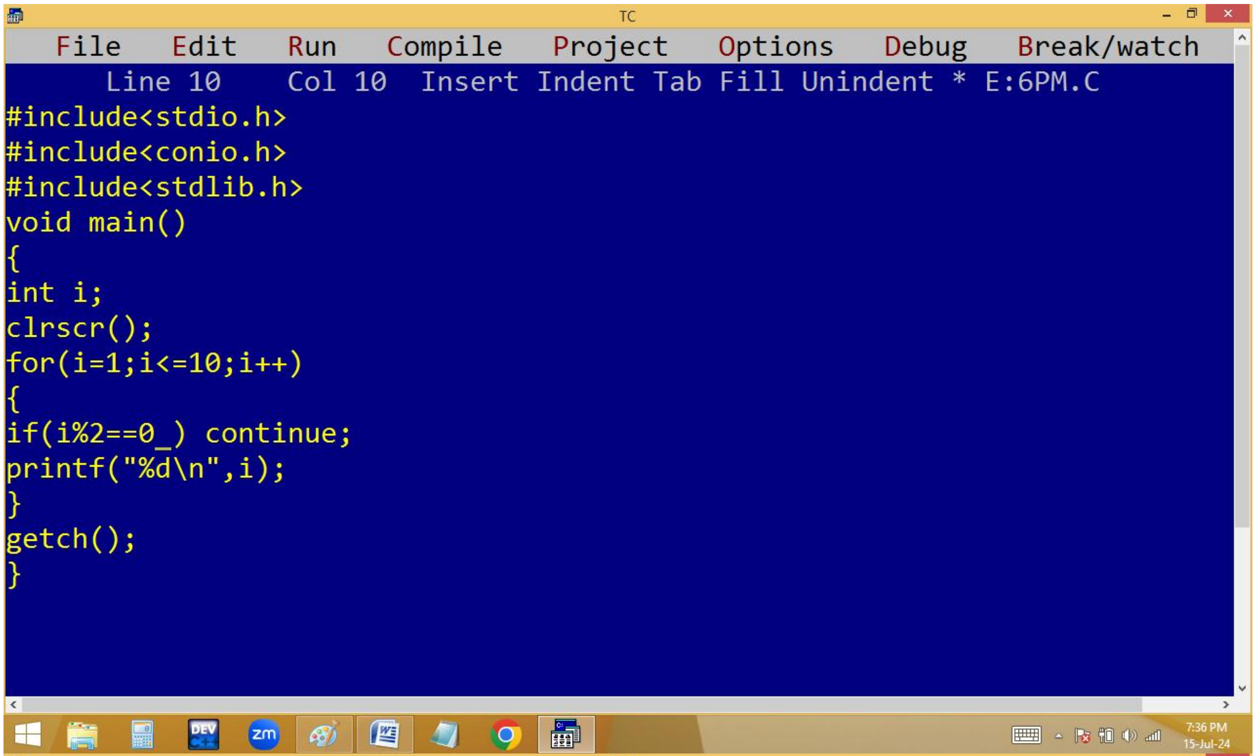


```
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
void main()
{
int i;
clrscr();
for(i=1;i<=10;i++)
{
if(i==2 || i==7 ) continue;
printf("%d\n",i);
}
getch();
}
```

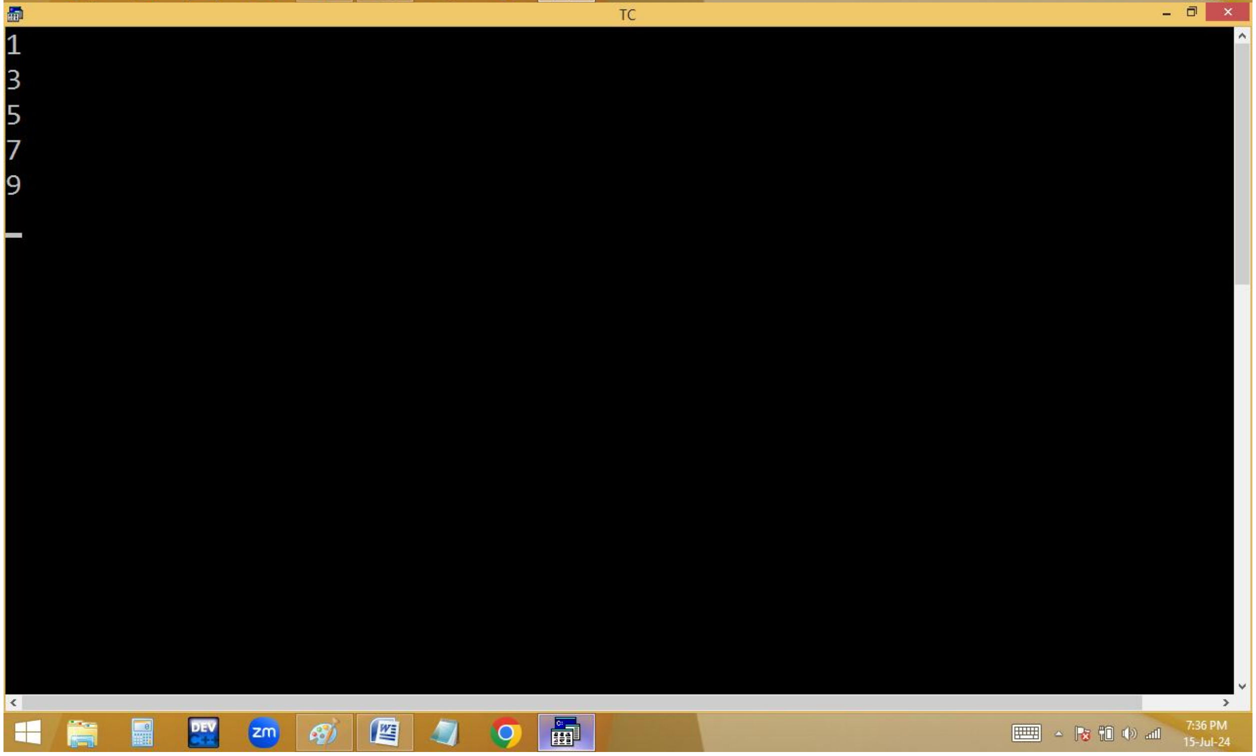


```
1
3
4
5
6
8
9
10
```

Printing 1..10 odd numbers using continue:

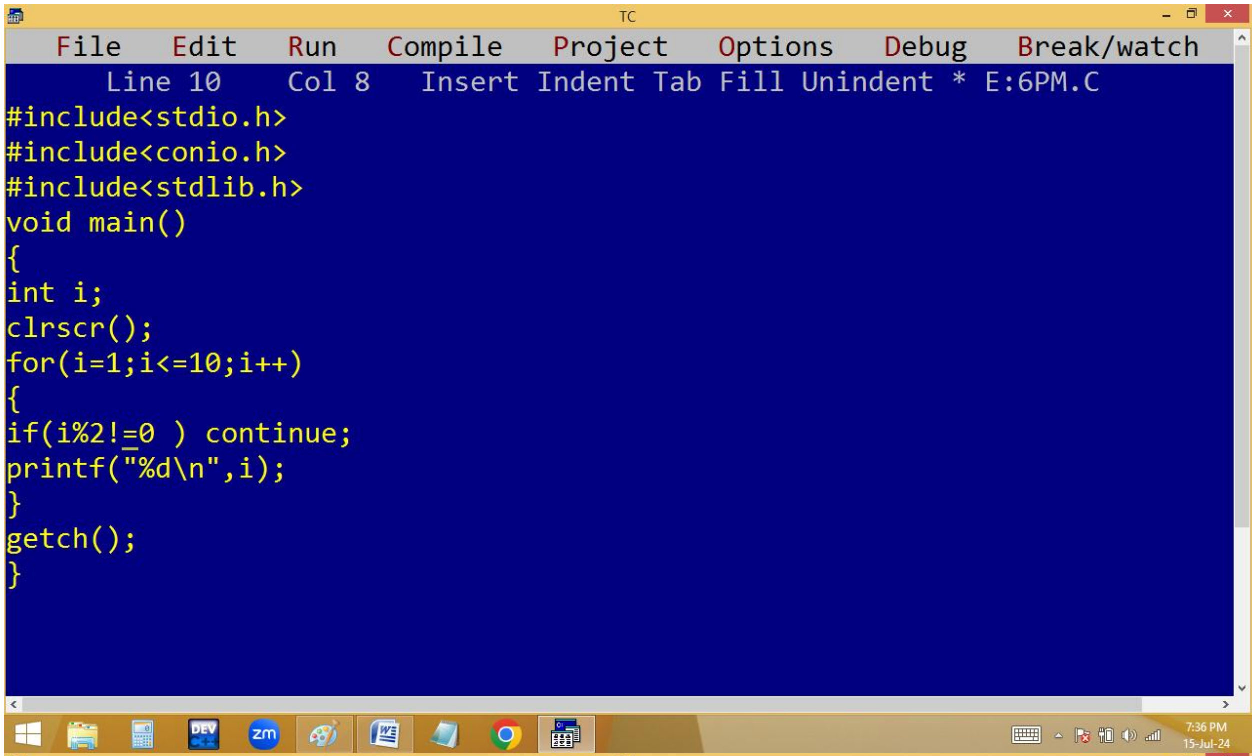


```
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
void main()
{
int i;
clrscr();
for(i=1;i<=10;i++)
{
if(i%2==0_) continue;
printf("%d\n",i);
}
getch();
}
```

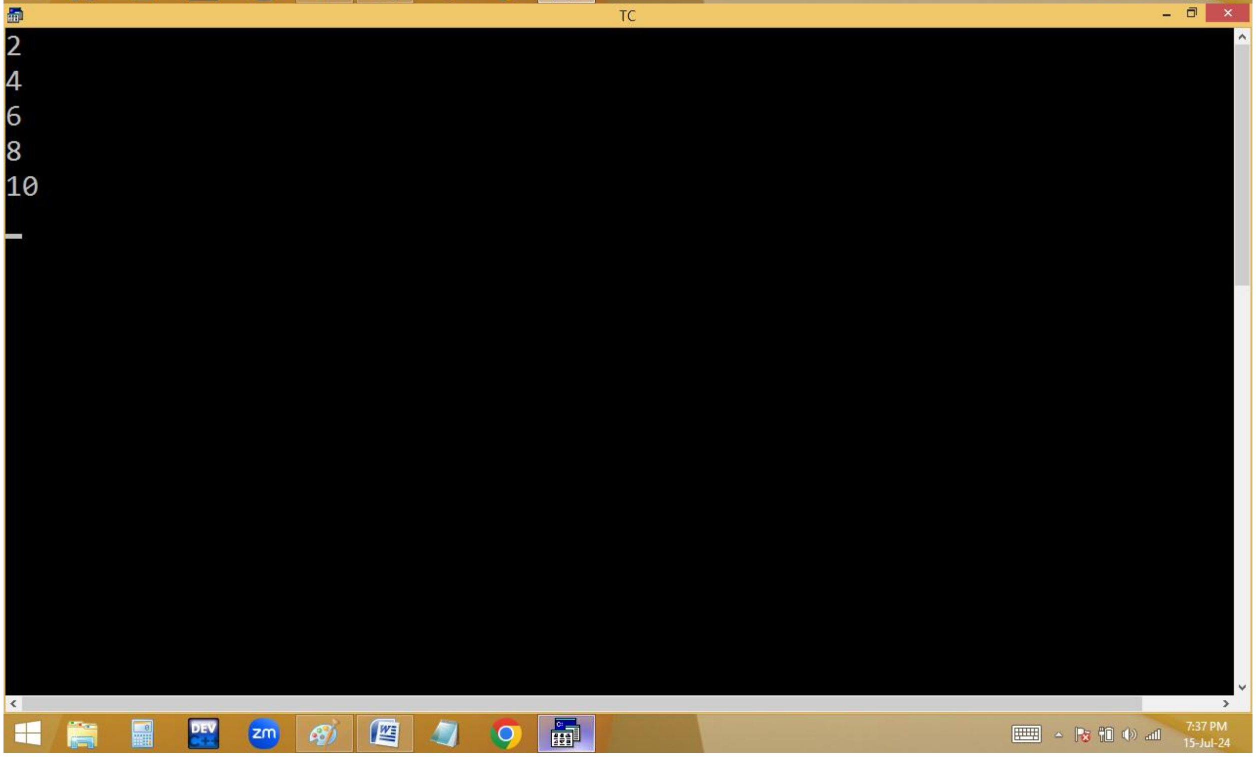


```
1
3
5
7
9
```

Even numbers:



```
      Line 10    Col 8   Insert Indent Tab Fill Unindent * E:6PM.C
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
void main()
{
int i;
clrscr();
for(i=1;i<=10;i++)
{
if(i%2!=0 ) continue;
printf("%d\n",i);
}
getch();
}
```



```
2
4
6
8
10
```