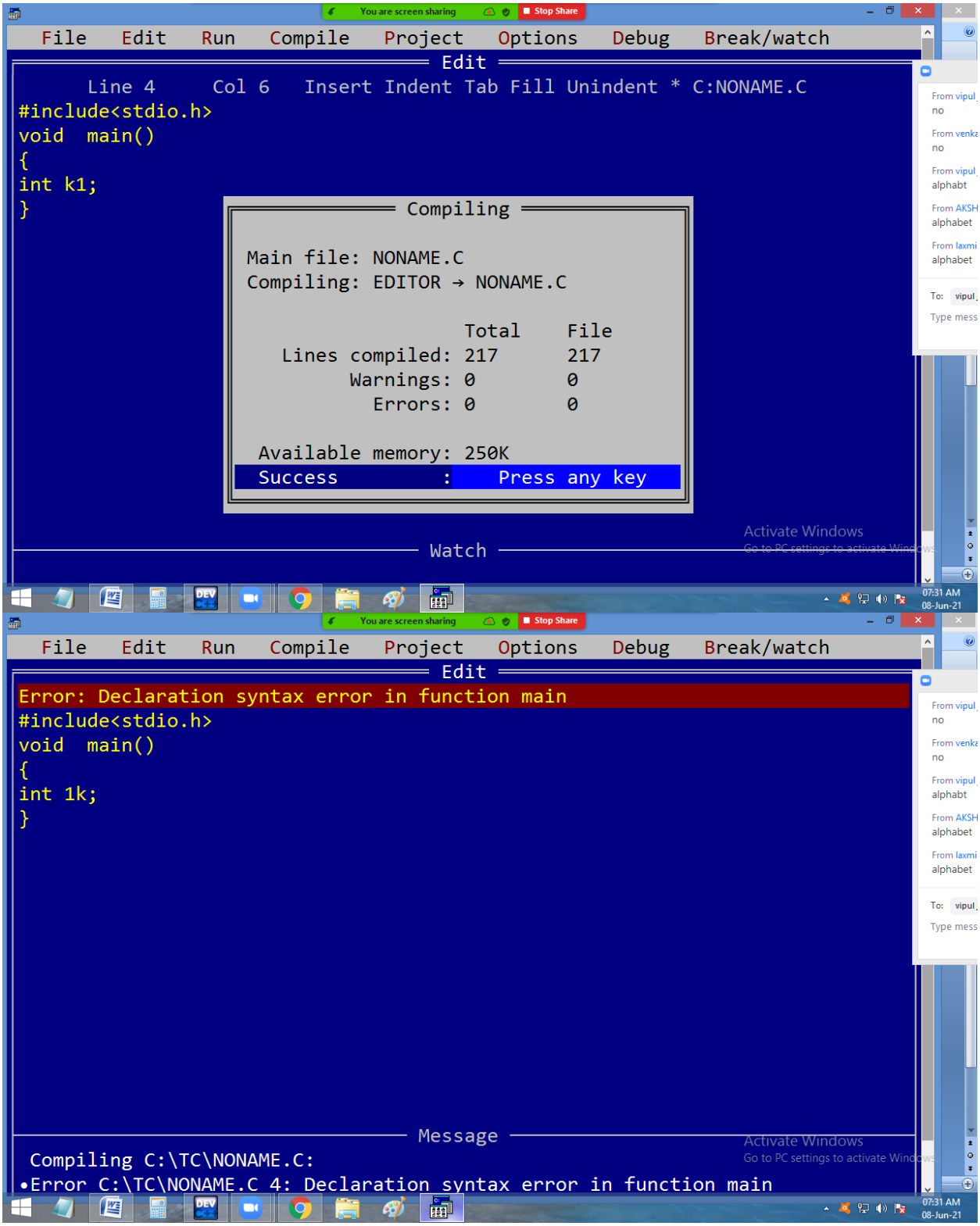
Note: when working with other compilers like dev c++, visual studio code or code blocks or freec etc we have to use system("cls") function to clear the screen contents, which belongs to <stdlib.h>

Identifier naming rules:

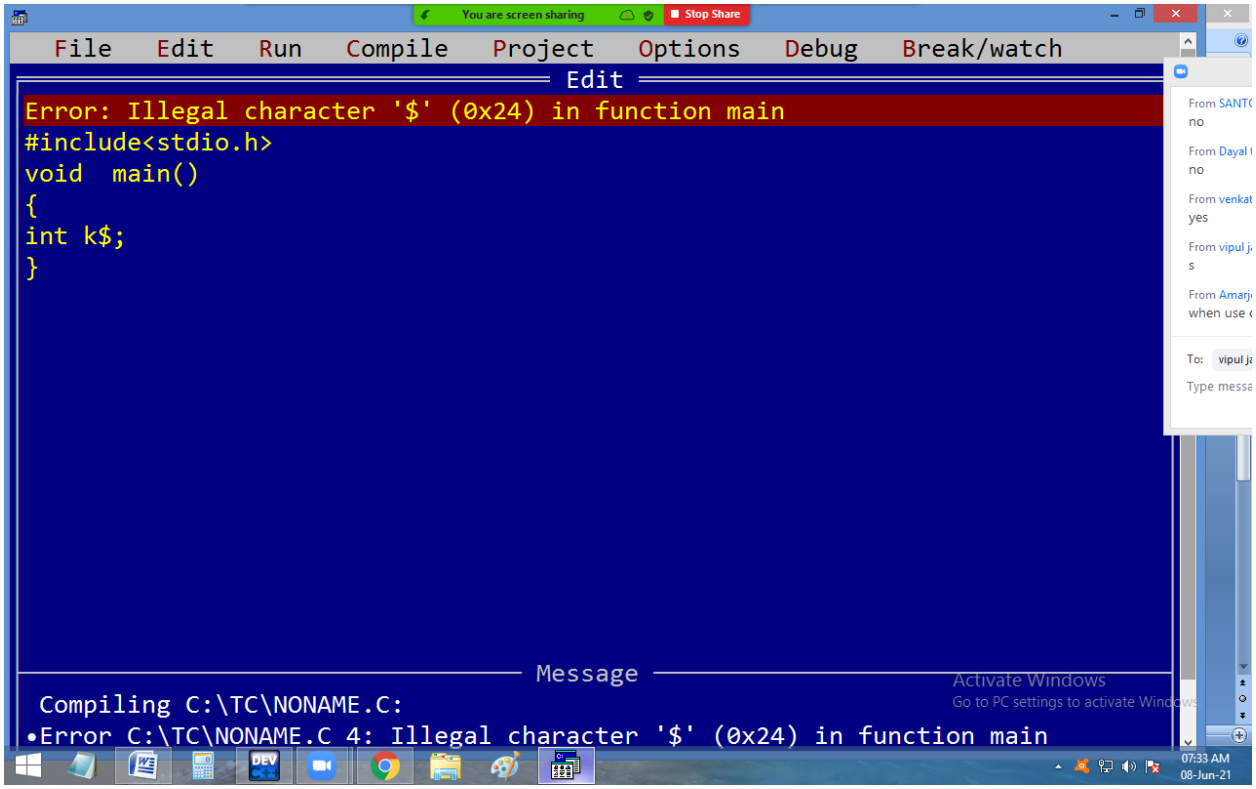
1. The name should have to start with alphabet or underscore [_] only.

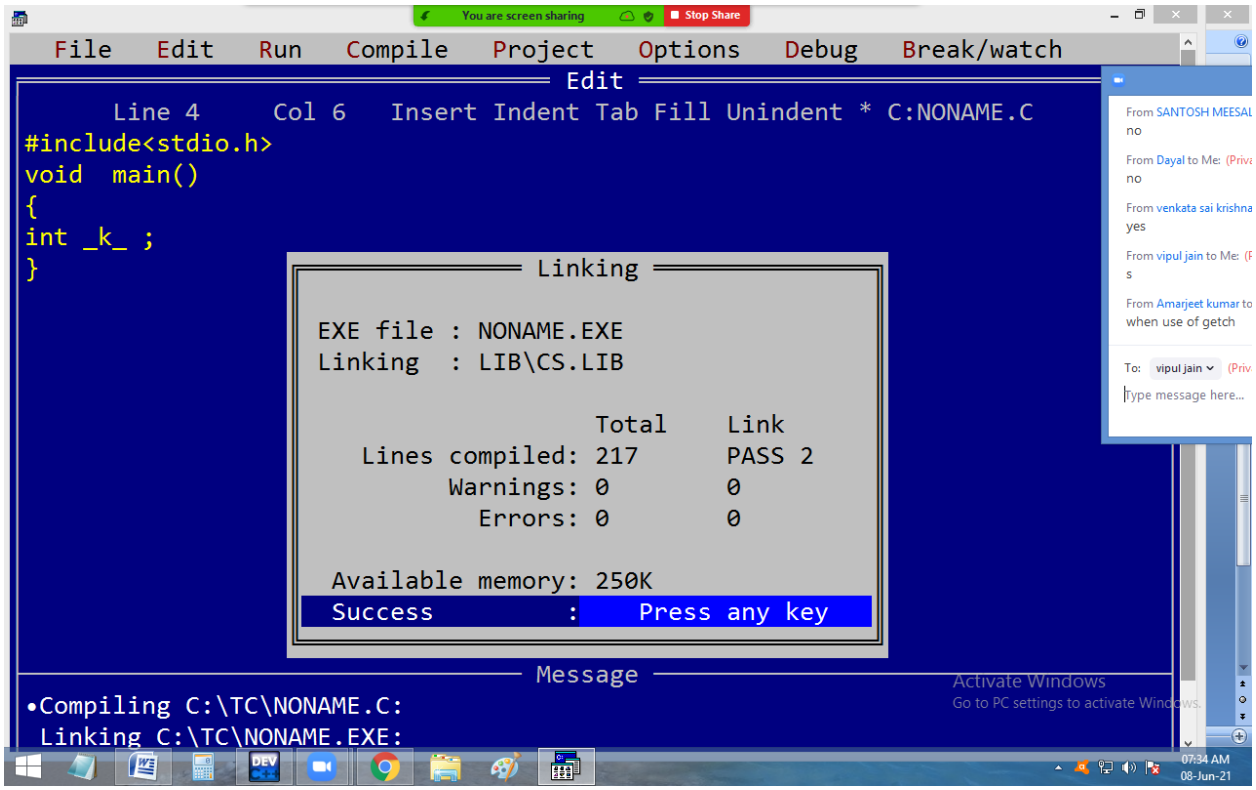
Eg:



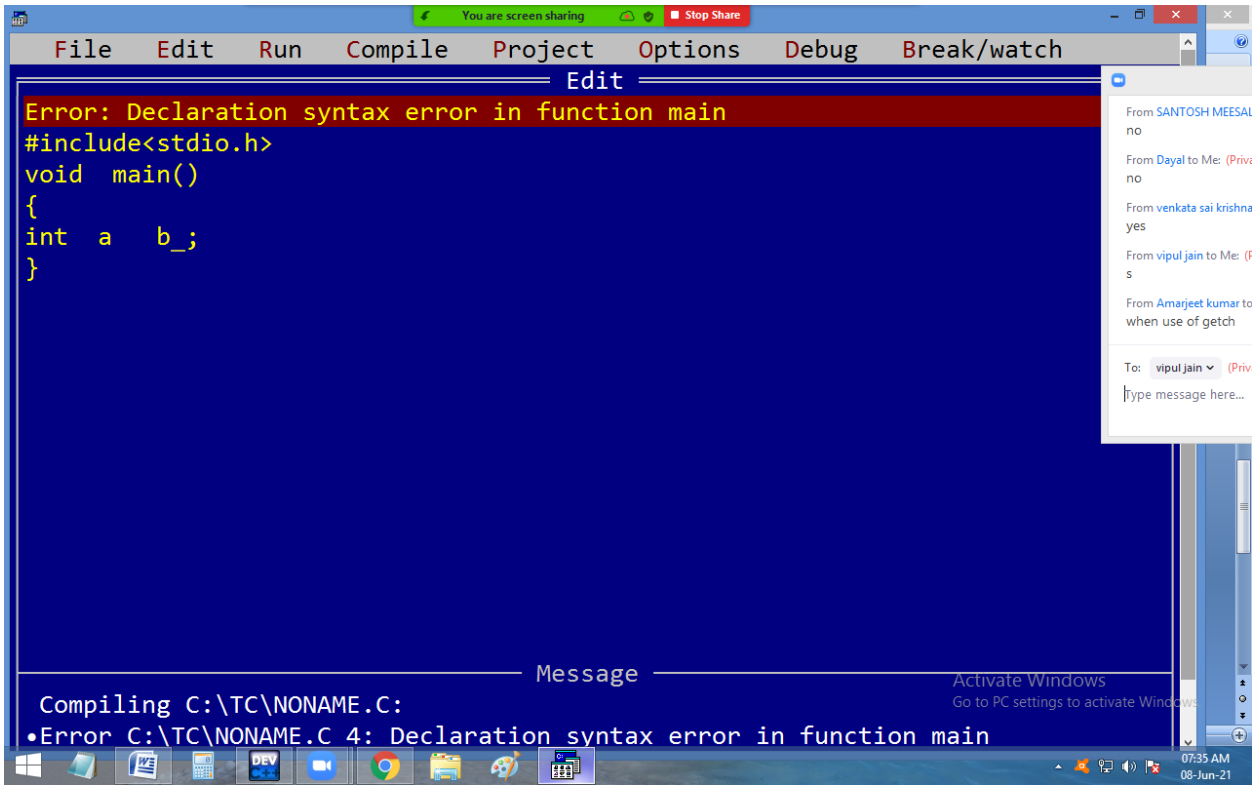
2. Numbers allowed but not at first position.

3. No special char except underscore.

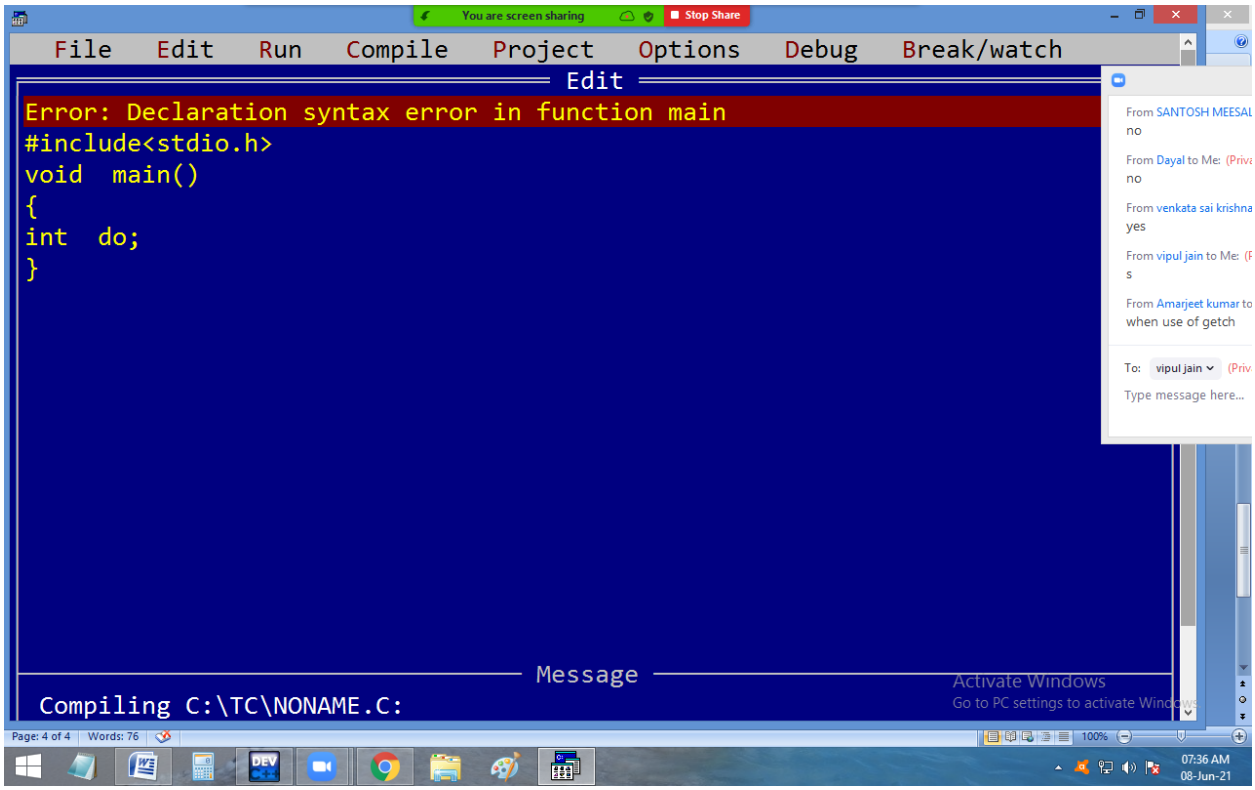




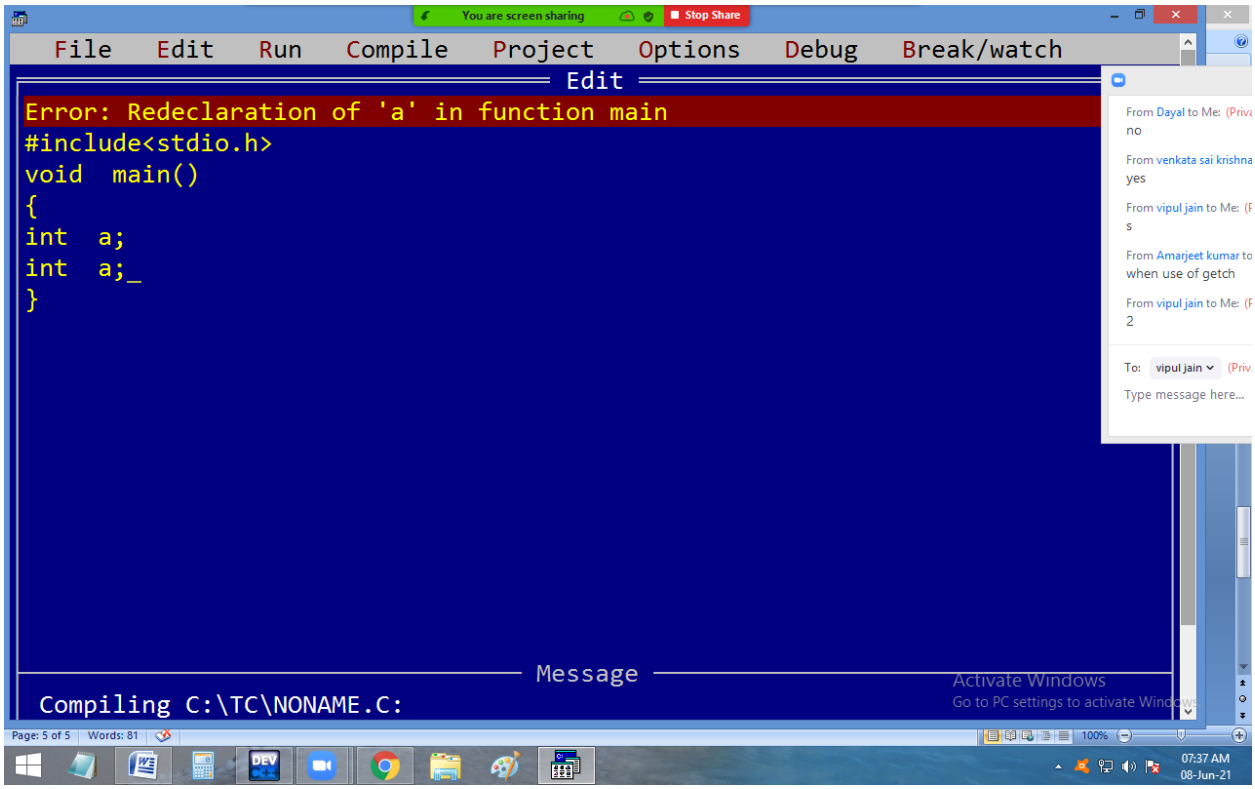
4. Spaces not allowed.

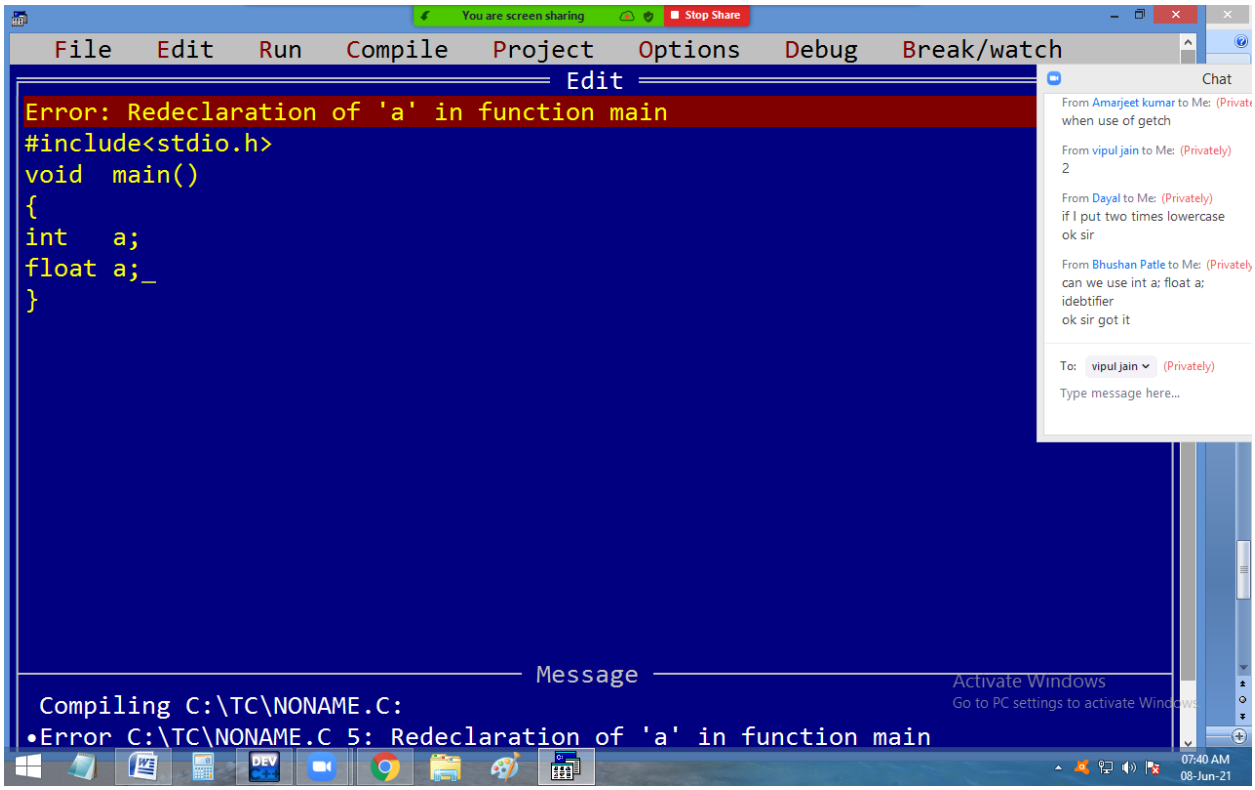


5. Keywords not allowed as identifiers.

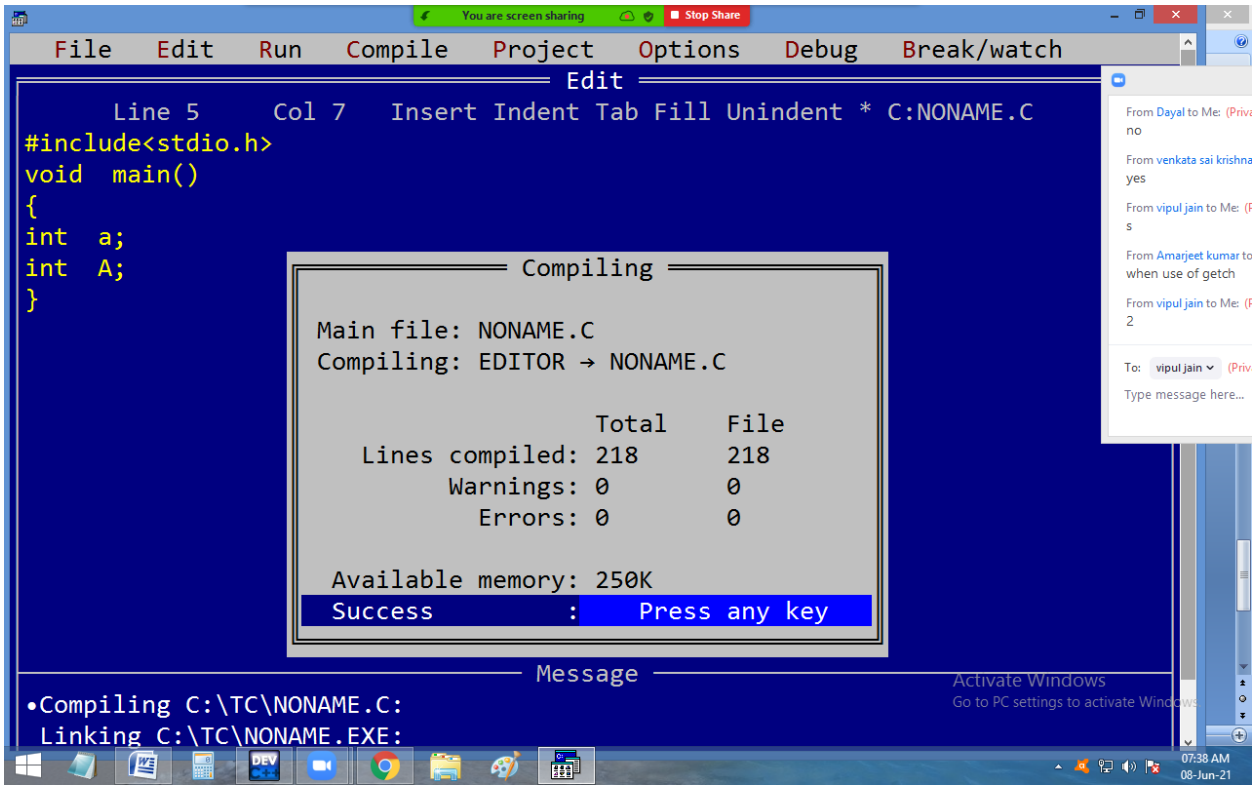


6. Duplicate names not allowed.

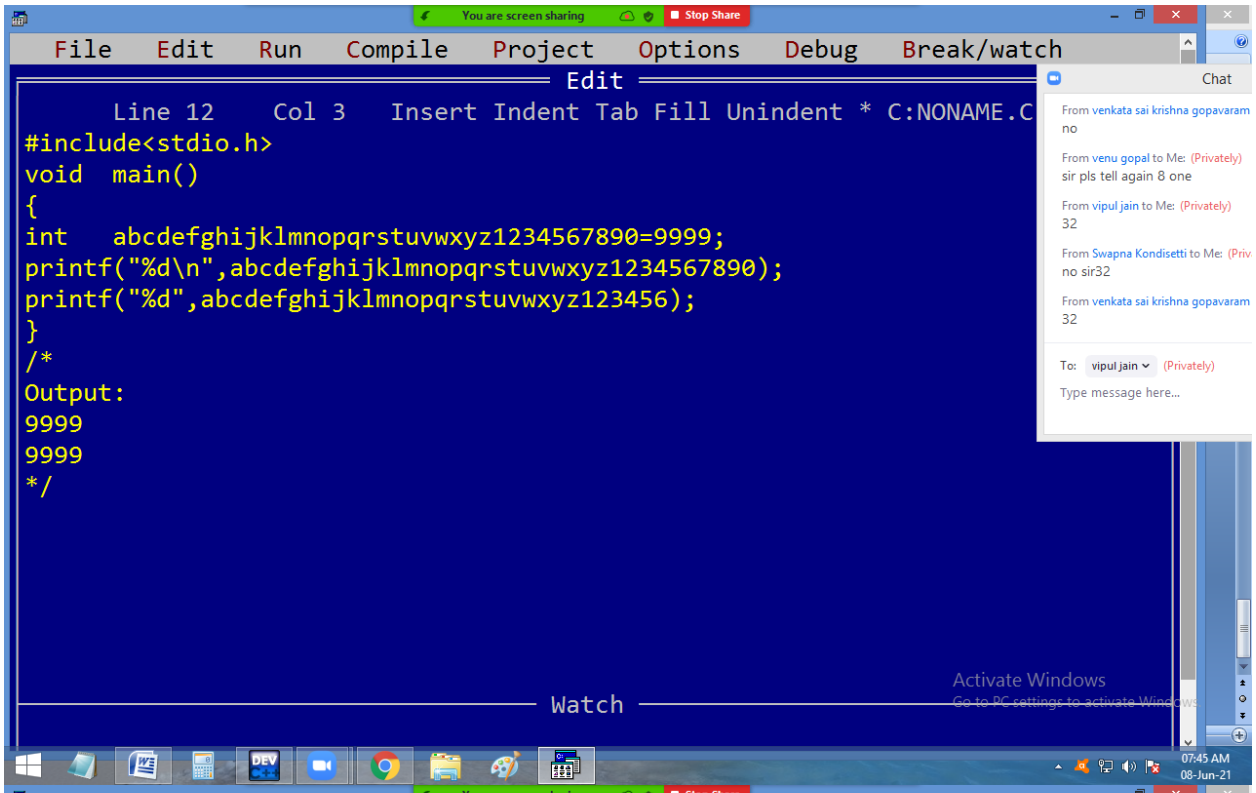


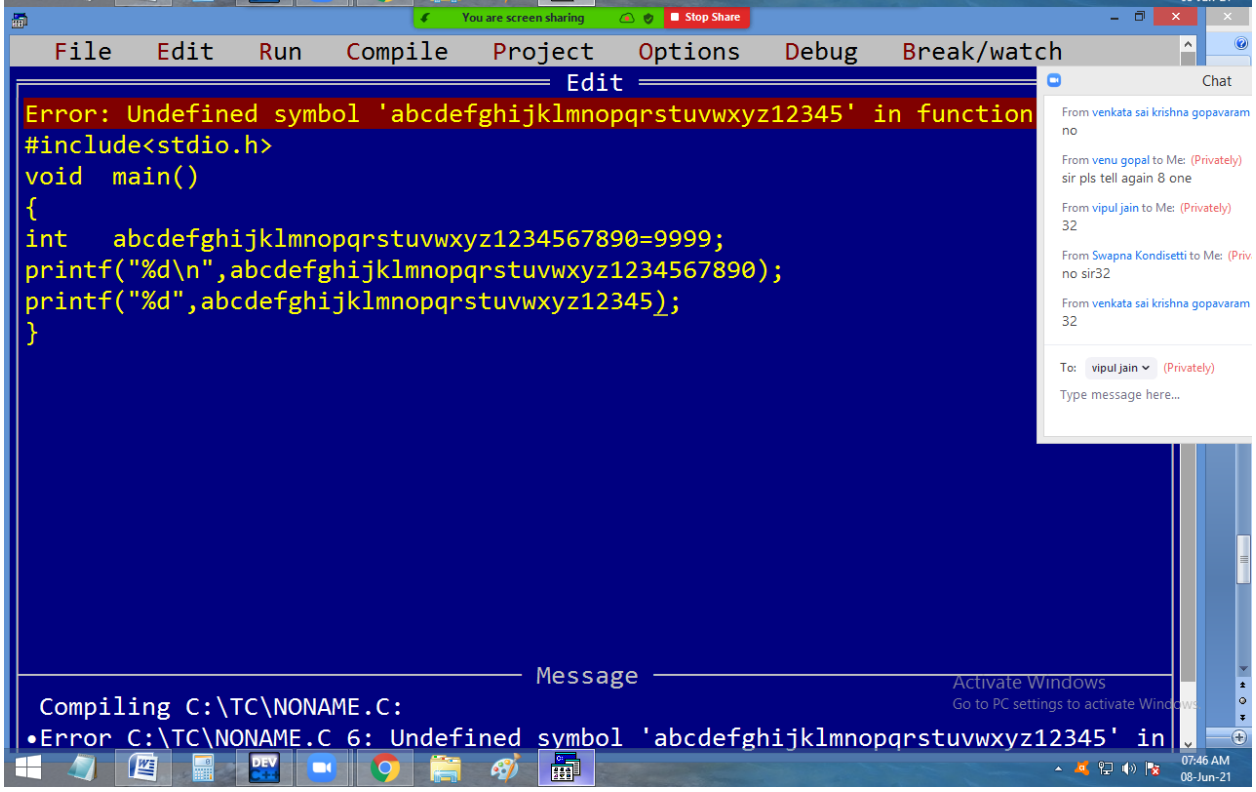


7. Identifiers are case sensitive. i.e. lower and upper are different.



8. Name may contain up to 32 characters and excess characters ignored by the compiler.


You are screen sharing
Stop Share
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 12 Col 3 Insert Indent Tab Fill Unindent * C:NONAME.C
#include<stdio.h>
void main()
{
int abcdefghijklmnopqrstuvwxyz1234567890=9999;
printf("%d\n",abcdefghijklmnopqrstuvwxyz1234567890);
printf("%d",abcdefghijklmnopqrstuvwxyz123456);
}
/*
Output:
9999
9999
*/
Watch
Chat
From venkata sai krishna gopavaram no
From venu gopal to Me: (Privately) sir pls tell again 8 one
From vipul jain to Me: (Privately) 32
From Swapna Kondisetti to Me: (Priv no sir32
From venkata sai krishna gopavaram 32
To: vipul jain (Privately)
Type message here...
Activate Windows
07:45 AM
08-Jun-21


You are screen sharing
Stop Share
File Edit Run Compile Project Options Debug Break/watch
Edit
Error: Undefined symbol 'abcdefghijklmnopqrstuvwxyz12345' in function
#include<stdio.h>
void main()
{
int abcdefghijklmnopqrstuvwxyz1234567890=9999;
printf("%d\n",abcdefghijklmnopqrstuvwxyz1234567890);
printf("%d",abcdefghijklmnopqrstuvwxyz12345);
}
Message
Compiling C:\TC\NONAME.C:
•Error C:\TC\NONAME.C 6: Undefined symbol 'abcdefghijklmnopqrstuvwxyz12345' in
Chat
From venkata sai krishna gopavaram no
From venu gopal to Me: (Privately) sir pls tell again 8 one
From vipul jain to Me: (Privately) 32
From Swapna Kondisetti to Me: (Priv no sir32
From venkata sai krishna gopavaram 32
To: vipul jain (Privately)
Type message here...
Activate Windows
07:46 AM
08-Jun-21

Constants: Fixed value and we can't change a constant value during program execution. Constant value should be provided at the time of declaration only. i.e. further initializations not allowed.

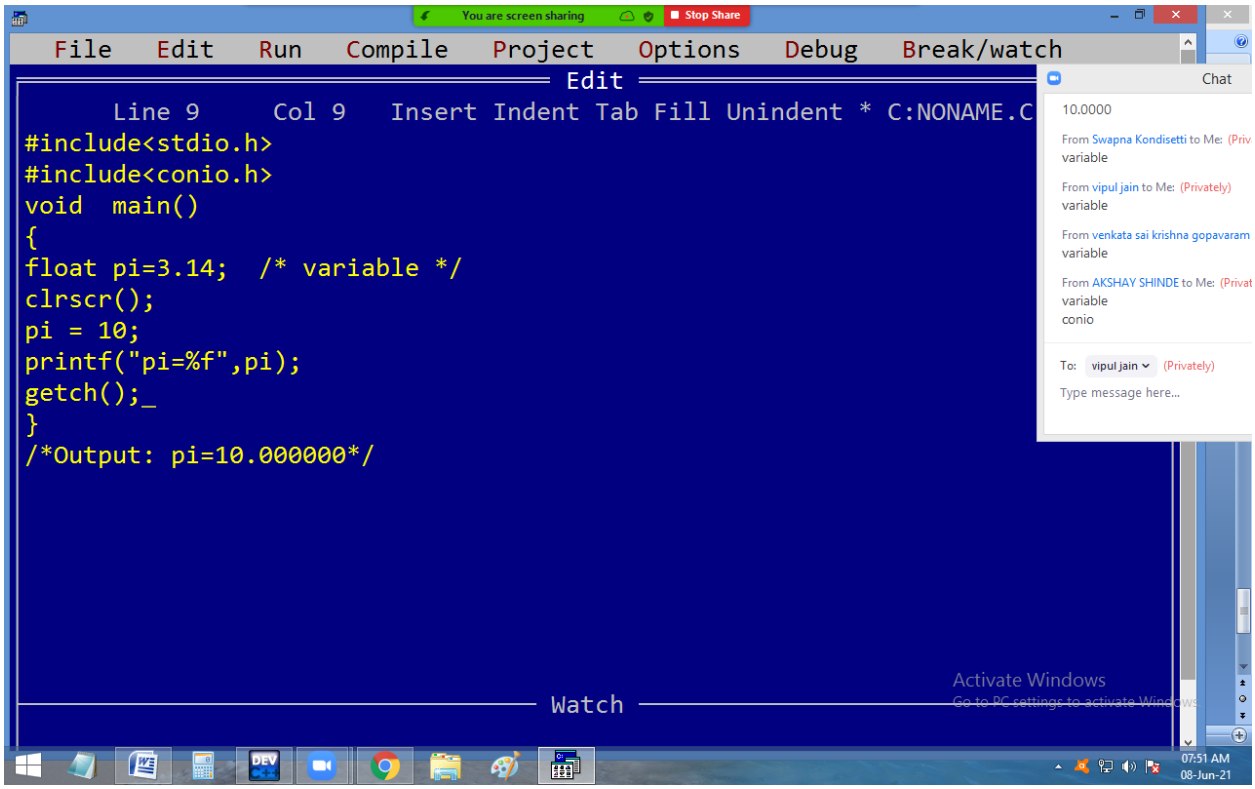
Eg:

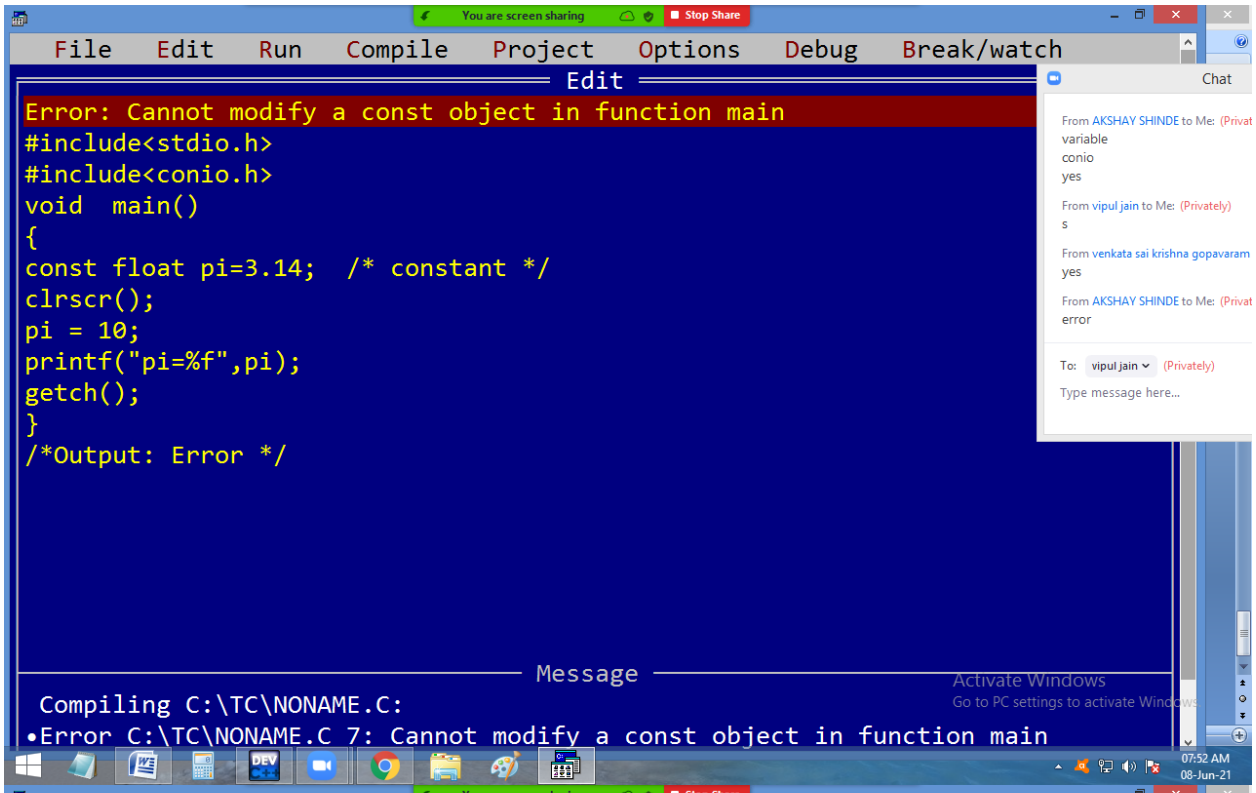
Numerical constants:

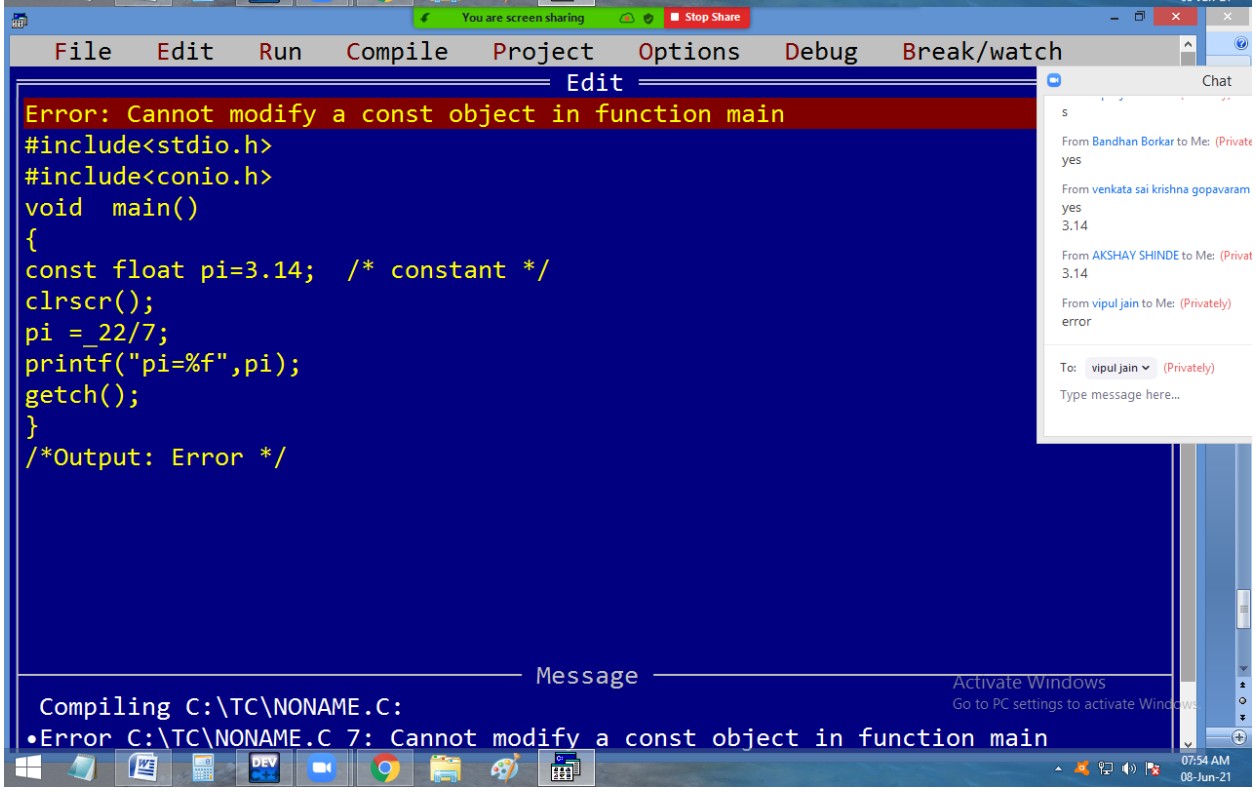
```
const float pi=3.14;
const int   rollno=1234;
```

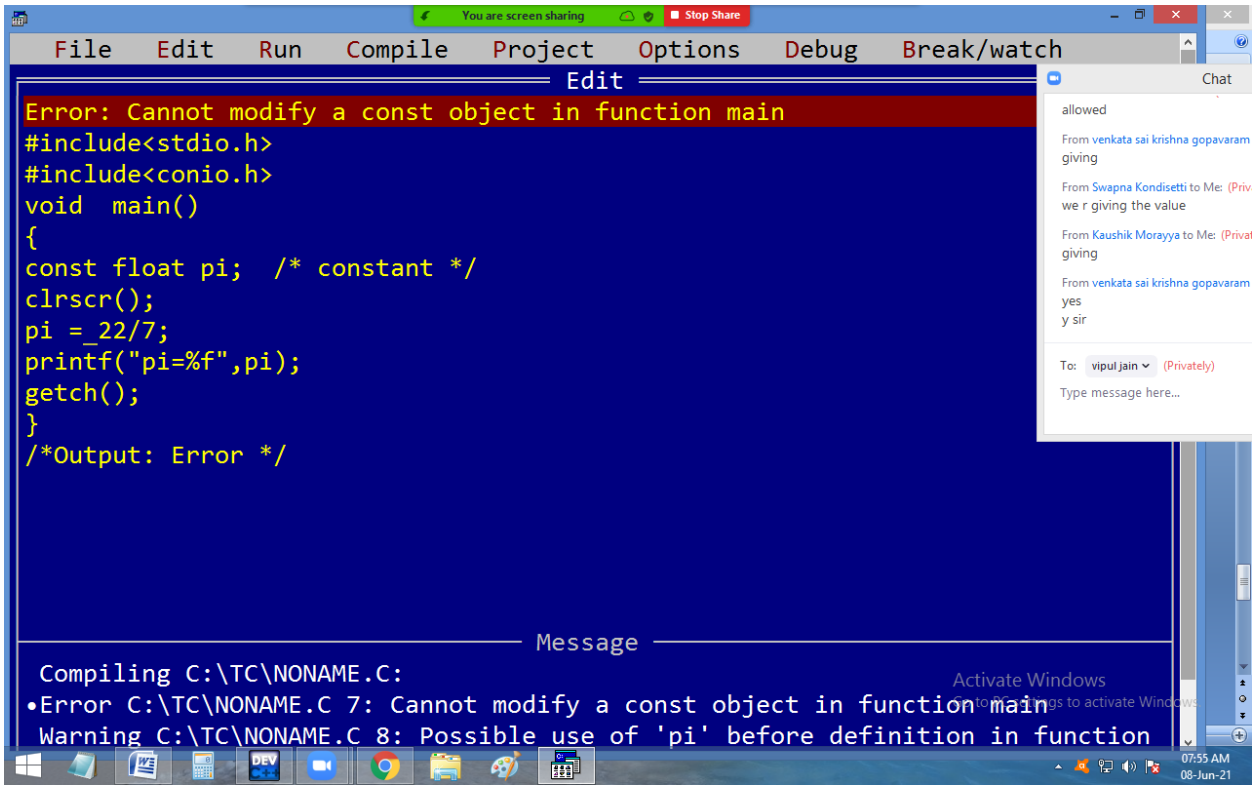
Character constants:

```
const  char  name[ ]="Ravi"; → string
const  char  gender = 'M'; → char
```


You are screen sharing
Stop Share
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 9 Col 9 Insert Indent Tab Fill Unindent * C:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
float pi=3.14; /* variable */
clrscr();
pi = 10;
printf("pi=%f",pi);
getch();_
}
/*Output: pi=10.000000*/
Watch
Chat
10.0000
From Swapna Kondisetti to Me: (Priv
variable
From vipul jain to Me: (Privately)
variable
From venkata sai krishna gopavaram
variable
From AKSHAY SHINDE to Me: (Privat
variable
conio
To: vipul jain (Privately)
Type message here...
Activate Windows
Go to PC settings to activate Windows
07:51 AM
08-Jun-21


You are screen sharing
Stop Share
File Edit Run Compile Project Options Debug Break/watch
Edit
Error: Cannot modify a const object in function main
#include<stdio.h>
#include<conio.h>
void main()
{
const float pi=3.14; /* constant */
clrscr();
pi = 10;
printf("pi=%f",pi);
getch();
}
/*Output: Error */
Chat
From AKSHAY SHINDE to Me: (Privat
variable
conio
yes
From vipul jain to Me: (Privately)
s
From venkata sai krishna gopavaram
yes
From AKSHAY SHINDE to Me: (Privat
error
To: vipul jain (Privately)
Type message here...
Message
Compiling C:\TC\NONAME.C:
•Error C:\TC\NONAME.C 7: Cannot modify a const object in function main
Activate Windows
Go to PC settings to activate Windows
07:52 AM
08-Jun-21


You are screen sharing
Stop Share
File Edit Run Compile Project Options Debug Break/watch
Edit
Error: Cannot modify a const object in function main
#include<stdio.h>
#include<conio.h>
void main()
{
const float pi=3.14; /* constant */
clrscr();
pi =_22/7;
printf("pi=%f",pi);
getch();
}
/*Output: Error */
Chat
s
From Bandhan Borkar to Me: (Private
yes
From venkata sai krishna gopavaram
yes
3.14
From AKSHAY SHINDE to Me: (Privat
3.14
From vipul jain to Me: (Privately)
error
To: vipul jain (Privately)
Type message here...
Message
Compiling C:\TC\NONAME.C:
•Error C:\TC\NONAME.C 7: Cannot modify a const object in function main
Activate Windows
Go to PC settings to activate Windows
07:54 AM
08-Jun-21

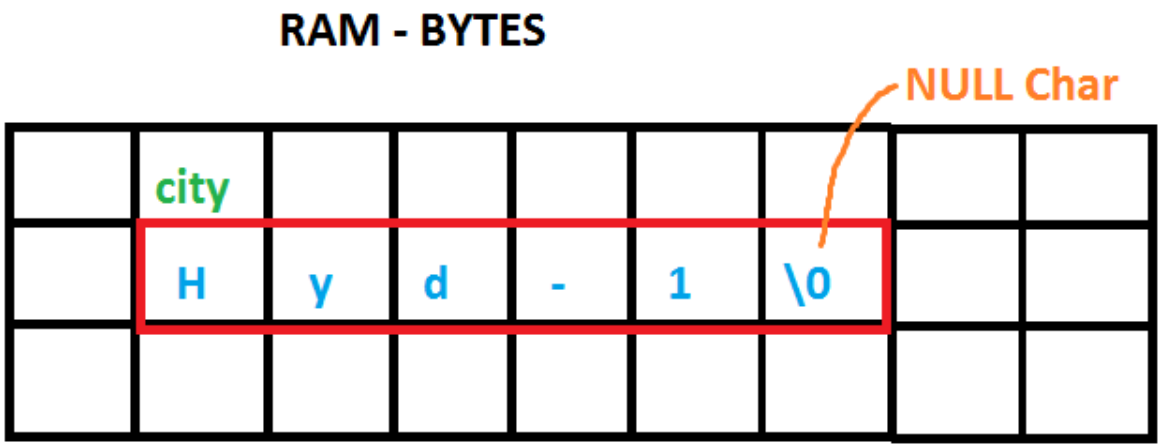


String:

A group of characters is called string.

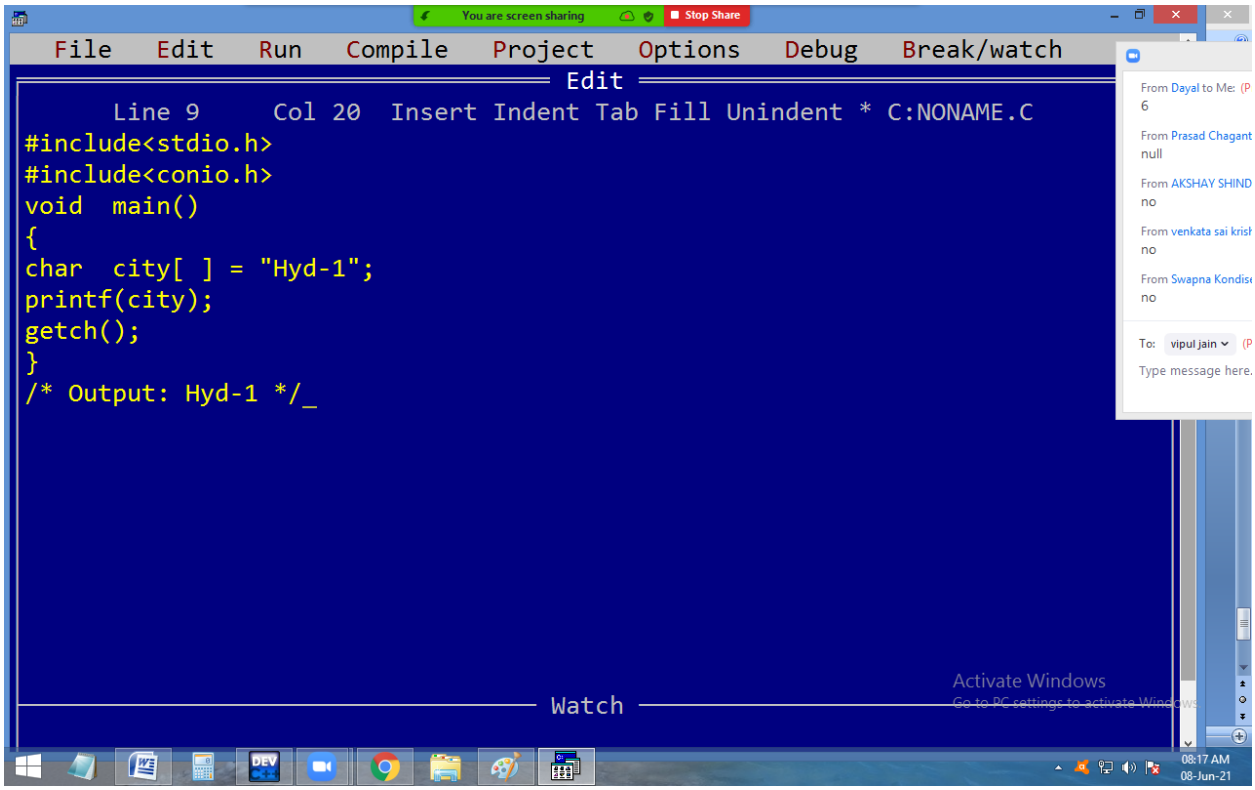
It is alpha-numeric. i.e. it can store alphabets, numbers and special characters also.

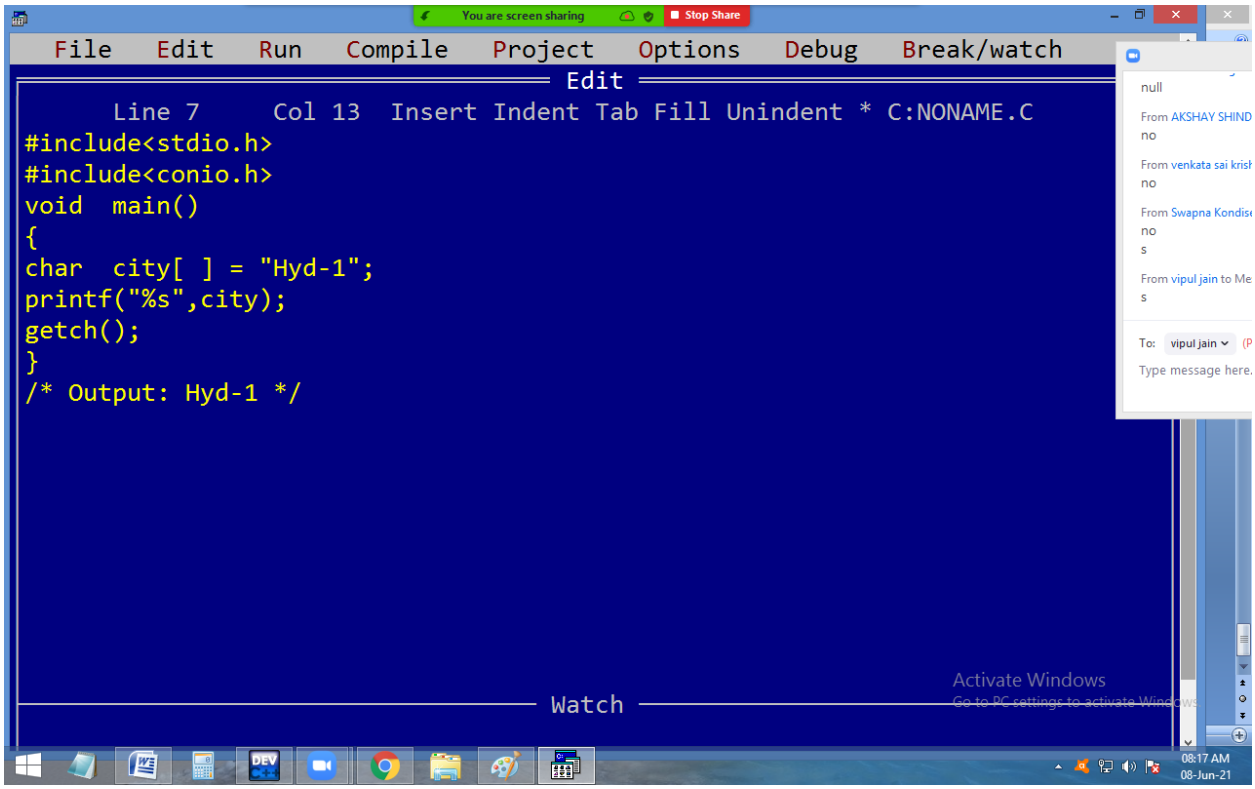
Eg: char city[ ]=”Hyd-1”;

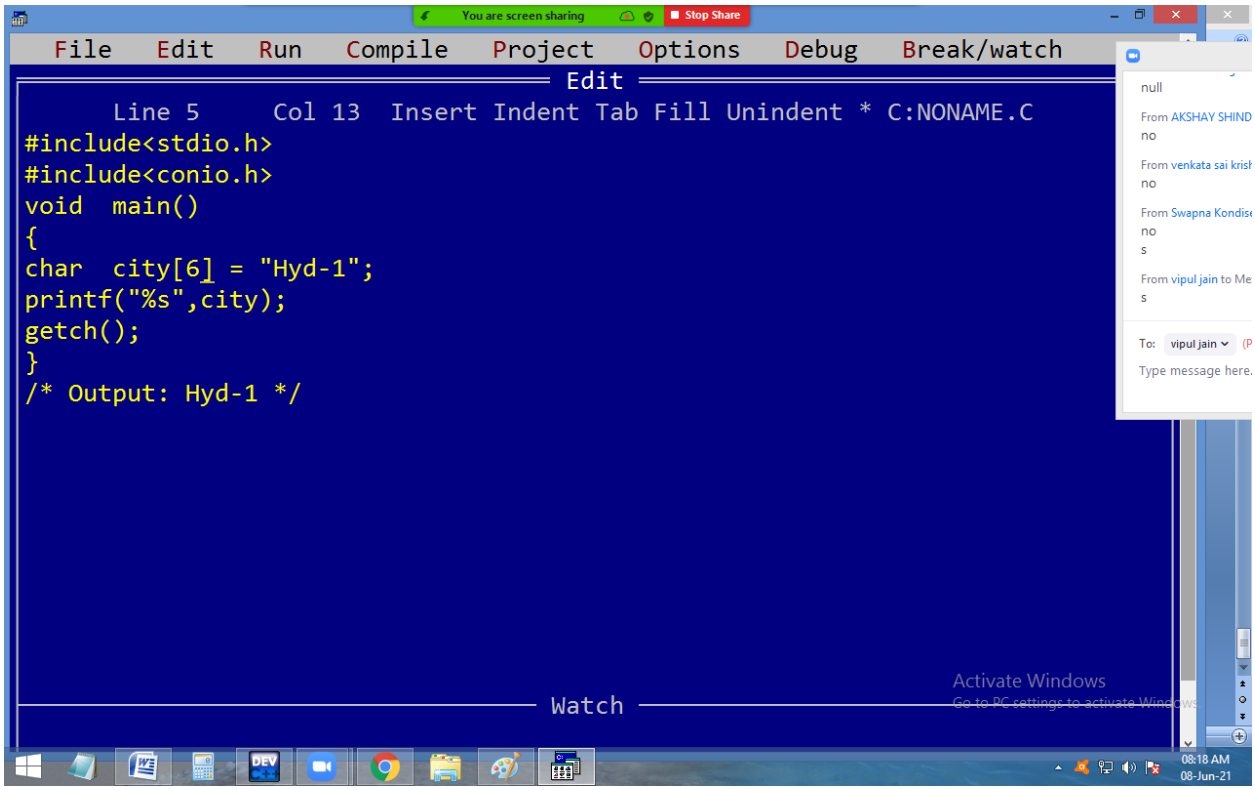


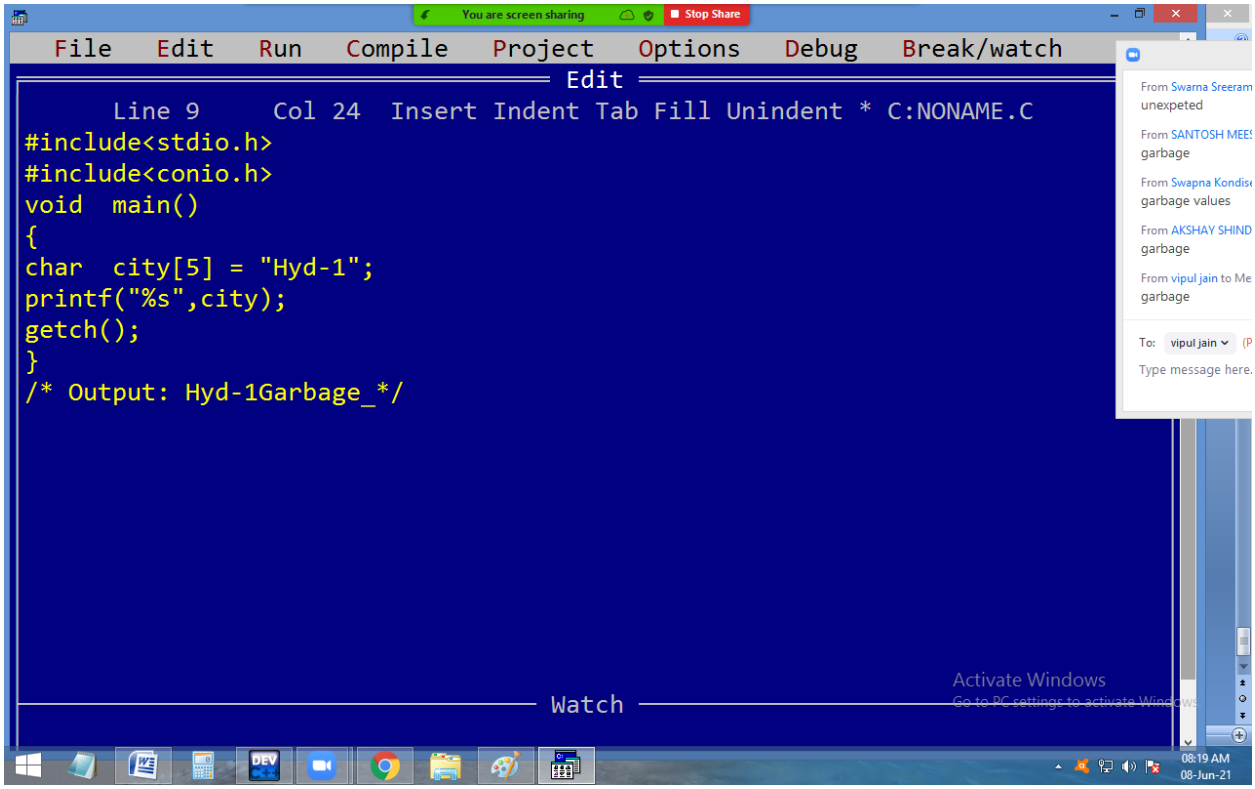
Note:

1. **One byte should be left for '\0'. Otherwise we are getting garbage.**

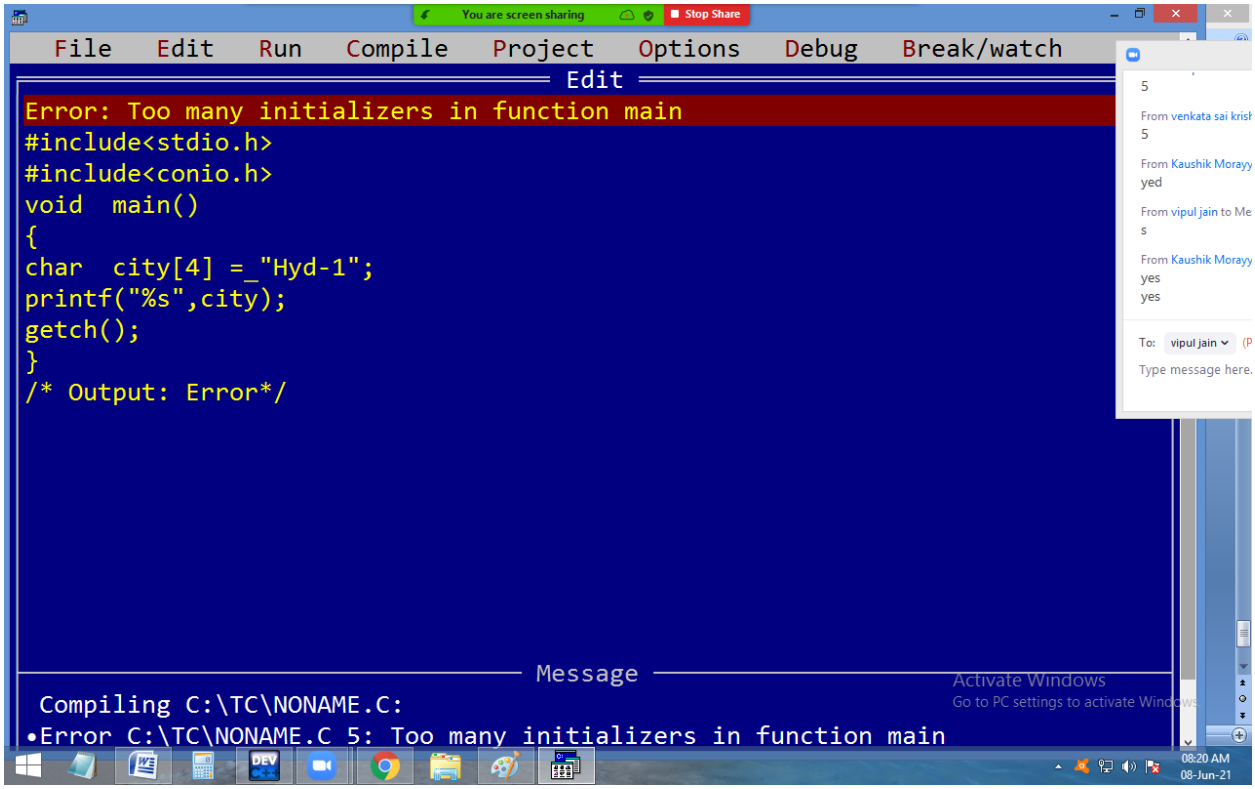



You are screen sharing
Stop Share
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 7 Col 13 Insert Indent Tab Fill Unindent * C:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
char city[ ] = "Hyd-1";
printf("%s",city);
getch();
}
/* Output: Hyd-1 */
Watch
Activate Windows
08:17 AM
08-Jun-21


You are screen sharing
Stop Share
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 5 Col 13 Insert Indent Tab Fill Unindent * C:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
char city[6] = "Hyd-1";
printf("%s",city);
getch();
}
/* Output: Hyd-1 */
Watch
Activate Windows
08:18 AM
08-Jun-21



2. String variable size never smaller than the string.



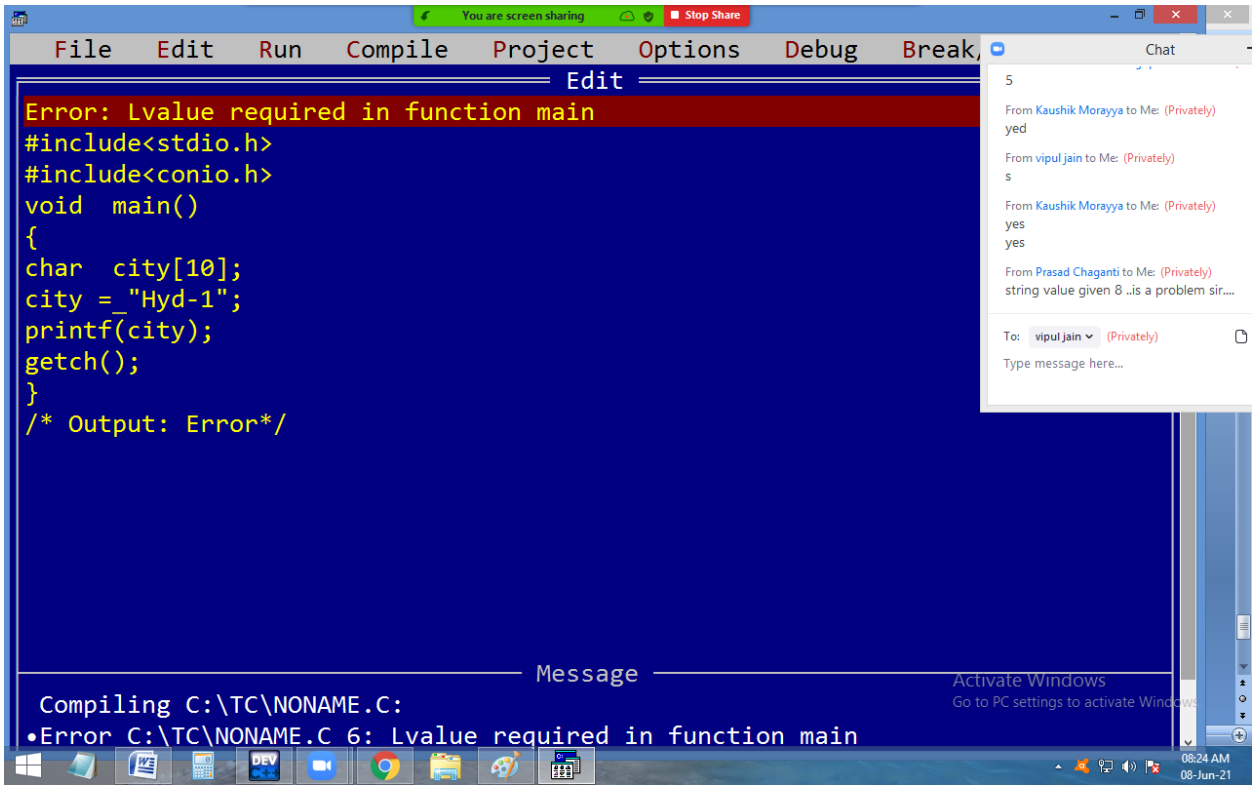
3. We can’t copy a string using = operator. For this we have to use strcpy() available in <string.h>

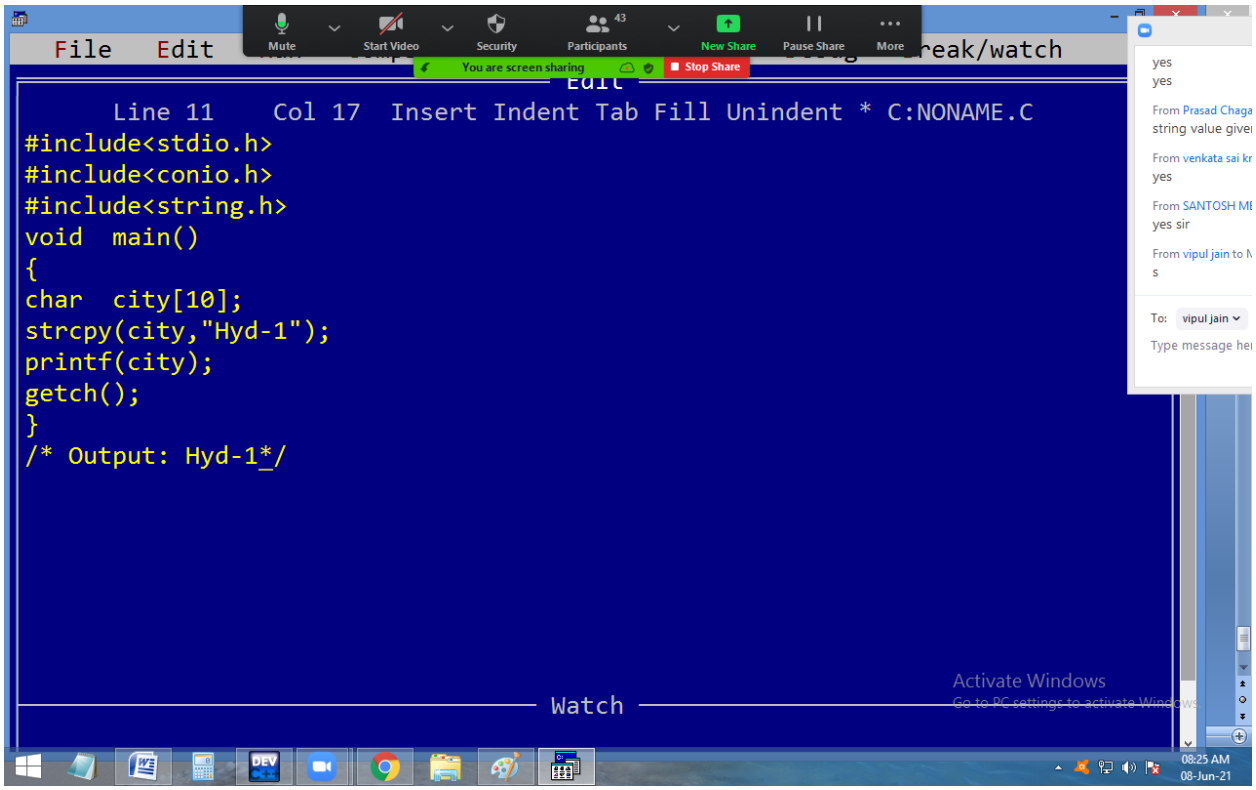
   int a; /* variable declaration */

   a=100; /* initialization */

   char city[10];

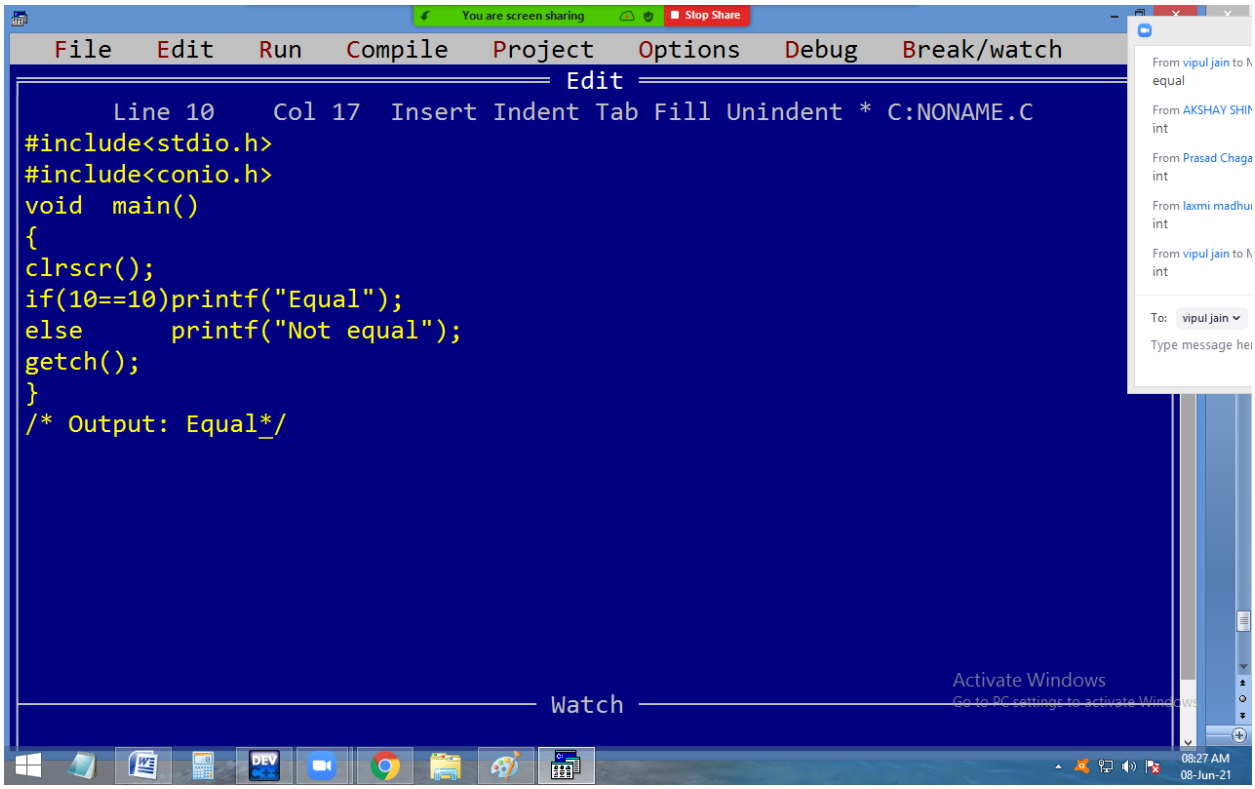
   city=”Hyd-1”; ➔ error

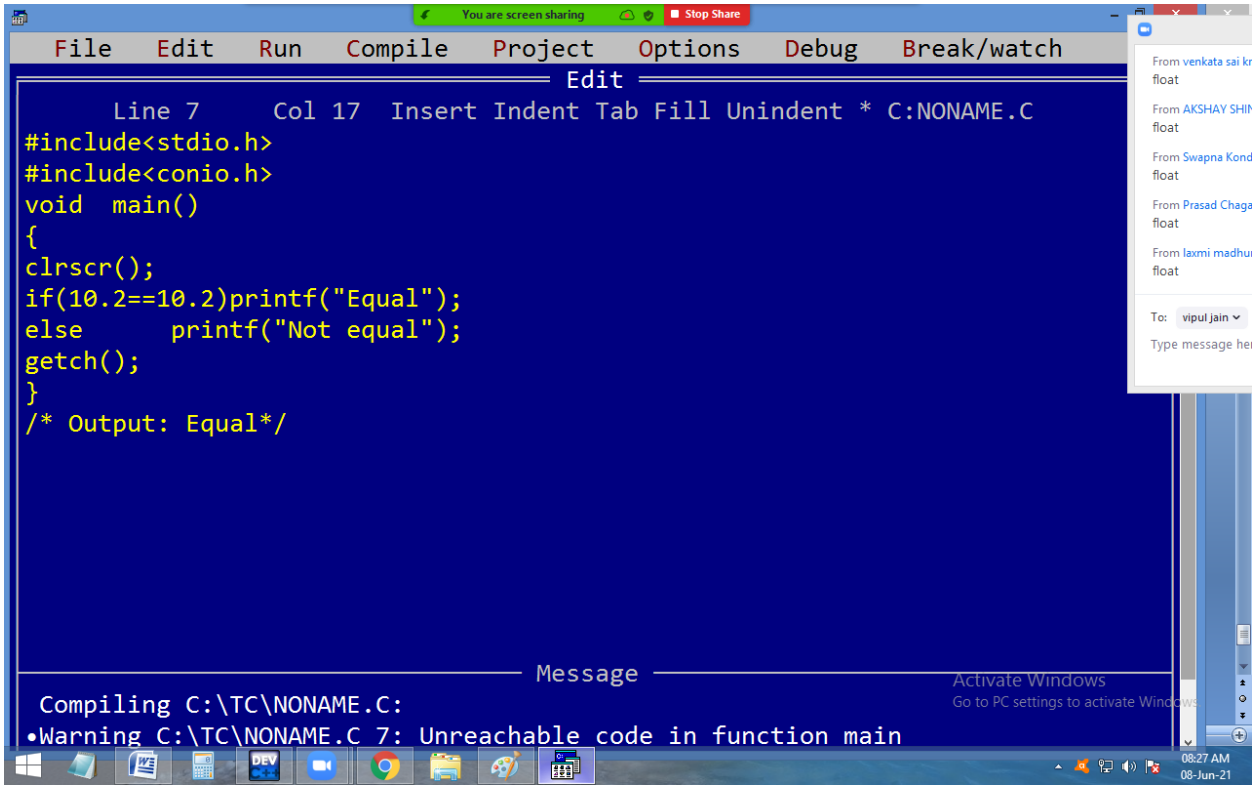

You are screen sharing
Stop Share
File Edit Run Compile Project Options Debug Break/
Edit
Error: Lvalue required in function main
#include<stdio.h>
#include<conio.h>
void main()
{
char city[10];
city ="Hyd-1";
printf(city);
getch();
}
/* Output: Error*/
Chat
5
From Kaushik Morayya to Me: (Privately)
yed
From vipul jain to Me: (Privately)
s
From Kaushik Morayya to Me: (Privately)
yes
yes
From Prasad Chaganti to Me: (Privately)
string value given 8 ..is a problem sir....
To: vipul jain (Privately)
Type message here...
Message
Compiling C:\TC\NONAME.C:
Error C:\TC\NONAME.C 6: Lvalue required in function main
Activate Windows
08:24 AM
08-Jun-21

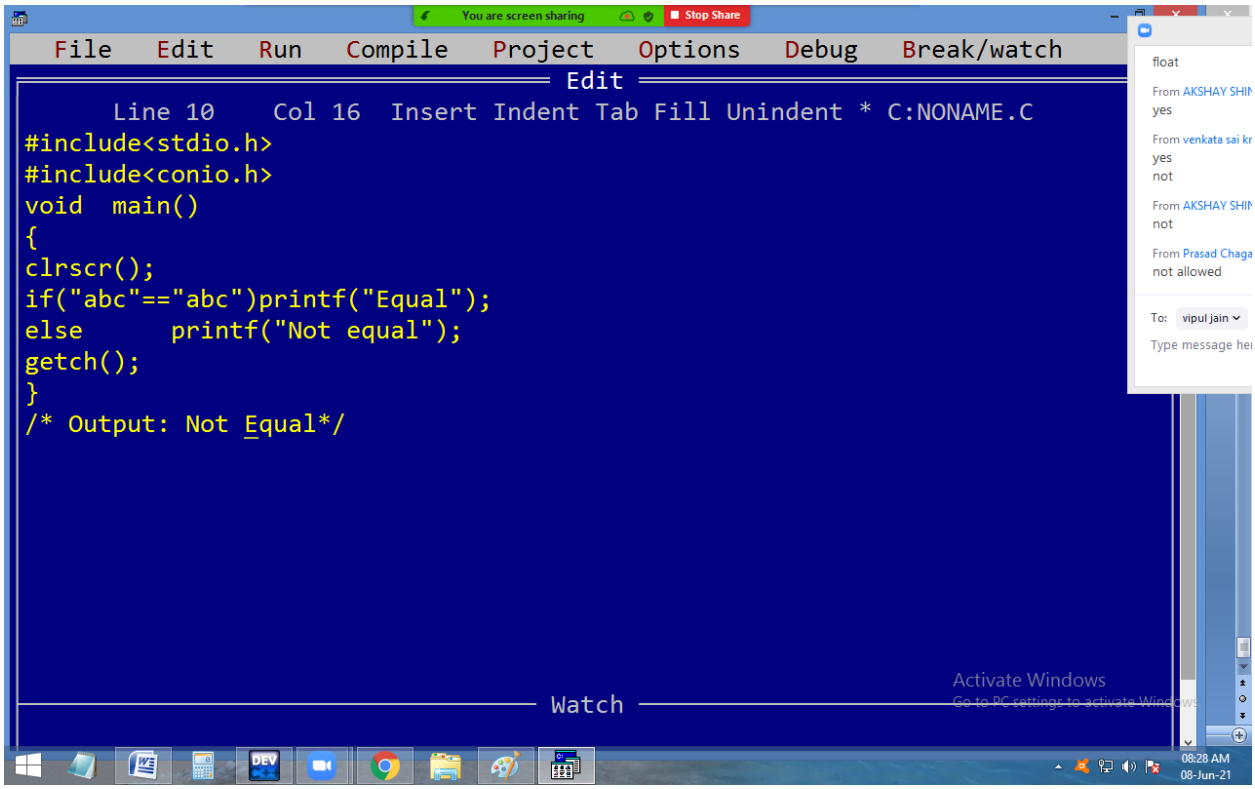

Mute
Start Video
Security
Participants
New Share
Pause Share
More
You are screen sharing
Stop Share
File Edit
reak/watch
Edit
Line 11 Col 17 Insert Indent Tab Fill Unindent * C:NONAME.C
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
char city[10];
strcpy(city,"Hyd-1");
printf(city);
getch();
}
/* Output: Hyd-1*/
yes
yes
From Prasad Chaga
string value give
From venkata sai kr
yes
From SANTOSH M
yes sir
From vipul jain to
s
To: vipul jain
Type message he
Watch
Activate Windows
08:25 AM
08-Jun-21

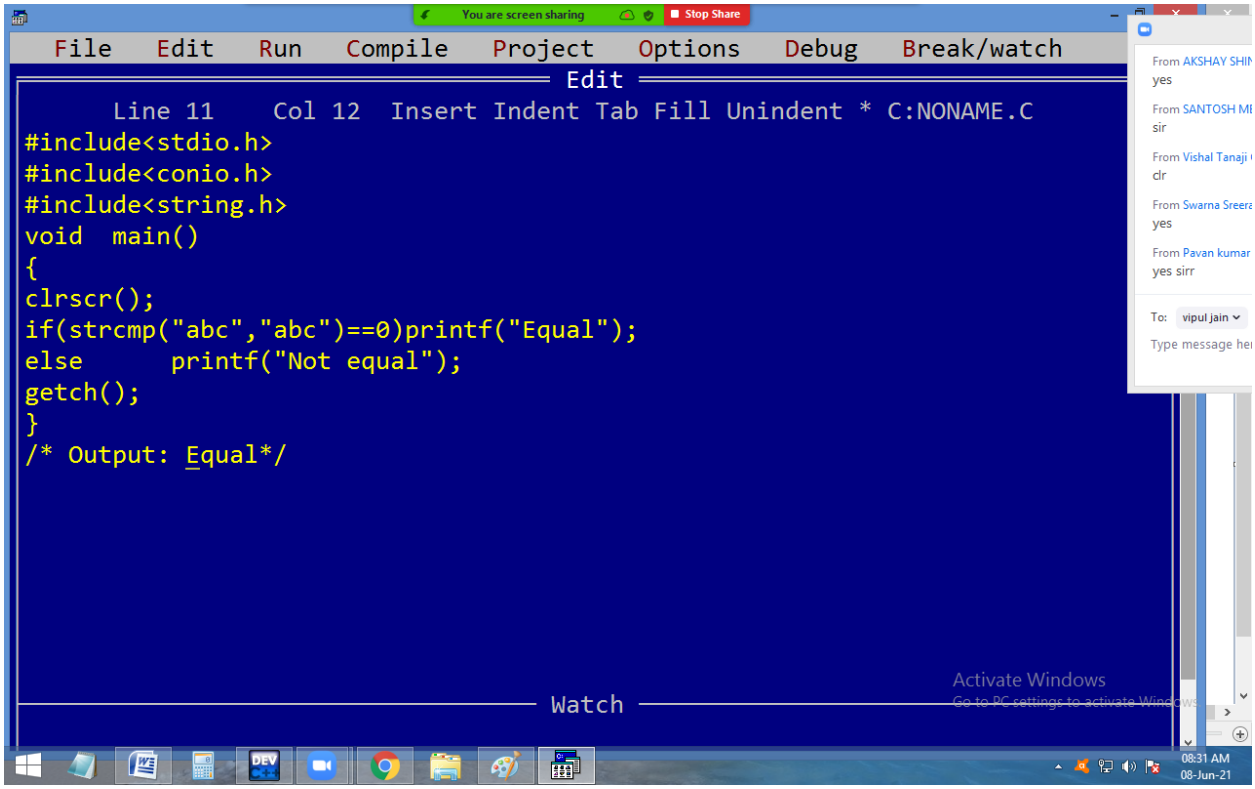
4. We can’t compare two strings using == operator. For this we have to use strcmp() available in string.h

   Eg:


You are screen sharing
Stop Share
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 10 Col 17 Insert Indent Tab Fill Unindent * C:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if(10==10)printf("Equal");
else printf("Not equal");
getch();
}
/* Output: Equal*/
Watch
Activate Windows
08:27 AM
08-Jun-21


You are screen sharing
Stop Share
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 7 Col 17 Insert Indent Tab Fill Unindent * C:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if(10.2==10.2)printf("Equal");
else printf("Not equal");
getch();
}
/* Output: Equal*/
Message
Compiling C:\TC\NONAME.C:
•Warning C:\TC\NONAME.C 7: Unreachable code in function main
Activate Windows
08:27 AM
08-Jun-21


You are screen sharing
Stop Share
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 10 Col 16 Insert Indent Tab Fill Unindent * C:NONAME.C
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
if("abc"=="abc")printf("Equal");
else printf("Not equal");
getch();
}
/* Output: Not Equal*/
Watch
Activate Windows
08:28 AM
08-Jun-21


You are screen sharing
Stop Share
File Edit Run Compile Project Options Debug Break/watch
Edit
Line 11 Col 12 Insert Indent Tab Fill Unindent * C:NONAME.C
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
clrscr();
if(strcmp("abc","abc")==0)printf("Equal");
else printf("Not equal");
getch();
}
/* Output: Equal*/
Watch
Activate Windows
08:31 AM
08-Jun-21

DATA TYPES

Data type determines the type of value we are going to store in our computer. To store anything in our computer, we should have to allocate the memory. This memory allocation is depended on the data type we are using.

Data type determines the properties such as

1. No of bytes
2. Range
3. Type of value
4. Conversion character etc of.

In C language we are having 3 **basic** data types

1. **Int ➔ non decimal numbers**
2. **Float ➔ decimal numbers**
3. **Char ➔ alpha-numeric**

Total data types are divided into 3 types.

1. **Primitive data types**
2. **Derived data types**
3. **User defined data types**

PRIMITIVE DATA TYPES:

These are the regular data types we are using in our c programs.

Data type	Bytes	Conversion Character / format specifier	Range
int / signed int / short int	2	%d	-32768 to +32767
unsigned int	2	%u	0 to 65535
long int	4	%ld	-2147483648 to 2147483647
unsigned long int	4	%lu	0 to 4294967295
float	4	%f	$3.4 * 10^{-38}$ to $3.4 * 10^{+38}$
double	8	%lf	$1.7 * 10^{-308}$ to $1.7 * 10^{+308}$
long double	10	%Lf	$3.4 * 10^{-4932}$ to $1.1*10^{+4932}$
Char ASCII set	1	%c	1 character Signed char [-128 to +127] Unsigned char [0 to 255]
char[10] (STRING)	10	%s	9 char + 1 null char
void [empty data type]			nothing

Note: In 16 bit dos based compilers like turbo c, turbo c++ int is taking 2 bytes memory only. But windows based compilers & gcc compilers take 4 bytes for int.

DERIVED DATA TYPES:

They are derived from primitive data types.

1. **Array**
2. **Pointer**
3. **Function**

USER DEFINED DATA TYPES:

These are the data types created by the user.

1. structure
2. union
3. enum