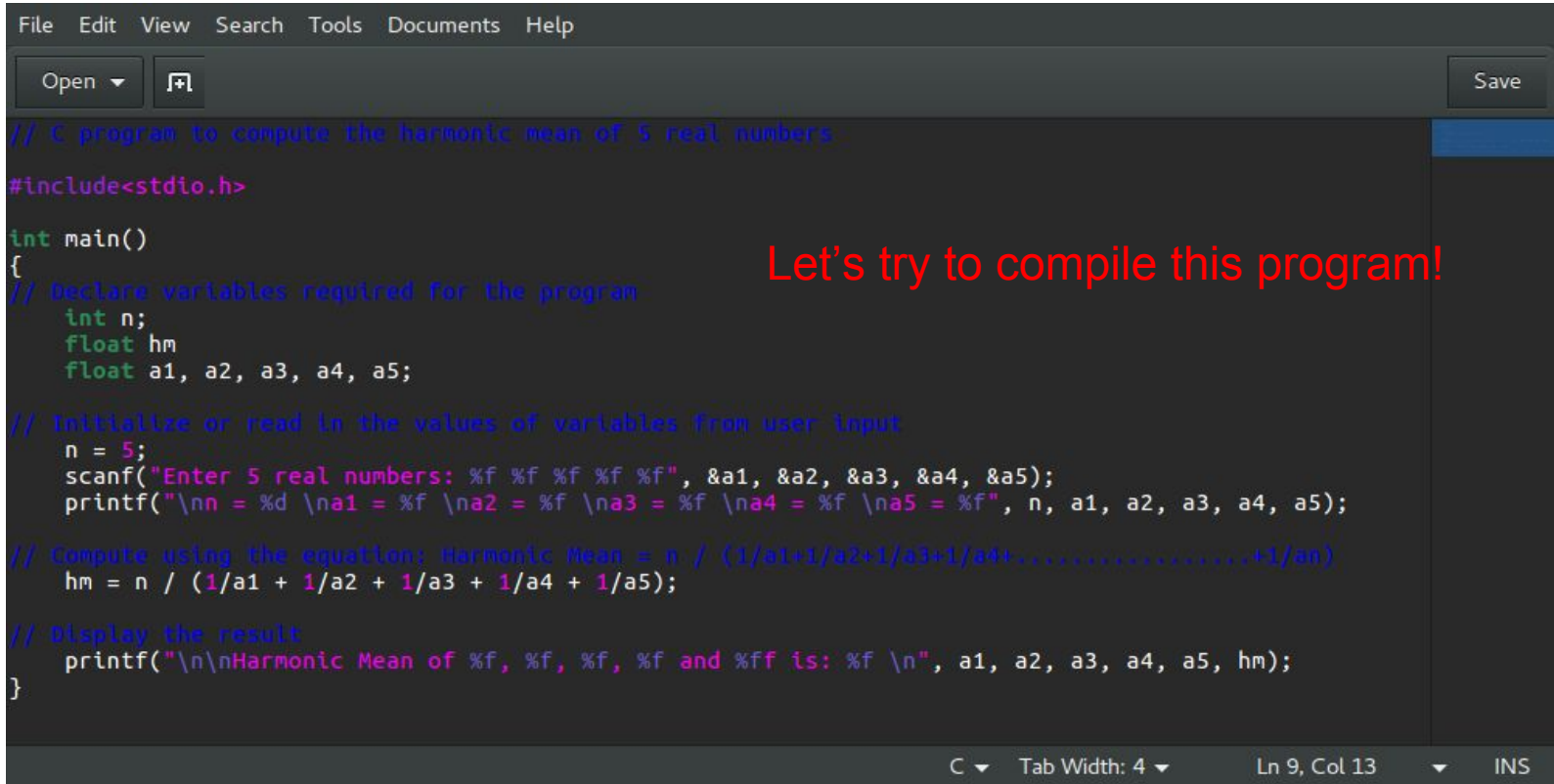


# Basic Compilation Errors and Debugging

PDS Lab Section 15

Pritam Bhattacharya

# Using Line Numbers to Locate Errors ...



```
// C program to compute the harmonic mean of 5 real numbers.
#include<stdio.h>

int main()
{
// Declare variables required for the program
    int n;
    float hm
    float a1, a2, a3, a4, a5;

// Initialize or read in the values of variables from user input
    n = 5;
    scanf("Enter 5 real numbers: %f %f %f %f %f", &a1, &a2, &a3, &a4, &a5);
    printf("\nn = %d \na1 = %f \na2 = %f \na3 = %f \na4 = %f \na5 = %f", n, a1, a2, a3, a4, a5);

// Compute using the equation: Harmonic Mean = n / (1/a1+1/a2+1/a3+1/a4+.....+1/an)
    hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);

// Display the result
    printf("\n\nHarmonic Mean of %f, %f, %f, %f and %ff is: %f \n", a1, a2, a3, a4, a5, hm);
}
```

Let's try to compile this program!

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# Using Line Numbers to Locate Errors ...

```
File Edit View Search Terminal Tabs Help
pritam@pritam-HP-Notebook: ~
pritam@pritam-HP-Notebook: ~/Dropbox/IIT-KG...
pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$ gcc harmonic_mean.c
harmonic_mean.c: In function 'main':
harmonic_mean.c:10:5: error: expected '=', ',', ';', 'asm' or '__attribute__' before 'float'
    float a1, a2, a3, a4, a5;
    ^
harmonic_mean.c:18:5: error: 'hm' undeclared (first use in this function)
    hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
    ^
harmonic_mean.c:18:5: note: each undeclared identifier is reported only once for each function
it appears in
pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$
```

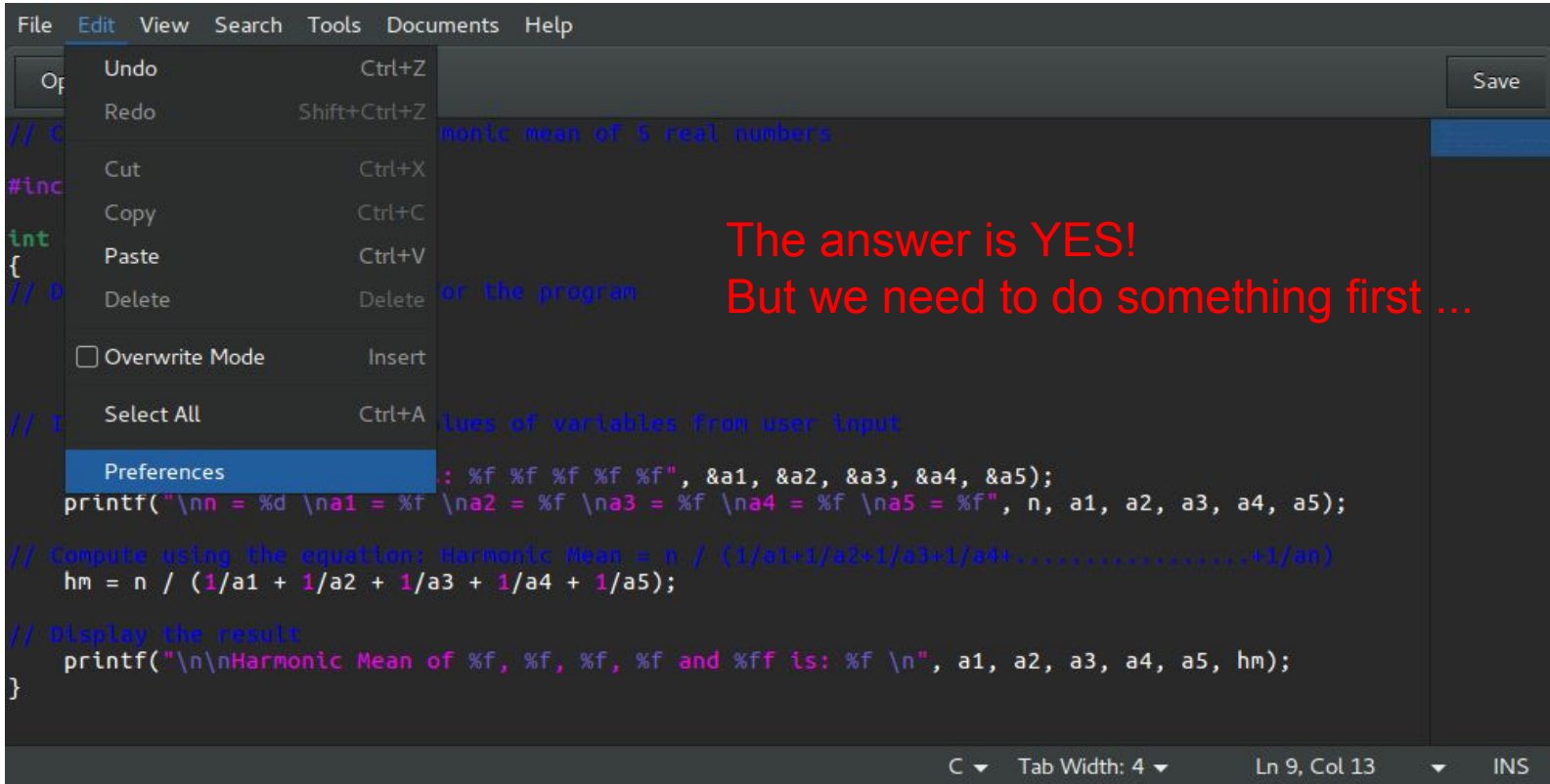
Compilation fails - it says that we have 3 errors in our code!!

# Using Line Numbers to Locate Errors ...

```
File Edit View Search Terminal Tabs Help
pritam@pritam-HP-Notebook: ~
pritam@pritam-HP-Notebook: ~/Dropbox/IIT-KG...
pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$ gcc harmonic_mean.c
harmonic_mean.c: In function 'main':
harmonic_mean.c:10:5: error: expected '=', ',', ';', 'asm' or '__attribute__' before 'float'
    float a1, a2, a3, a4, a5;
    ^
harmonic_mean.c:18:5: error: 'hm' undeclared (first use in this function)
    hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
    ^
harmonic_mean.c:18:5: note: each undeclared identifier is reported only once for each function
it appears in
pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$
```

Note the line numbers (circled in red) mentioned in each error message -  
Can we use these line numbers to help ourselves debug the code?

# Using Line Numbers to Locate Errors ...



The screenshot shows a code editor window with a menu open. The menu items are: Undo (Ctrl+Z), Redo (Shift+Ctrl+Z), Cut (Ctrl+X), Copy (Ctrl+C), Paste (Ctrl+V), Delete (Delete), Overwrite Mode (unchecked), and Select All (Ctrl+A). The Preferences option is highlighted. The code in the background is a C program for calculating the harmonic mean of 5 real numbers. The code is as follows:

```
// Compute the harmonic mean of 5 real numbers
#include <stdio.h>
int main()
{
    // Declare variables
    // 1. Declare variables for the 5 real numbers
    // 2. Declare variables for the harmonic mean
    // 3. Declare variables for the user input
    double a1, a2, a3, a4, a5;
    double hm;
    int n;

    printf("\nn = %d \na1 = %f \na2 = %f \na3 = %f \na4 = %f \na5 = %f", n, a1, a2, a3, a4, a5);

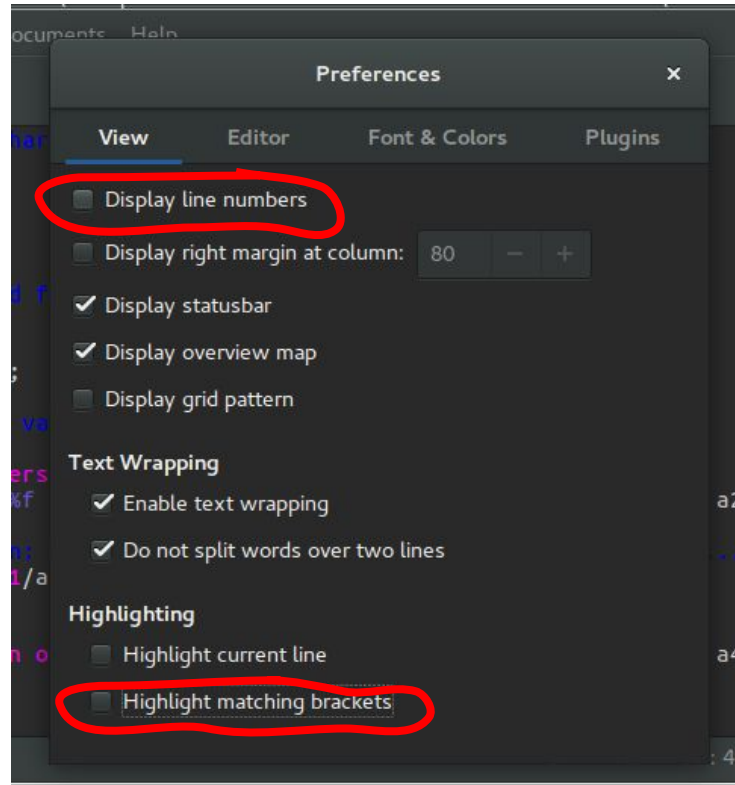
    // Compute using the equation: Harmonic Mean = n / (1/a1+1/a2+1/a3+1/a4+.....+1/an)
    hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);

    // Display the result
    printf("\n\nHarmonic Mean of %f, %f, %f, %f and %ff is: %f \n", a1, a2, a3, a4, a5, hm);
}
```

Red text overlay: The answer is YES!  
But we need to do something first ...

Bottom status bar: C Tab Width: 4 Ln 9, Col 13 INS

# Using Line Numbers to Locate Errors ...



We need to go to Preferences > View and then check the two options circled in red, which are:

i) Display line numbers

ii) Highlight matching brackets

# Using Line Numbers to Locate Errors ...

```
File Edit View Search Tools Documents Help
Open [icon] Save

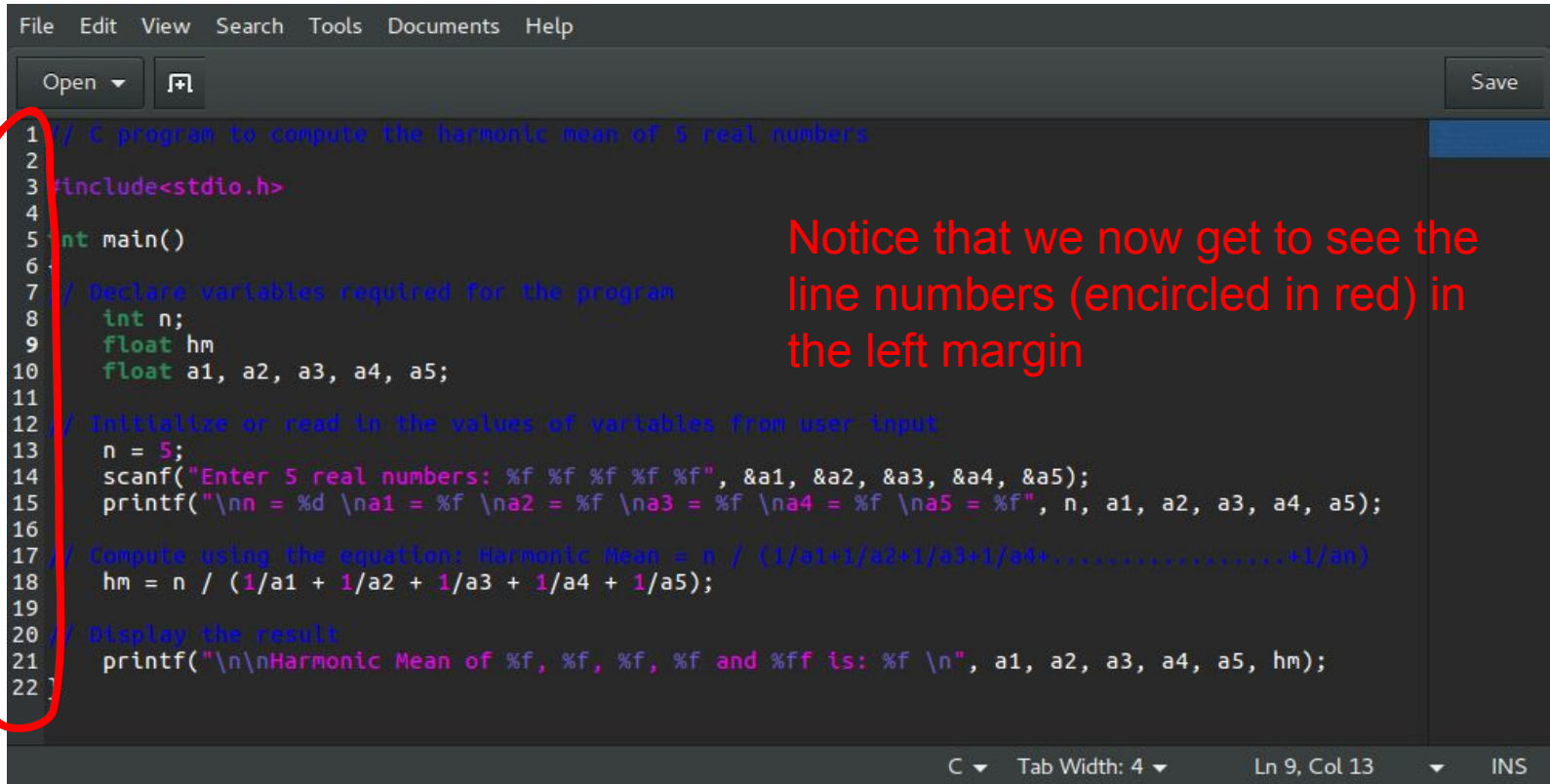
1 // C program to compute the harmonic mean of 5 real numbers
2
3 #include<stdio.h>
4
5 int main()
6 {
7 // Declare variables required for the program
8     int n;
9     float hm
10    float a1, a2, a3, a4, a5;
11
12 // Initialize or read in the values of variables from user input
13     n = 5;
14     scanf("Enter 5 real numbers: %f %f %f %f %f", &a1, &a2, &a3, &a4, &a5);
15     printf("\nn = %d \na1 = %f \na2 = %f \na3 = %f \na4 = %f \na5 = %f", n, a1, a2, a3, a4, a5);
16
17 // Compute using the equation: Harmonic Mean = n / (1/a1+1/a2+1/a3+1/a4+.....+1/an)
18     hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
19
20 // Display the result
21     printf("\n\nHarmonic Mean of %f, %f, %f, %f and %ff is: %f \n", a1, a2, a3, a4, a5, hm);
22 }
```

Let us go back to examining our source code for debugging ...

C Tab Width: 4 Ln 9, Col 13 INS



# Using Line Numbers to Locate Errors ...



```
File Edit View Search Tools Documents Help
Open [icon] Save
1 // C program to compute the harmonic mean of 5 real numbers
2
3 #include<stdio.h>
4
5 int main()
6
7 // Declare variables required for the program
8     int n;
9     float hm
10    float a1, a2, a3, a4, a5;
11
12 // Initialize or read in the values of variables from user input
13     n = 5;
14     scanf("Enter 5 real numbers: %f %f %f %f %f", &a1, &a2, &a3, &a4, &a5);
15     printf("\nn = %d \na1 = %f \na2 = %f \na3 = %f \na4 = %f \na5 = %f", n, a1, a2, a3, a4, a5);
16
17 // Compute using the equation: Harmonic Mean = n / (1/a1+1/a2+1/a3+1/a4+.....+1/an)
18     hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
19
20 // Display the result
21     printf("\n\nHarmonic Mean of %f, %f, %f, %f and %ff is: %f \n", a1, a2, a3, a4, a5, hm);
22
```

Notice that we now get to see the line numbers (encircled in red) in the left margin

C Tab Width: 4 Ln 9, Col 13 INS



# Using Line Numbers to Locate Errors ...

```
File Edit View Search Terminal Tabs Help
pritam@pritam-HP-Notebook: ~
pritam@pritam-HP-Notebook: ~/Dropbox/IIT-KG...
pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$ gcc harmonic_mean.c
harmonic_mean.c: In function 'main':
harmonic_mean.c:10:5: error: expected '=', ',', ';', 'asm' or '__attribute__' before 'float'
    float a1, a2, a3, a4, a5;
    ^
harmonic_mean.c:18:5: error: 'hm' undeclared (first use in this function)
    hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
    ^
harmonic_mean.c:18:5: note: each undeclared identifier is reported only once for each function
it appears in
pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$
```

Note the line numbers (circled in red) mentioned in each error message -  
Let us start by examining the earliest line (line 10) which has an error ...

# Using Line Numbers to Locate Errors ...

```
File Edit View Search Tools Documents Help
Open [icon] Save

1 // C program to compute the harmonic mean of 5 real numbers
2
3 #include<stdio.h>
4
5 int main()
6 {
7 // Declare variables required for the program
8     int n;
9     float hm
10    float a1, a2, a3, a4, a5;
11
12 // Initialize or read in the values of variables from user input
13     n = 5;
14     scanf("Enter 5 real numbers: %f %f %f %f %f", &a1, &a2, &a3, &a4, &a5);
15     printf("\nn = %d \na1 = %f \na2 = %f \na3 = %f \na4 = %f \na5 = %f", n, a1, a2, a3, a4, a5);
16
17 // Compute using the equation: Harmonic Mean = n / (1/a1+1/a2+1/a3+1/a4+.....+1/an)
18     hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
19
20 // Display the result
21     printf("\n\nHarmonic Mean of %f, %f, %f, %f and %f is: %f \n", a1, a2, a3, a4, a5, hm);
22 }
```

But line 10 seems to be fine!  
Where is the error??

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# Using Line Numbers to Locate Errors ...

```
File Edit View Search Tools Documents Help
Open [icon] Save

1 // C program to compute the harmonic mean of 5 real numbers
2
3 #include<stdio.h>
4
5 int main()
6 {
7 // Declare variables required for the program
8   int n;
9   float hm
10  float a1, a2, a3, a4, a5;
11
12 // Initialize or read in the values of variables from user input
13   n = 5;
14   scanf("Enter 5 real numbers: %f %f %f %f %f", &a1, &a2, &a3, &a4, &a5);
15   printf("\nn = %d \na1 = %f \na2 = %f \na3 = %f \na4 = %f \na5 = %f", n, a1, a2, a3, a4, a5);
16
17 // Compute using the equation: Harmonic Mean = n / (1/a1+1/a2+1/a3+1/a4+.....+1/an)
18   hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
19
20 // Display the result
21   printf("\n\nHarmonic Mean of %f, %f, %f, %f and %f is: %f \n", a1, a2, a3, a4, a5, hm);
22 }
```

Oh! There is actually a missing semicolon at the end of line 9!

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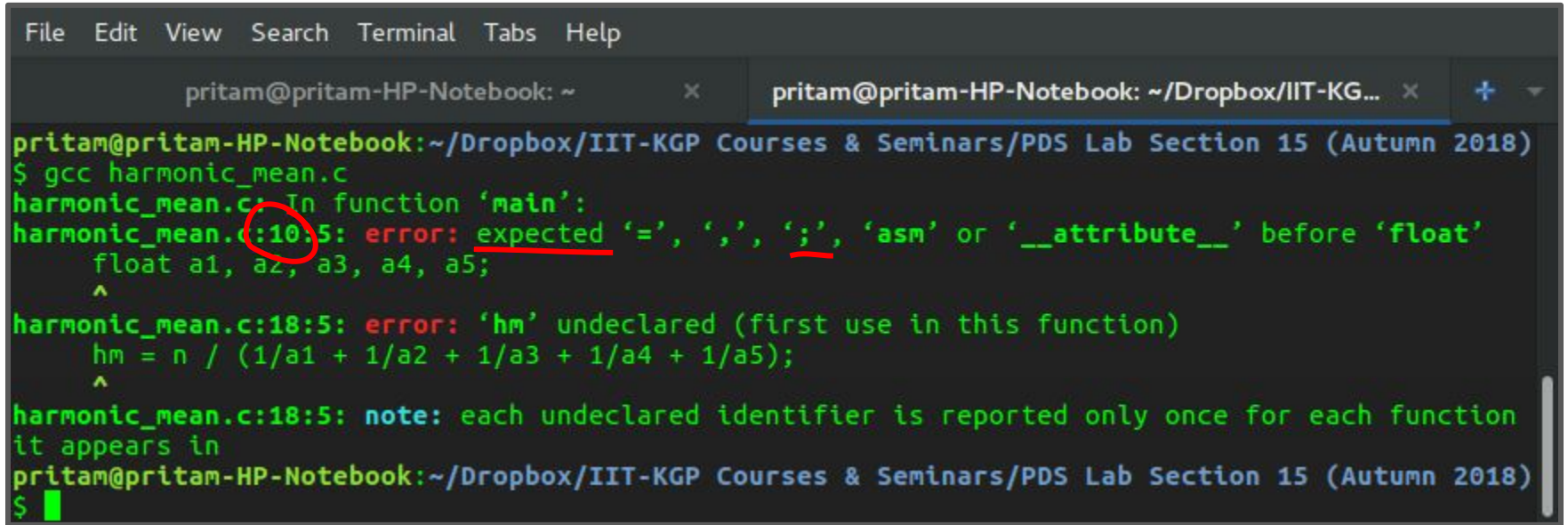
# Remembering to Put in Missing Semicolons ...

```
File Edit View Search Tools Documents Help
Open [icon] Save
1 // C program to compute the harmonic mean of 5 real numbers
2
3 #include<stdio.h>
4
5 int main()
6 {
7 // Declare variables required for the program
8     int n;
9     float hm;
10    float a1, a2, a3, a4, a5;
11
12 // Initialize or read in the values of variables from user input
13    n = 5;
14    scanf("Enter 5 real numbers: %f %f %f %f %f", &a1, &a2, &a3, &a4, &a5);
15    printf("\nn = %d \na1 = %f \na2 = %f \na3 = %f \na4 = %f \na5 = %f", n, a1, a2, a3, a4, a5);
16
17 // Compute using the equation: Harmonic Mean = n / (1/a1+1/a2+1/a3+1/a4+.....+1/an)
18    hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
19
20 // Display the result
21    printf("\n\nHarmonic Mean of %f, %f, %f, %f and %f is: %f \n", a1, a2, a3, a4, a5, hm);
22 }
```

So let us put in the missing semicolon, and try compiling again ...

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# Remembering to Put in Missing Semicolons ...



```
File Edit View Search Terminal Tabs Help
pritam@pritam-HP-Notebook: ~
pritam@pritam-HP-Notebook: ~/Dropbox/IIT-KG...
pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$ gcc harmonic_mean.c
harmonic_mean.c: In function 'main':
harmonic_mean.c:10:5: error: expected '=', ',', ';', 'asm' or '__attribute__' before 'float'
    float a1, a2, a3, a4, a5;
        ^
harmonic_mean.c:18:5: error: 'hm' undeclared (first use in this function)
    hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
        ^
harmonic_mean.c:18:5: note: each undeclared identifier is reported only once for each function
it appears in
pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$
```

Lessons to be learnt from this exercise --

- i) Always start by examining the earliest / topmost line which has an error
- ii) Sometimes the error might actually be in the line preceding the line number shown



# Remembering to Put in Missing Semicolons ...

```
File Edit View Search Terminal Tabs Help

pritam@pritam-HP-Notebook: ~
pritam@pritam-HP-Notebook: ~/Dropbox/IIT-KG...

pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$ gcc harmonic_mean.c
pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$ ./a.out
2.5 3.6 1.8 4.9 5.3

n = 5
a1 = 0.000000
a2 = 0.000000
a3 = 0.000000
a4 = 0.000000
a5 = 0.000000

Harmonic Mean of 0.000000, 0.000000, 0.000000, 0.000000 and 0.000000f is: 0.000000
pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$
```

Program compiles successfully now - the other 2 errors have disappeared as well!!!



# Remembering to Put in Missing Semicolons ...

```
File Edit View Search Terminal Tabs Help
pritam@pritam-HP-Notebook: ~
pritam@pritam-HP-Notebook: ~/Dropbox/IIT-KG...
pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$ gcc harmonic_mean.c
pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$ ./a.out
2.5 3.6 1.8 4.9 5.3
n = 5
a1 = 0.000000
a2 = 0.000000
a3 = 0.000000
a4 = 0.000000
a5 = 0.000000
Harmonic Mean of 0.000000, 0.000000, 0.000000, 0.000000 and 0.000000f is: 0.000000
pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$
```

These were the real values entered by the user as input

But the values entered are not being stored properly!  
By printing out the values of a1, a2, a3, a4 and a5 (see line 15), we see that they have in fact all been set to 0.0!

NB - Though the program compiles successfully now, it is still not producing the correct output!!

# Using *printf* statements to detect logical errors ...

```
File Edit View Search Tools Documents Help
Open [F4] Save
1 // C program to compute the harmonic mean of 5 real numbers
2
3 #include<stdio.h>
4
5 int main()
6 {
7 // Declare variables required for the program
8     int n;
9     float hm;
10    float a1, a2, a3, a4, a5;
11
12 // Initialize or read in the values of variables from user input
13    n = 5;
14    scanf("Enter 5 real numbers: %f %f %f %f %f", &a1, &a2, &a3, &a4, &a5);
15    printf("\nn = %d \na1 = %f \na2 = %f \na3 = %f \na4 = %f \na5 = %f", n, a1, a2, a3, a4, a5);
16
17 // Compute using the equation: Harmonic Mean = n / (1/a1+1/a2+1/a3+1/a4+.....+1/an)
18    hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
19
20 // Display the result
21    printf("\n\nHarmonic Mean of %f, %f, %f, %f and %ff is: %f \n", a1, a2, a3, a4, a5, hm);
22 }
```

The *printf* statement on line 15 was put there only to aid in debugging - and it worked!

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Use *printf* statements to print out values read in from user and also intermediate computation results.

# Using *printf* statements to detect logical errors ...

```
File Edit View Search Terminal Tabs Help
pritam@pritam-HP-Notebook: ~
pritam@pritam-HP-Notebook: ~/Dropbox/IIT-KG...
pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$ gcc harmonic_mean.c
pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$ ./a.out
2.5 3.6 1.8 4.9 5.3

n = 5
a1 = 0.000000
a2 = 0.000000
a3 = 0.000000
a4 = 0.000000
a5 = 0.000000

Harmonic Mean of 0.000000, 0.000000, 0.000000, 0.000000 and 0.000000f is: 0.000000
pritam@pritam-HP-Notebook:~/Dropbox/IIT-KGP Courses & Seminars/PDS Lab Section 15 (Autumn 2018)
$
```

Intermediate output shown due to *printf* statement on line 15

By using the *printf* statement on line 15, we realize that the user input has not been stored properly!!

# Using *printf* statements to detect logical errors ...

```
File Edit View Search Tools Documents Help
Open [F4] Save
1 // C program to compute the harmonic mean of 5 real numbers
2
3 #include<stdio.h>
4
5 int main()
6 {
7 // Declare variables required for the program
8     int n;
9     float hm;
10    float a1, a2, a3, a4, a5;
11
12 // Initialize or read in the values of variables from user input
13    n = 5;
14    scanf("Enter 5 real numbers: %f %f %f %f %f", &a1, &a2, &a3, &a4, &a5);
15    printf("\nn = %d \na1 = %f \na2 = %f \na3 = %f \na4 = %f \na5 = %f", n, a1, a2, a3, a4, a5);
16
17 // Compute using the equation: Harmonic Mean = n / (1/a1+1/a2+1/a3+1/a4+.....+1/an)
18    hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
19
20 // Display the result
21    printf("\n\nHarmonic Mean of %f, %f, %f, %f and %ff is: %f \n", a1, a2, a3, a4, a5, hm);
22 }
```

The source of the error is finally located in line 14, where we have used an incorrect *scanf* syntax!

C Tab Width: 4 Ln 9, Col 14 INS

By using the *printf* statement on line 15, we realize that the user input has not been stored properly!!

# Using correct syntax for *scanf* and *printf* statements ...

```
File Edit View Search Tools Documents Help
Open [icon] Save

1 // C program to compute the harmonic mean of 5 real numbers.
2
3 #include<stdio.h>
4
5 int main()
6 {
7 // Declare variables required for the program
8     int n;
9     float hm;
10    float a1, a2, a3, a4, a5;
11
12 // Initialize or read in the values of variables from user input
13     n = 5;
14     scanf("Enter 5 real numbers: %f %f %f %f %f", &a1, &a2, &a3, &a4, &a5);
15     printf("\nn = %d \na1 = %f \na2 = %f \na3 = %f \na4 = %f \na5 = %f", n, a1, a2, a3, a4, a5);
16
17 // Compute using the equation: Harmonic Mean = n / (1/a1+1/a2+1/a3+1/a4+.....+1/an)
18     hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
19
20 // Display the result
21     printf("\n\nHarmonic Mean of %f, %f, %f, %f and %f is: %f \n", a1, a2, a3, a4, a5, hm);
22 }
```

Remember to match each parameter with its corresponding format specifier (like '%d' or '%f') in the initial string!



# Using correct syntax for *scanf* and *printf* statements ...

```
File Edit View Search Tools Documents Help
Open [icon] Save

1 // C program to compute the harmonic mean of 5 real numbers.
2
3 #include<stdio.h>
4
5 int main()
6 {
7 // Declare variables required for the program
8     int n;
9     float hm;
10    float a1, a2, a3, a4, a5;
11
12 // Initialize or read in the values of variables from user input
13     n = 5;
14     scanf("Enter 5 real numbers: %f %f %f %f %f", &a1, &a2, &a3, &a4, &a5);
15     printf("\nn = %d \na1 = %f \na2 = %f \na3 = %f \na4 = %f \na5 = %f", n, a1, a2, a3, a4, a5);
16
17 // Compute using the equation: Harmonic Mean = n / (1/a1+1/a2+1/a3+1/a4+.....+1/an)
18     hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
19
20 // Display the result
21     printf("\n\nHarmonic Mean of %f, %f, %f, %f and %f is: %f \n", a1, a2, a3, a4, a5, hm);
22 }
```

Remember to match each parameter with its corresponding format specifier (like '%d' or '%f') in the initial string!



# Using correct syntax for *scanf* and *printf* statements ...

```
File Edit View Search Tools Documents Help
Open [icon] Save

1 // C program to compute the harmonic mean of 5 real numbers.
2
3 #include<stdio.h>
4
5 int main()
6 {
7 // Declare variables required for the program
8     int n;
9     float hm;
10    float a1, a2, a3, a4, a5;
11
12 // Initialize or read in the values of variables from user input
13     n = 5;
14     scanf("Enter 5 real numbers: %f %f %f %f %f", &a1, &a2, &a3, &a4, &a5);
15     printf("\nn = %d \na1 = %f \na2 = %f \na3 = %f \na4 = %f \na5 = %f", n, a1, a2, a3, a4, a5);
16
17 // Compute using the equation: Harmonic Mean = n / (1/a1+1/a2+1/a3+1/a4+.....+1/an)
18     hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
19
20 // Display the result
21     printf("\n\nHarmonic Mean of %f, %f, %f, %f and %f is: %f \n", a1, a2, a3, a4, a5, hm);
22 }
```

Remember to match each parameter with its corresponding format specifier (like '%d' or '%f') in the initial string!

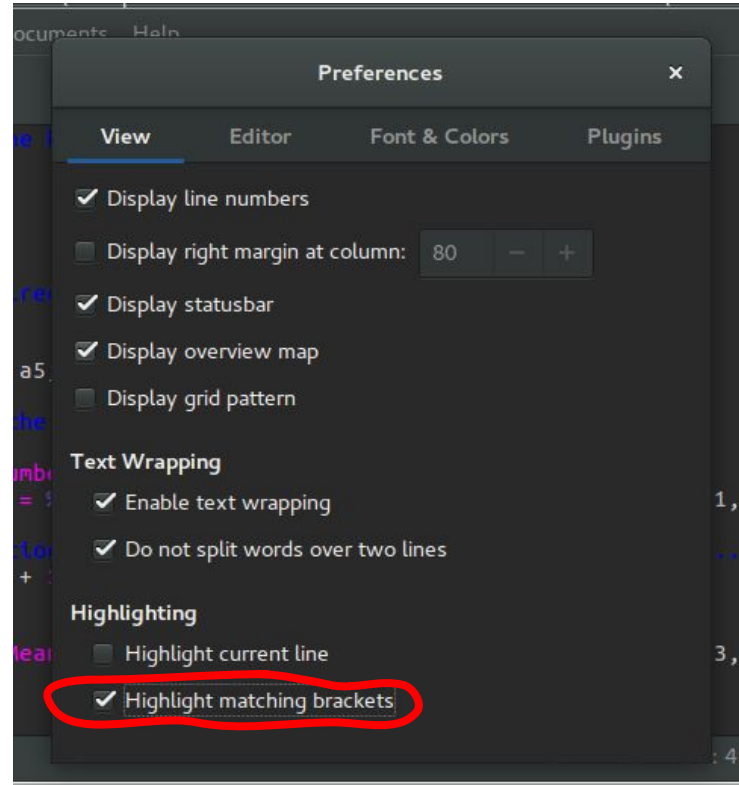
# Using correct syntax for *scanf* and *printf* statements ...

```
File Edit View Search Tools Documents Help
Open [icon] Save

1 // C program to compute the harmonic mean of 5 real numbers.
2
3 #include<stdio.h>
4
5 int main()
6 {
7 // Declare variables required for the program
8     int n;
9     float hm;
10    float a1, a2, a3, a4, a5;
11
12 // Initialize or read in the values of variables from user input
13     n = 5;
14     scanf("Enter 5 real numbers: %f %f %f %f %f", &a1, &a2, &a3, &a4, &a5);
15     printf("\n n = %d \na1 = %f \na2 = %f \na3 = %f \na4 = %f \na5 = %f", n, a1, a2, a3, a4, a5);
16
17 // Compute using the equation: Harmonic Mean = n / (1/a1+1/a2+1/a3+1/a4+.....+1/an)
18     hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
19
20 // Display the result
21     printf("\n\nHarmonic Mean of %f, %f, %f, %f and %f is: %f \n", a1, a2, a3, a4, a5, hm);
22 }
```

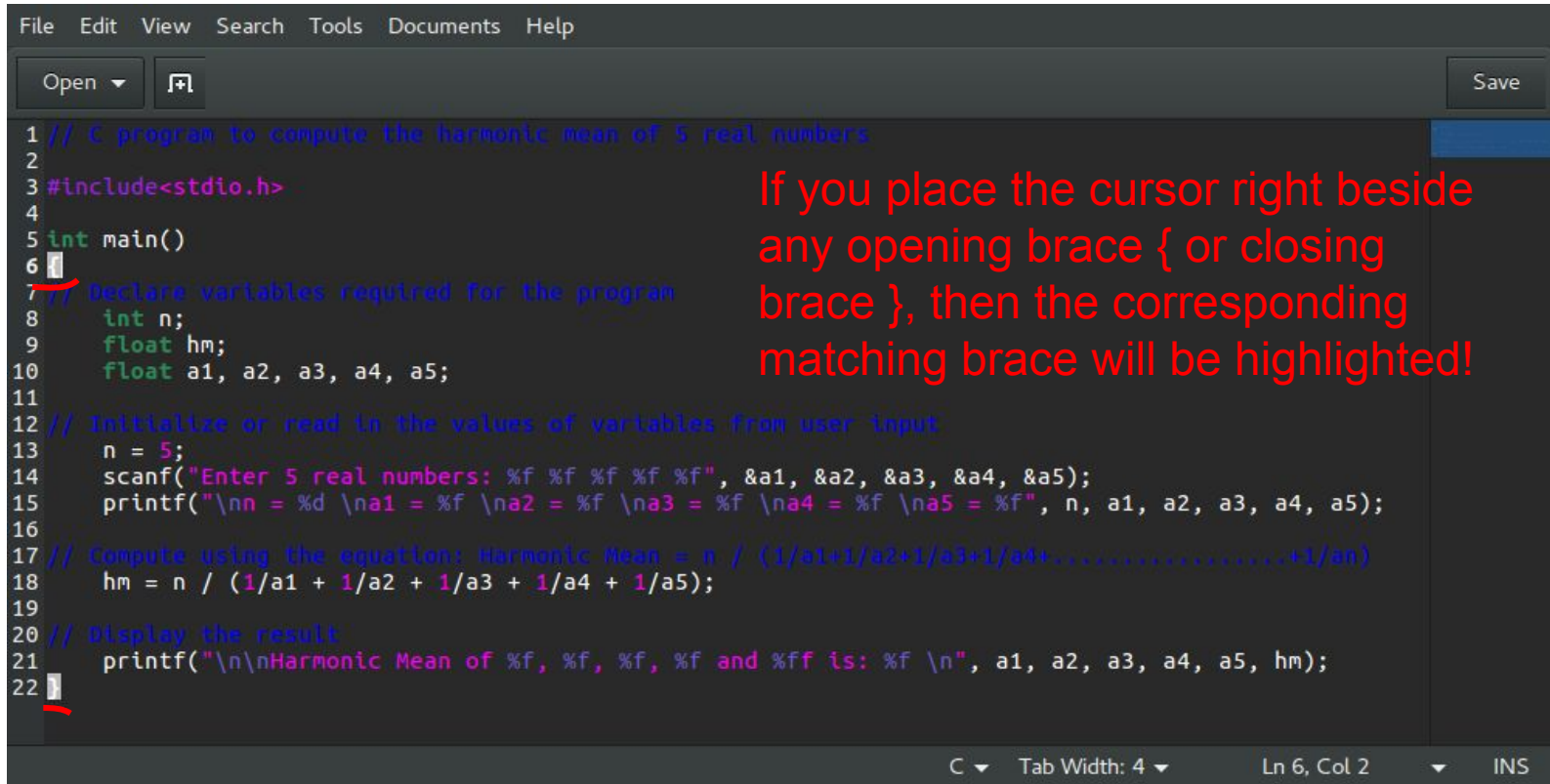
Remember to match each parameter with its corresponding format specifier (like '%d' or '%f') in the initial string!

# Checking for Matching Parentheses ...



Recall that we went to Preferences > View and then checked the “Highlight matching Brackets” option

# Checking for Matching Parentheses ...



```
File Edit View Search Tools Documents Help
Open [icon] Save
1 // C program to compute the harmonic mean of 5 real numbers
2
3 #include<stdio.h>
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6 {
7 // Declare variables required for the program
8   int n;
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12 // Initialize or read in the values of variables from user input
13   n = 5;
14   scanf("Enter 5 real numbers: %f %f %f %f %f", &a1, &a2, &a3, &a4, &a5);
15   printf("\nn = %d \na1 = %f \na2 = %f \na3 = %f \na4 = %f \na5 = %f", n, a1, a2, a3, a4, a5);
16
17 // Compute using the equation: Harmonic Mean = n / (1/a1+1/a2+1/a3+1/a4+.....+1/an)
18   hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
19
20 // Display the result
21   printf("\n\nHarmonic Mean of %f, %f, %f, %f and %ff is: %f \n", a1, a2, a3, a4, a5, hm);
22 }
```

If you place the cursor right beside any opening brace { or closing brace }, then the corresponding matching brace will be highlighted!

C Tab Width: 4 Ln 6, Col 2 INS

# Checking for Matching Parentheses ...

```
File Edit View Search Tools Documents Help
Open [icon] Save
1 // C program to compute the harmonic mean of 5 real numbers
2
3 #include<stdio.h>
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5 int main()
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12 // Initialize or read in the values of variables from user input
13    n = 5;
14    scanf("Enter 5 real numbers: %f %f %f %f %f", &a1, &a2, &a3, &a4, &a5);
15    printf("\nn = %d \na1 = %f \na2 = %f \na3 = %f \na4 = %f \na5 = %f", n, a1, a2, a3, a4, a5);
16
17 // Compute using the equation: Harmonic Mean = n / (1/a1+1/a2+1/a3+1/a4+.....+1/an)
18    hm = n / (1/a1 + 1/a2 + 1/a3 + 1/a4 + 1/a5);
19
20 // Display the result
21    printf("\n\nHarmonic Mean of %f, %f, %f, %f and %f is: %f \n", a1, a2, a3, a4, a5, hm);
22 }
```

If you place the cursor right beside any opening bracket ( or closing bracket ), then the corresponding matching bracket will be highlighted!

C Tab Width: 4 Ln 18, Col 14 INS