SFU SIMON FRASER UNIVERSITY
ENGAGING THE WORLD

CMPT 125 - Introduction to Computing Science and Programming II - Fall 2021

Lab 1.
September 15

Outline

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- Basic commands in LinuX
- VSCode Configuration
- Write Hello_Word.c
- Debug and Compile using VS code
- Compile using Terminal

Basic commands in LinuX

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0. If you need to remotely connect to csil lab computers check :

http://www.sfu.ca/computing/about/support/csil/unix.html#remote-access-linux-system

For problems about it contact helpdesk

(https://www.sfu.ca/computing/about/support/how-to-contact-helpdesk.html)

Basic commands in LinuX

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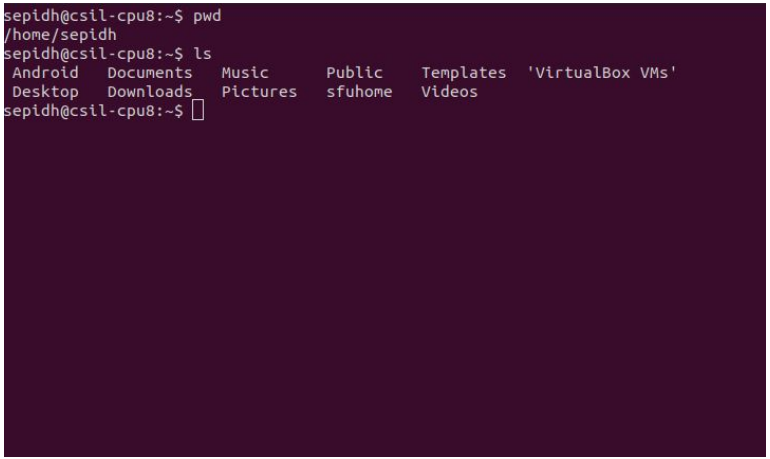
- pwd : will give you the address of directory you are in.
- ls : use it to show the files and directories that are in the directory you are in.

For opening Terminal use: ctrl+alt+t



Basic commands in LinuX

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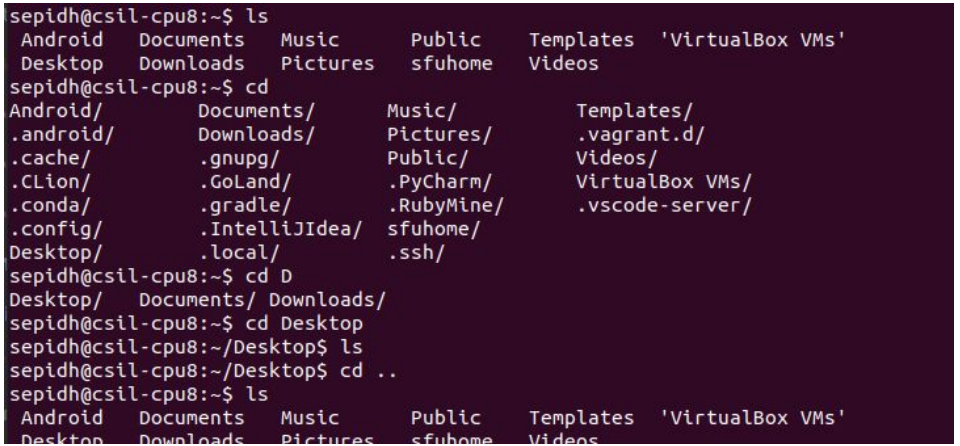
- cd : To navigate through the Linux directories and files. if you write cd and press tab it will show you possible directories you can enter using cd, you can write part of file name to make the search space for that smaller.
- use cd .. to go backward.



Basic commands in LinuX

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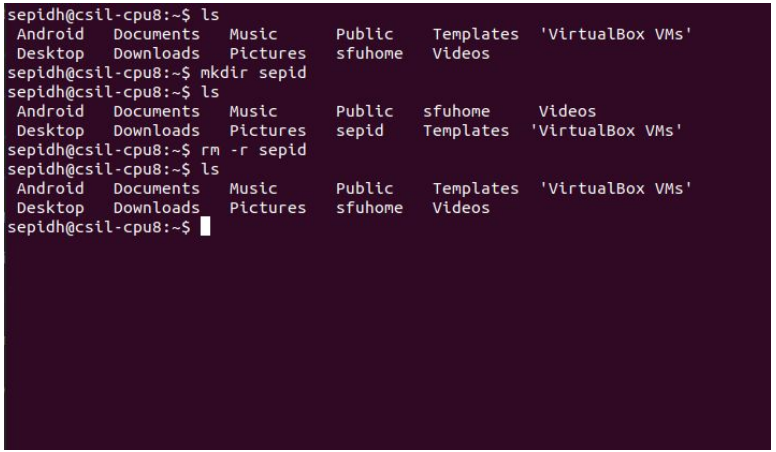
- mkdir : use this to create new directory
- rm : use these to remove files, and directories. For directories you need to use rm -r



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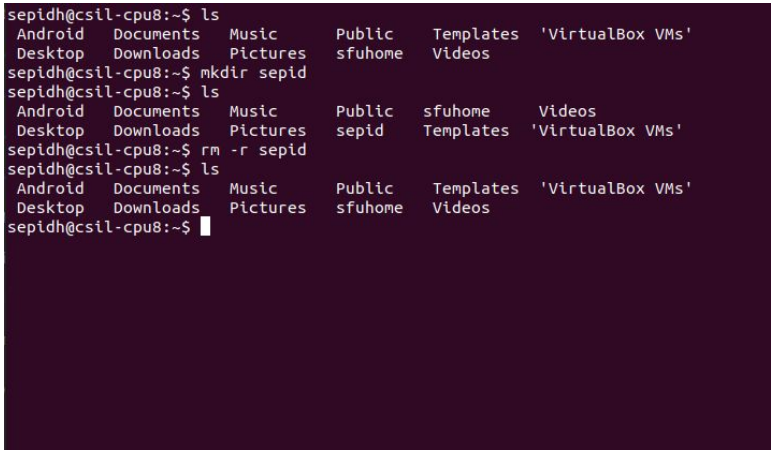

Basic commands in LinuX

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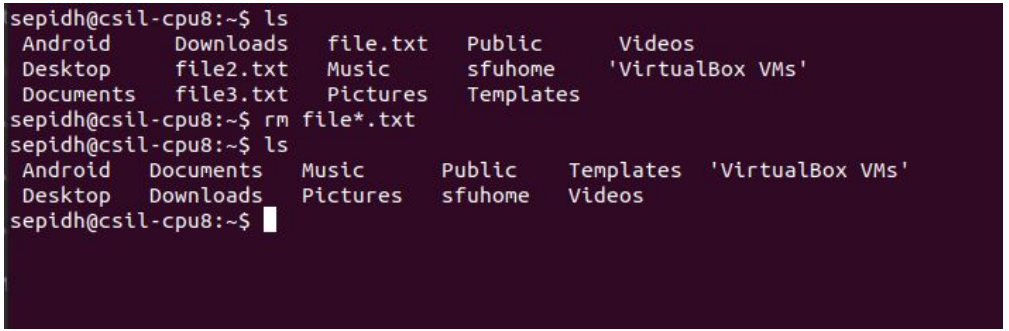
- *: means anything. for example if you say rm file*.txt you mean remove all file“something”.txt



Basic commands in LinuX

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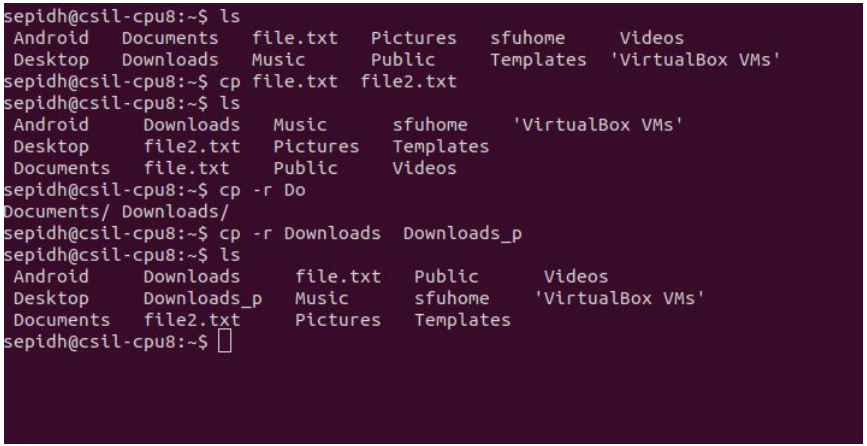
- cp: use cp for copying file and directories, for directories again you need to do cp -r. Same as other command tab can give you possible options for being copied.



Basic commands in LinuX

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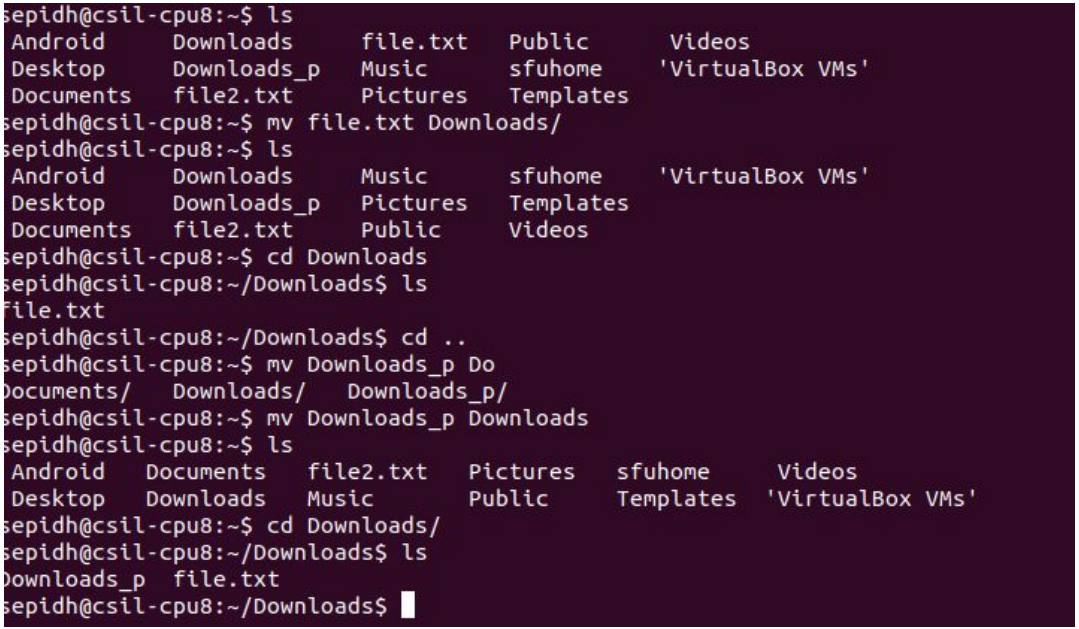
- **mv: use mv to move files and directories.**



Basic commands in LinuX

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- **find: use to find files and directories.**

```
sepidh@csil-cpu8:~$ ls
 Android      Downloads   Pictures    sfuhome    'VirtualBox VMs'
 Desktop      file2.txt   Public      Templates
 Documents    Music       sepid.txt   Videos
sepidh@csil-cpu8:~$ find sepid.txt
sepid.txt
sepidh@csil-cpu8:~$ find *.txt
file2.txt
sepid.txt
sepidh@csil-cpu8:~$
```

Basic commands in LinuX

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```

Basic commands in LinuX

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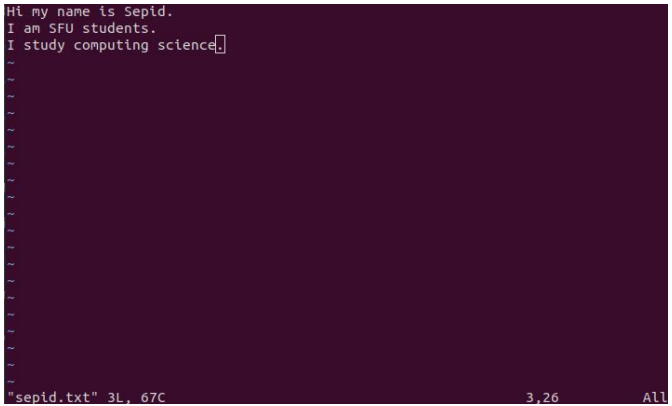
- **grep: use it to search in the notepad file. Lines that contain the searched word will be displayed fully.**



Basic commands in LinuX

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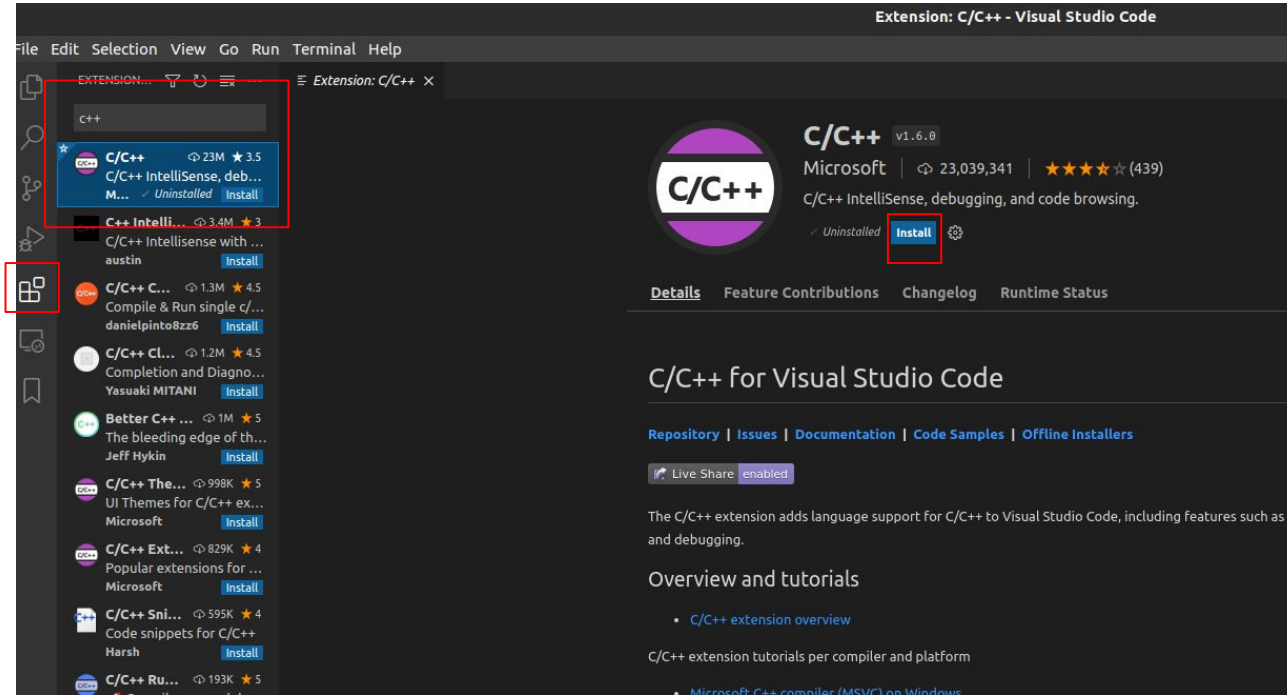
- **tar: use tar for zip and unzip or append a file to a zip file.**

to practice tar check : https://www.linuxtechi.com/17-tar-command-examples-in-linux/

For more on commands check : https://www.hostinger.com/tutorials/linux-commands

VSCode Configuration, and run “Hello Word"

Open VS code, go to extensions and install c/c++ extension



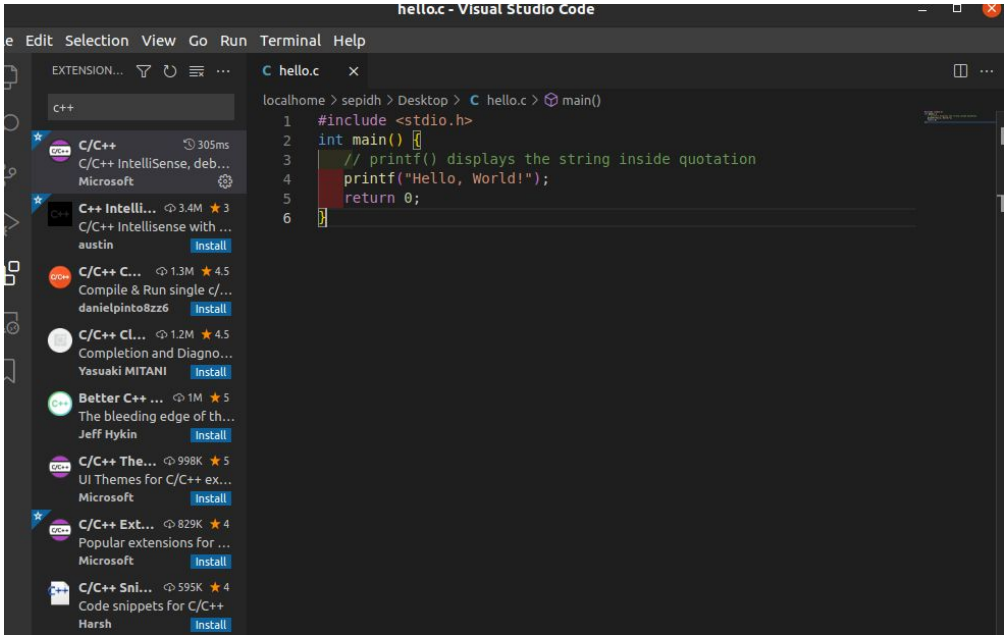
VSCode Configuration, and run “Hello Word"

go to File, create new file. paste “**hello world**” program

below in the file and save is as hello.c on your machine.

hello world:

```
#include <stdio.h>
int main() {
  // printf() displays the string inside
quotation
  printf("Hello, World!\n");
  return 0;
}
```

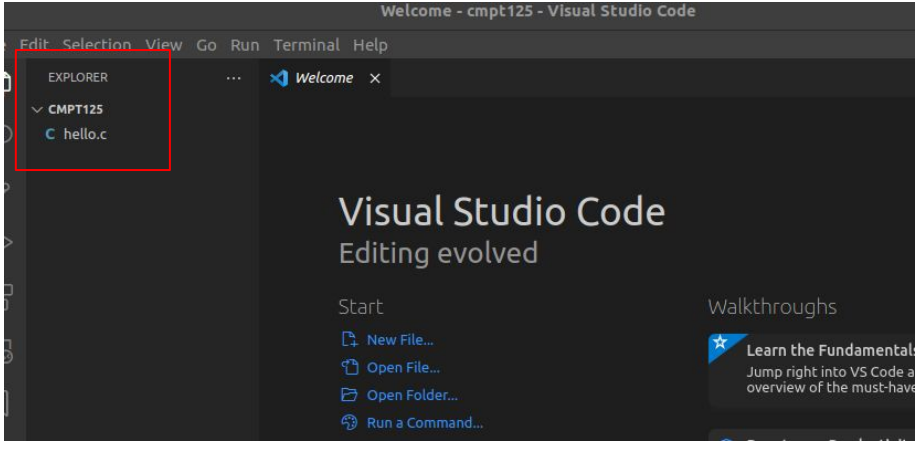


VSCode Configuration, and run “Hello Word"

Then go to the directory that file is saved there. right click and select open terminal. in the terminal write code . and enter.

new vs code should open and your hello.c should be there.

chose it.



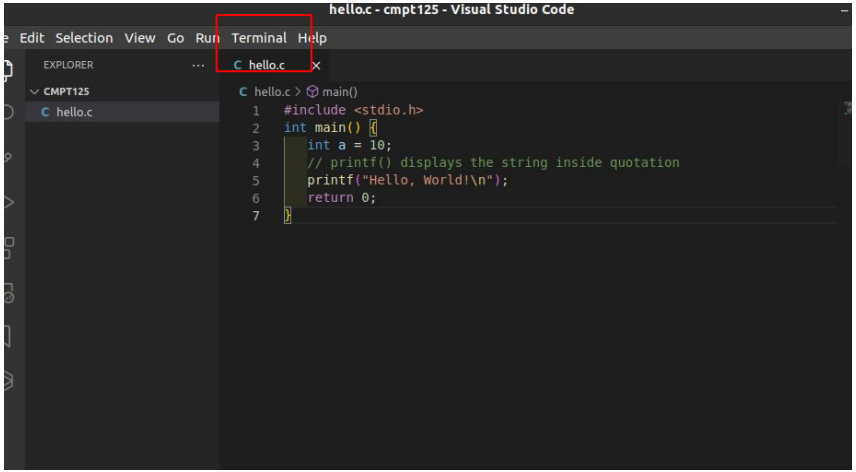
VSCode Configuration, and run “Hello Word"

from terminal choose “Run Build Task”.

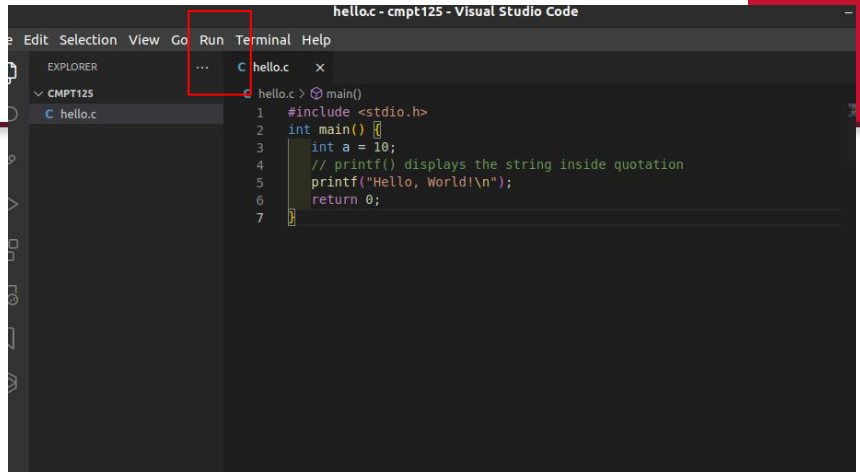
then choose “C/C++: gcc build active file”

now your code is ready to run and debug using

“Run” in vs code.



VSCode Configuration



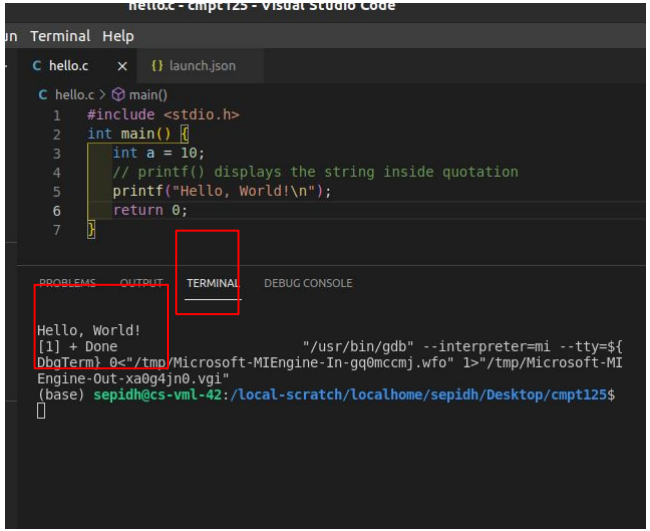
in “Run” , menu at top choose “Run Without Debugging”.

Then choose C++(GDB, LLDB), and

then choose “gcc build and debug active file”.

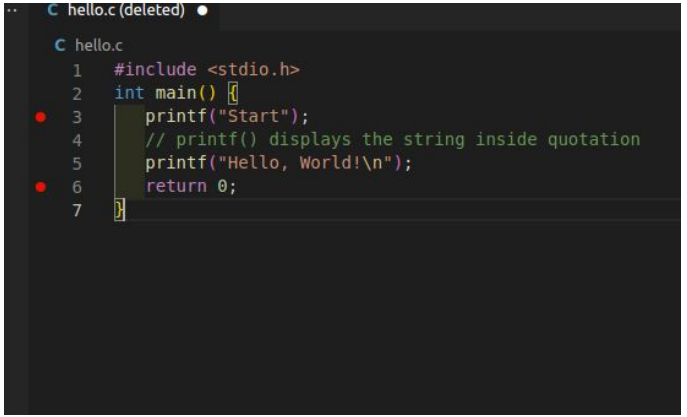
at terminal down you should be able to see output.

Change “Hello, World!\n” to any sentence you like and see how printed output changes.

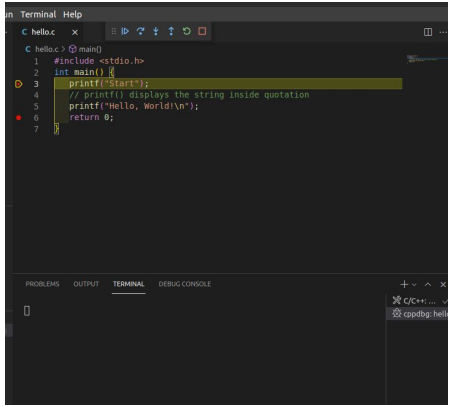


VSCode Configuration, and run “Hello Word"

To debug the code first click on the lines that you want your code stop on. you should see small red circles there after clicking.



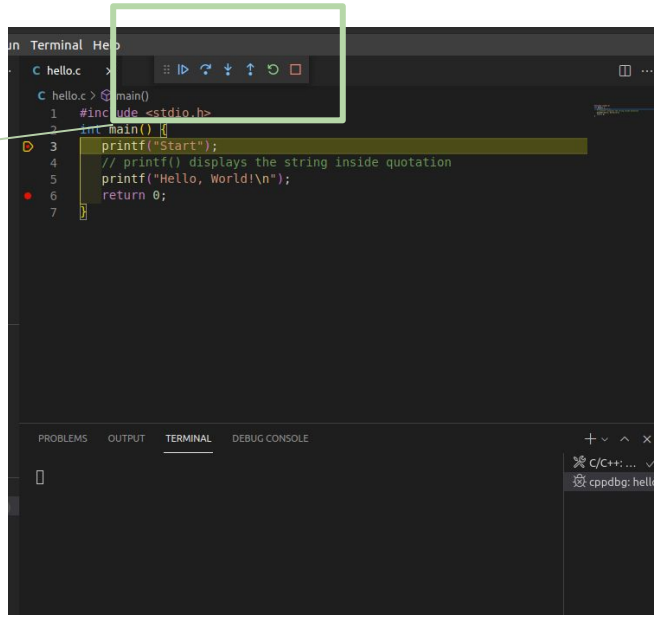
Then from Run menu choose Start Debugging.



VSCode Configuration, and run “Hello Word"

It should stop in the selected lines.

Then by using options at top you can navigate through your code and move inside your code.



Run “Hello Word" using terminal.

Other way to run your code is using terminal and gcc there.

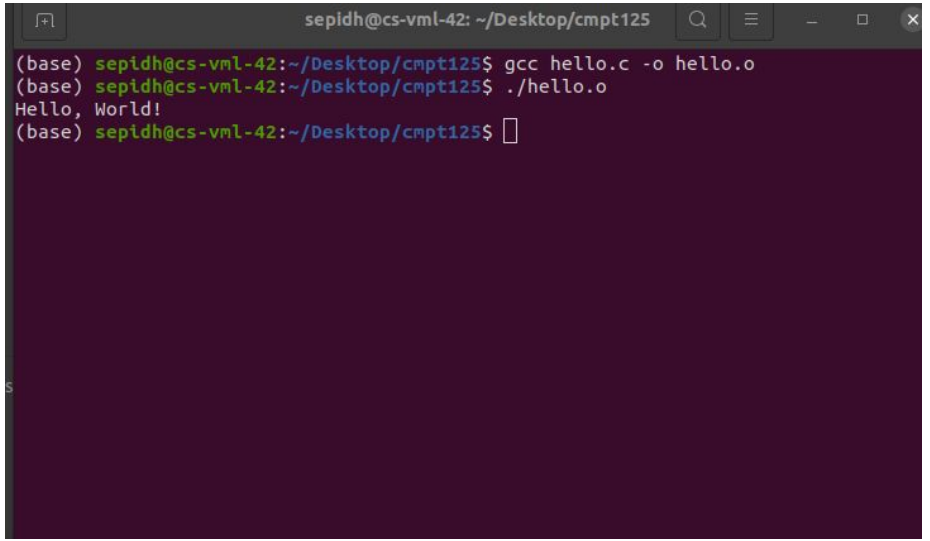
open a terminal and go the the directory that your file is in.

then :

write this command in the terminal:

gcc hello.c -o hello.o

with above command you created hello.o file. then you can run it using command ./hello.o and see the output.



Some More Examples:

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Do These Examples on your own and see what will happen.

```c
#include <stdio.h>
int main() {

    int number1, number2, sum;

    printf("Enter two integers: ");
    number1 =10;
    number2=20;



    // calculating sum
    sum = number1 + number2;

    printf("%d + %d = %d", number1, number2, sum);
    return 0;
}
```

Some More Examples:

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Do These Examples on your own and see what will happen.

```c
#include <stdio.h>
int main() {
    int number;

    printf("Enter an integer: ");

    // reads and stores input
    scanf("%d", &number);

    // displays output
    printf("You entered: %d", number);

    return 0;
}
```