

CS205L FINAL
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2022557

Question 1:

part (a)

i)

```
Terminal
pc47@pc47:~$ nano permission.txt
pc47@pc47:~$
```

```
Terminal
GNU nano 7.2 permission.txt
hello, my reg. no. is 2022557 and this is my lab final
hello how are you
bye
nice
fun
```

command to let owner and others only write and group can read only

```
pc47@pc47:~$ chmod 242 permission.txt
pc47@pc47:~$ ls -la
```

```
-rw-r----- 1 pc47 pc47 0 Mar 27 13:11 perm.data
--w-r--w- 1 pc47 pc47 91 May 14 09:27 permission.txt
```

after resetting:

```
pc47@pc47:~$ chmod 200 permission.txt
pc47@pc47:~$ ls -la
```

```
-rw-r----- 1 pc47 pc47 0 Mar 27 13:11 perm.data
--w----- 1 pc47 pc47 91 May 14 09:27 permission.txt
drwx----- 5 pc47 pc47 4096 May 13 16:46 rootadmin
```

ii)

```
pc47@pc47:~$ nano wordlist.txt
pc47@pc47:~$
```

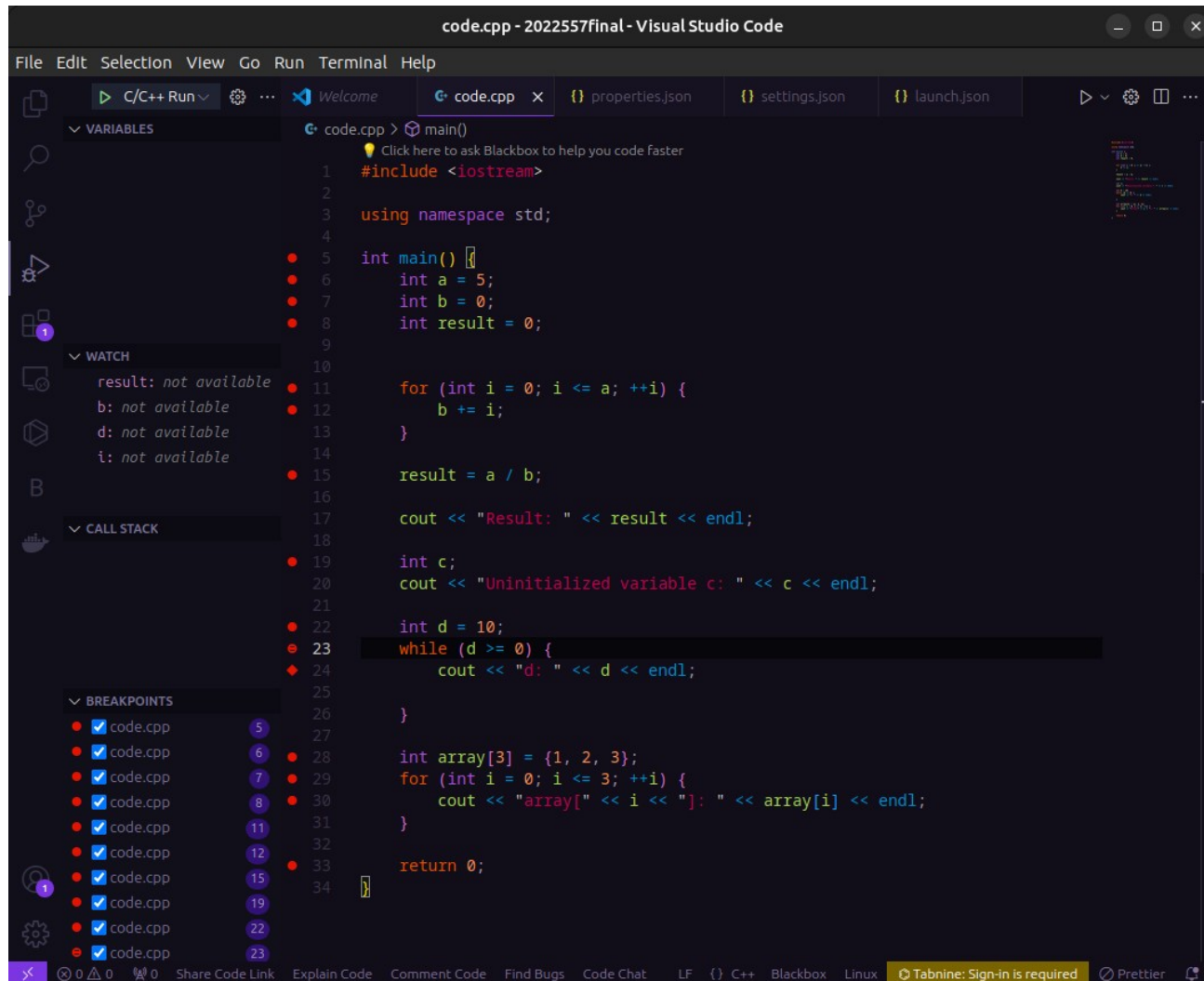
```
Terminal
GNU nano 7.2 wordlist.txt
hello my registration number is 2022557
say hello when you meet someone
his registration number is 2022444
great someone when you meet them
hi
hi
hil
byel
byelz
hel
meat
reg
the
```

```
pc47@pc47:~$ grep [a?g]*[w?z] wordlist.txt
say hello when you meet someone
great someone when you meet them
byelz
pc47@pc47:~$
```

part b)

have added variables to observe in “WATCH” window, added breakpoints to functions and lines of code.

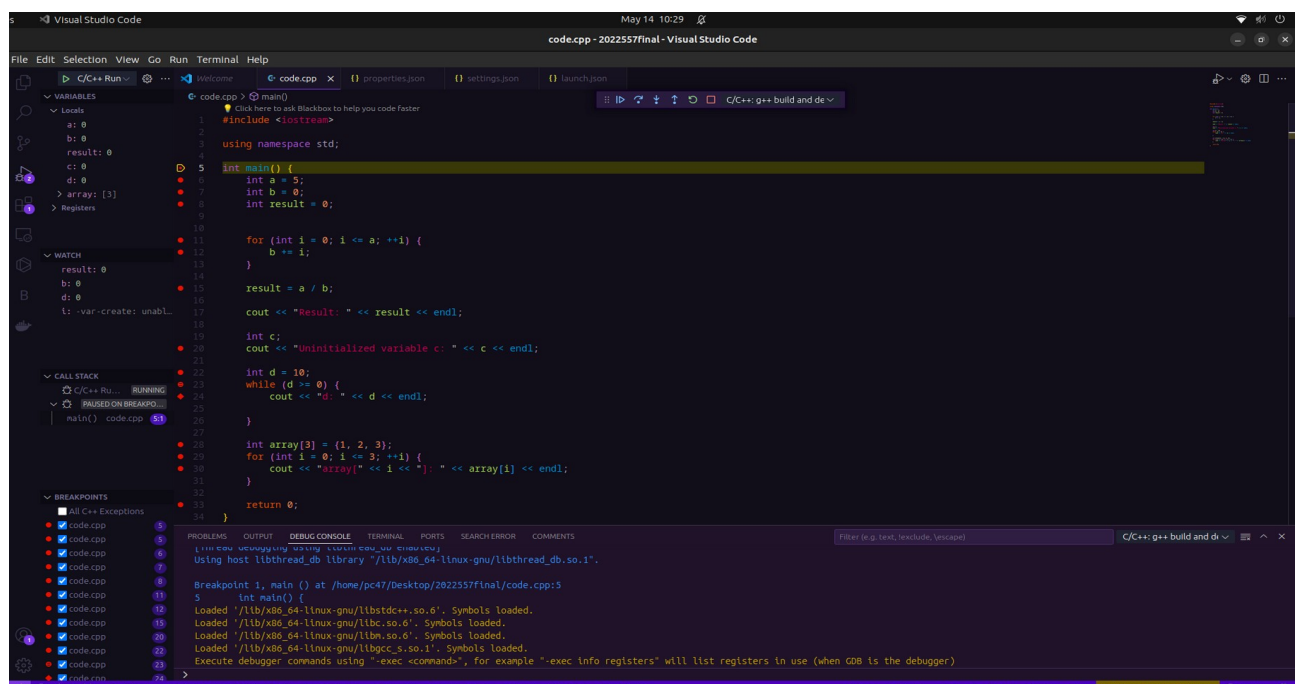
I also added a log message on line 24 to state the output value of ‘d’ and also added a conditional breakpoint($d > 9$) on line 23 which will alert me when d reaches a value over 9.



launch.json configuration:

```
code > {} launch.json > ...  
Click here to ask Blackbox to help you code faster  
1  {}  
2  "version": "0.2.0",  
3  "configurations": [  
4      {  
5          "name": "C/C++ Runner: Debug Session",  
6          "type": "cppdbg",  
7          "request": "launch",  
8          "args": [],  
9          "stopAtEntry": false,  
10         "externalConsole": true,  
11         "cwd": "${workspaceFolder}",  
12         "program": "${workspaceFolder}/code.cpp",  
13         "MIMode": "gdb",  
14         "miDebuggerPath": "gdb",  
15         "setupCommands": [  
16             {  
17                 "description": "Enable pretty-printing for gdb",  
18                 "text": "-enable-pretty-printing",  
19                 "ignoreFailures": true  
20             }  
21         ]  
22     }  
23 ]  
24 }
```

debugging working:



There were 3 problems with the code:

1) 'result = a / b' was calculating a decimal number and result was INT type, hence the modified formula is 'result b = / a' ;

2) The while loop was worded wrong, the modified version is:

```
int d = 0;
while (d++ <= 10)
{
    cout << "d: " << d << endl;
}
```

3) The array comparison operator was comparing with a non-existent value by 'i<=3' as there were only places 0-2 in the array, hence modified version is:

```
int array[3] = {1, 2, 3};
for (int i = 0; i <= 2; ++i) {
    cout << "array[" << i << "]: " << array[i] << endl;
}
```

modified code with output:

The screenshot shows the Visual Studio Code interface with a C++ file named `code.cpp` open. The Explorer sidebar on the left shows the project structure, including `2022557FINAL` and `.vscode` folder. The main editor displays the following C++ code:

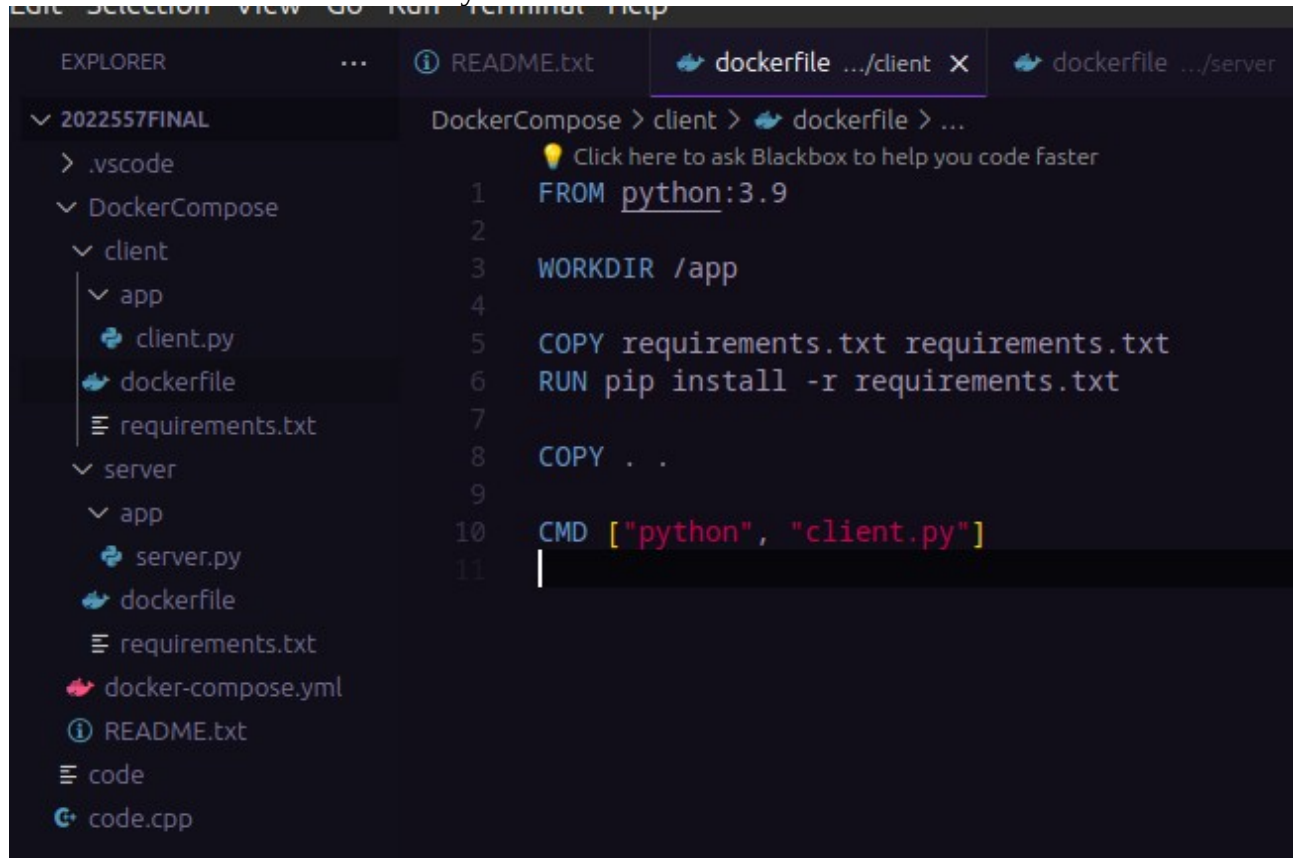
```
1  #include <iostream>
2
3  using namespace std;
4
5  int main() {
6      int a = 5;
7      int b = 0;
8      int result = 0;
9
10
11     for (int i = 0; i <= a; ++i) {
12         b += i;
13     }
14
15     result = b / a;
16
17     cout << "Result: " << result << endl;
18
19     int c;
20     cout << "Uninitialized variable c: " << c << endl;
21
22     int d = 0;
23     while (d++ <= 9)
24     {
25         cout << "d: " << d << endl;
26     }
27
28     int array[3] = {1, 2, 3};
29     for (int i = 0; i <= 2; ++i) {
30         cout << "array[" << i << "]: " << array[i] << endl;
31     }
32
33     return 0;
34 }
```

The bottom of the screen shows the TERMINAL panel with the following output:

```
Result: 3
Uninitialized variable c: 0
d: 1
d: 2
d: 3
d: 4
d: 5
d: 6
d: 7
d: 8
d: 9
d: 10
array[0]: 1
array[1]: 2
array[2]: 3
```

Question 2:

created all files with all necessary codes:



The screenshot shows the Visual Studio Code interface. On the left, the Explorer pane displays a project structure for '2022557FINAL'. It includes a 'DockerCompose' directory with sub-directories 'client' and 'server'. The 'client' directory contains 'app' (with 'client.py'), 'dockerfile', and 'requirements.txt'. The 'server' directory contains 'app' (with 'server.py'), 'dockerfile', and 'requirements.txt'. Other files in the root include 'docker-compose.yml', 'README.txt', 'code', and 'code.cpp'. The main editor pane shows the 'dockerfile' for the 'client' service. The content is as follows:

```
DockerCompose > client > dockerfile > ...
Click here to ask Blackbox to help you code faster
1 FROM python:3.9
2
3 WORKDIR /app
4
5 COPY requirements.txt requirements.txt
6 RUN pip install -r requirements.txt
7
8 COPY . .
9
10 CMD ["python", "client.py"]
11
```

did not know receiving port, so couldn't work it :(

but I wrote all the respective codes correct

```
pc47@pc47:~/Desktop/2022557final/DockerCompose$ docker-compose up
ERROR: In file './docker-compose.yml', service 'ports' must be a mapping not an
array.
pc47@pc47:~/Desktop/2022557final/DockerCompose$
```

github link: https://github.com/haseeb557/CS205L_final.git