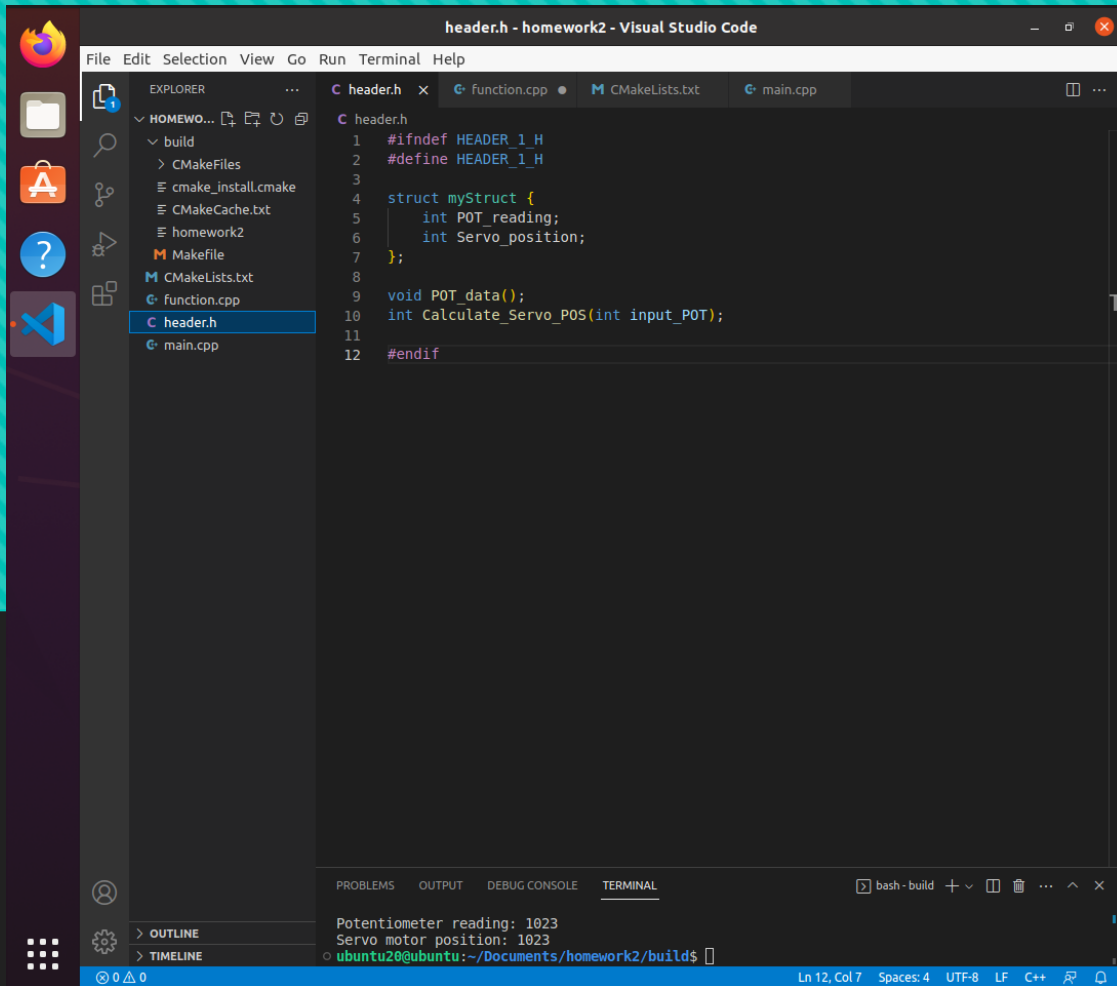
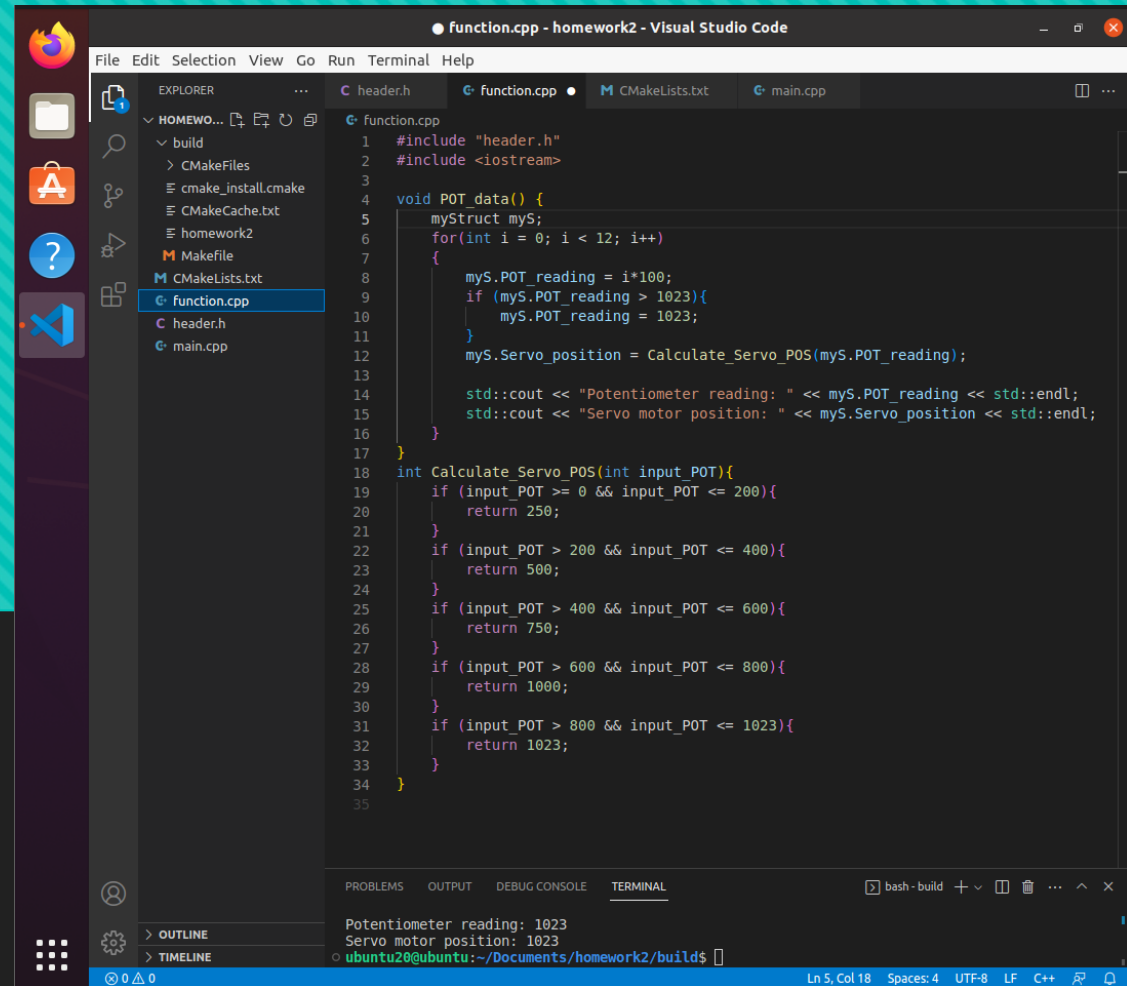


Homework #2 – Solution

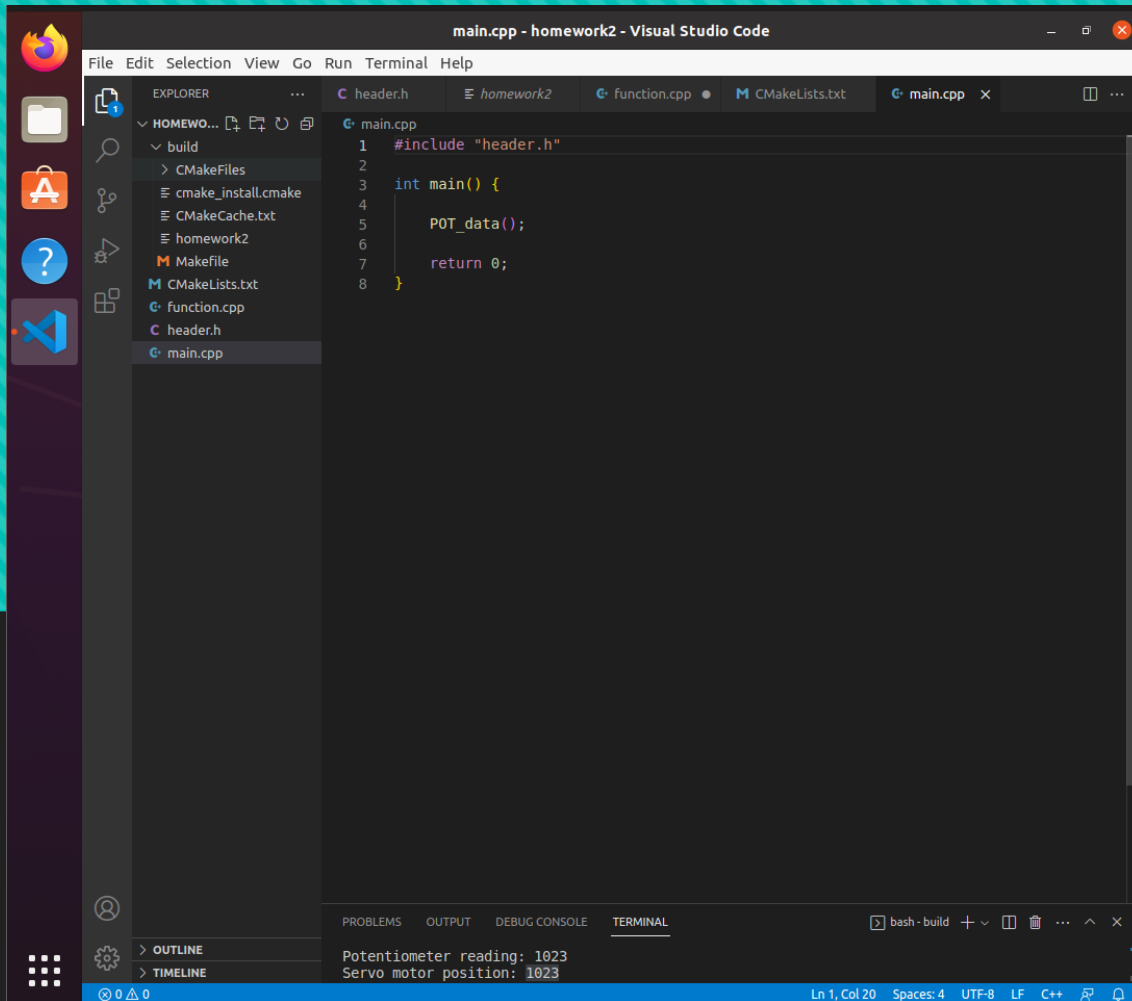


```
header.h - homework2 - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
  HOMEWO...
  build
  CMakeFiles
  cmake_install.cmake
  CMakeCache.txt
  homework2
  Makefile
  CMakeLists.txt
  function.cpp
  header.h
  main.cpp
C header.h
1 #ifndef HEADER_1_H
2 #define HEADER_1_H
3
4 struct myStruct {
5     int POT_reading;
6     int Servo_position;
7 };
8
9 void POT_data();
10 int Calculate_Servo_POS(int input_POT);
11
12 #endif
TERMINAL
bash-build
  Potentiometer reading: 1023
  Servo motor position: 1023
  ubuntu20@ubuntu:~/Documents/homework2/build$
```



```
function.cpp - homework2 - Visual Studio Code
File Edit Selection View Go Run Terminal Help
EXPLORER
  HOMEWO...
  build
  CMakeFiles
  cmake_install.cmake
  CMakeCache.txt
  homework2
  Makefile
  CMakeLists.txt
  function.cpp
  header.h
  main.cpp
function.cpp
1 #include "header.h"
2 #include <iostream>
3
4 void POT_data() {
5     myStruct myS;
6     for(int i = 0; i < 12; i++)
7     {
8         myS.POT_reading = i*100;
9         if (myS.POT_reading > 1023){
10             myS.POT_reading = 1023;
11         }
12         myS.Servo_position = Calculate_Servo_POS(myS.POT_reading);
13
14         std::cout << "Potentiometer reading: " << myS.POT_reading << std::endl;
15         std::cout << "Servo motor position: " << myS.Servo_position << std::endl;
16     }
17 }
18 int Calculate_Servo_POS(int input_POT){
19     if (input_POT >= 0 && input_POT <= 200){
20         return 250;
21     }
22     if (input_POT > 200 && input_POT <= 400){
23         return 500;
24     }
25     if (input_POT > 400 && input_POT <= 600){
26         return 750;
27     }
28     if (input_POT > 600 && input_POT <= 800){
29         return 1000;
30     }
31     if (input_POT > 800 && input_POT <= 1023){
32         return 1023;
33     }
34 }
35
TERMINAL
bash-build
  Potentiometer reading: 1023
  Servo motor position: 1023
  ubuntu20@ubuntu:~/Documents/homework2/build$
```

Homework #2 – Solution

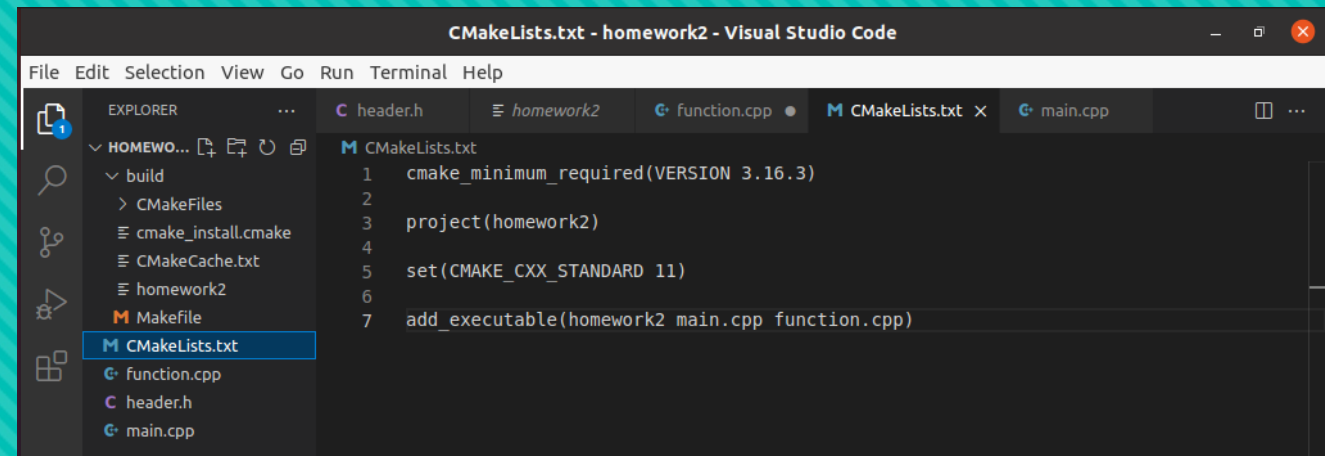


main.cpp - homework2 - Visual Studio Code

```
1 #include "header.h"
2
3 int main() {
4     POT_data();
5     return 0;
6 }
```

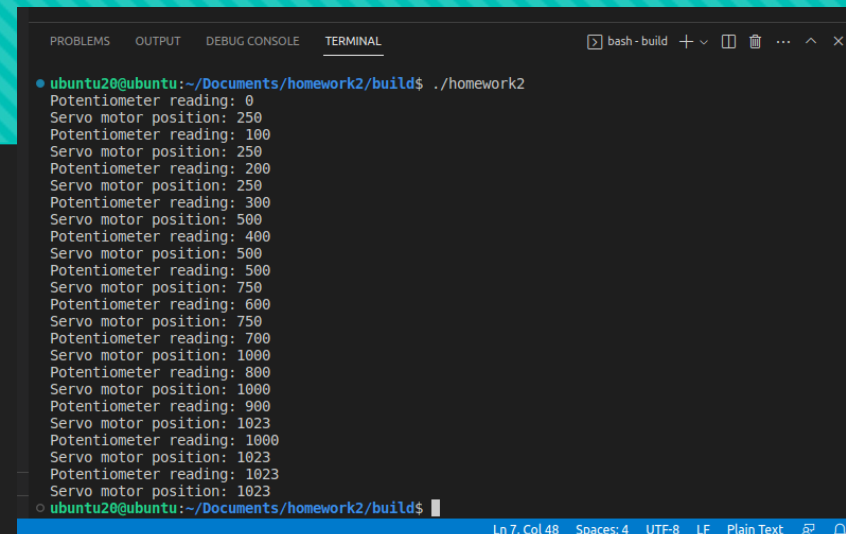
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
Potentiometer reading: 1023
Servo motor position: 1023
```



CMakeLists.txt - homework2 - Visual Studio Code

```
1 cmake_minimum_required(VERSION 3.16.3)
2
3 project(homework2)
4
5 set(CMAKE_CXX_STANDARD 11)
6
7 add_executable(homework2 main.cpp function.cpp)
```



bash-build

```
ubuntu20@ubuntu:~/Documents/homework2/build$ ./homework2
Potentiometer reading: 0
Servo motor position: 250
Potentiometer reading: 100
Servo motor position: 250
Potentiometer reading: 200
Servo motor position: 250
Potentiometer reading: 300
Servo motor position: 500
Potentiometer reading: 400
Servo motor position: 500
Potentiometer reading: 500
Servo motor position: 750
Potentiometer reading: 600
Servo motor position: 750
Potentiometer reading: 700
Servo motor position: 1000
Potentiometer reading: 800
Servo motor position: 1000
Potentiometer reading: 900
Servo motor position: 1023
Potentiometer reading: 1000
Servo motor position: 1023
Potentiometer reading: 1023
Servo motor position: 1023
Potentiometer reading: 1023
Servo motor position: 1023
ubuntu20@ubuntu:~/Documents/homework2/build$
```