C++ Programming

Lab Manual 3

Home Task

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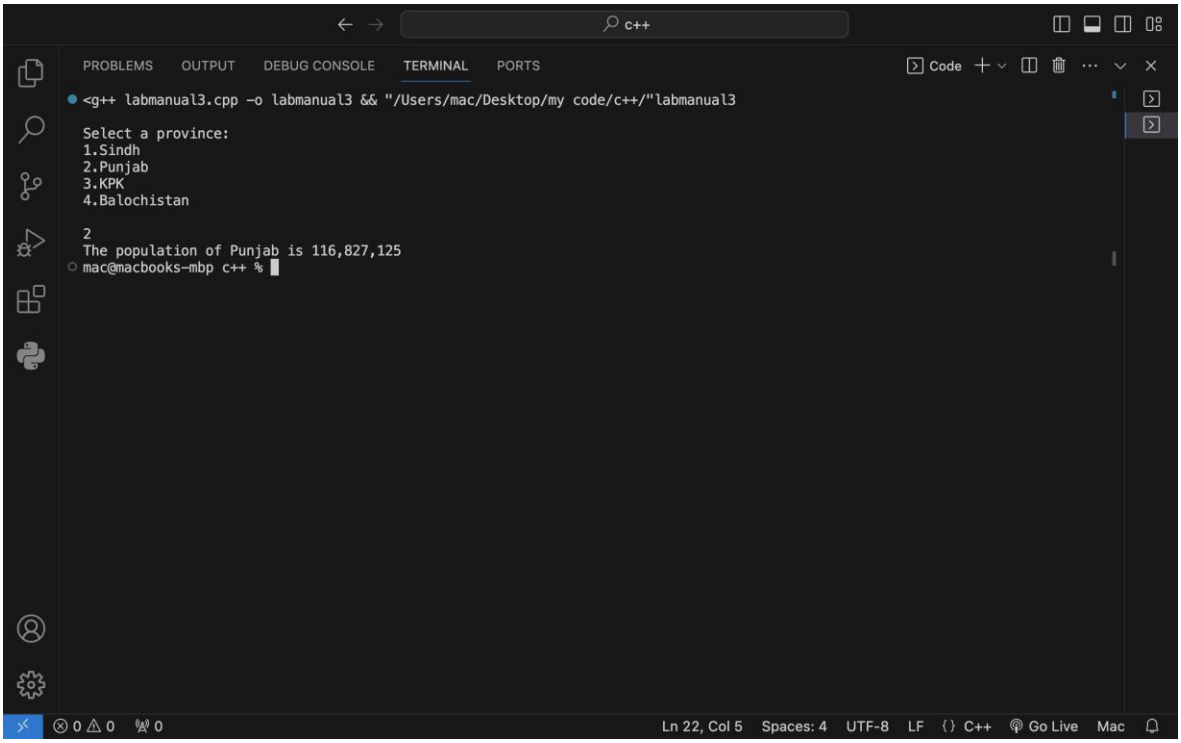
Section B

Q1) Taking province as user input and outputting its population using switch-case.

```
#include <iostream>
using namespace std;

int main(){

int province;
cout<<"\nSelect a province: \n1.Sindh\n2.Punjab\n3.KPK\n4.Balochistan\n"<<endl;
cin>>province;


switch (province){
case 1 : cout<<"The population of Sindh is 54,858,515"<<endl;
break;
case 2 : cout<<"The population of Punjab is 116,827,125"<<endl;
break;
case 3 : cout<<"The population of KPK is 39,372,462"<<endl;
break;
case 4 : cout<<"The population of Balochistan is 20,094,659"<<endl;
break;
}
```

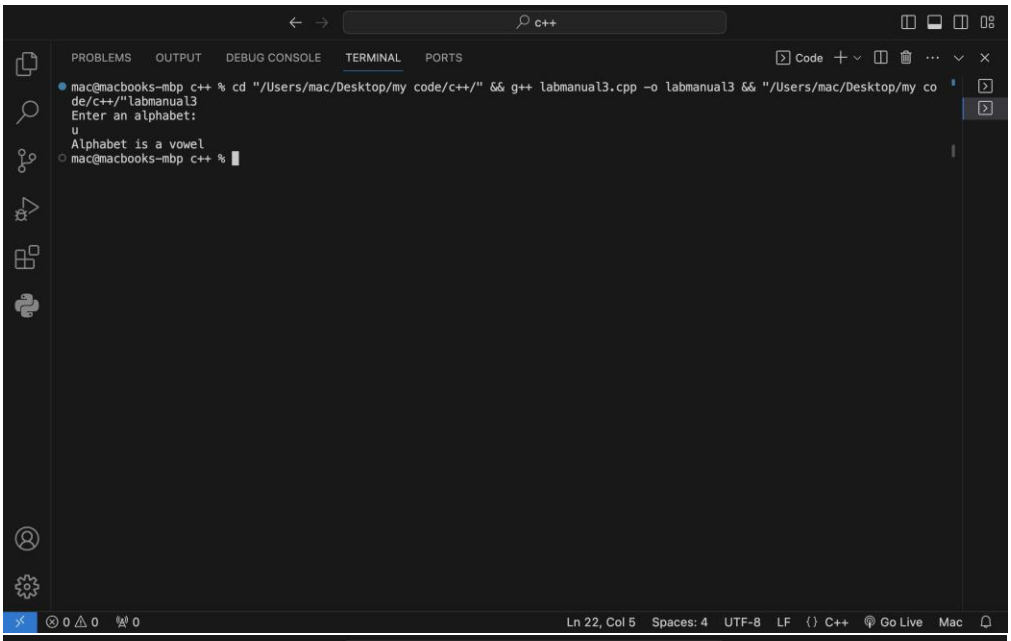
Output:

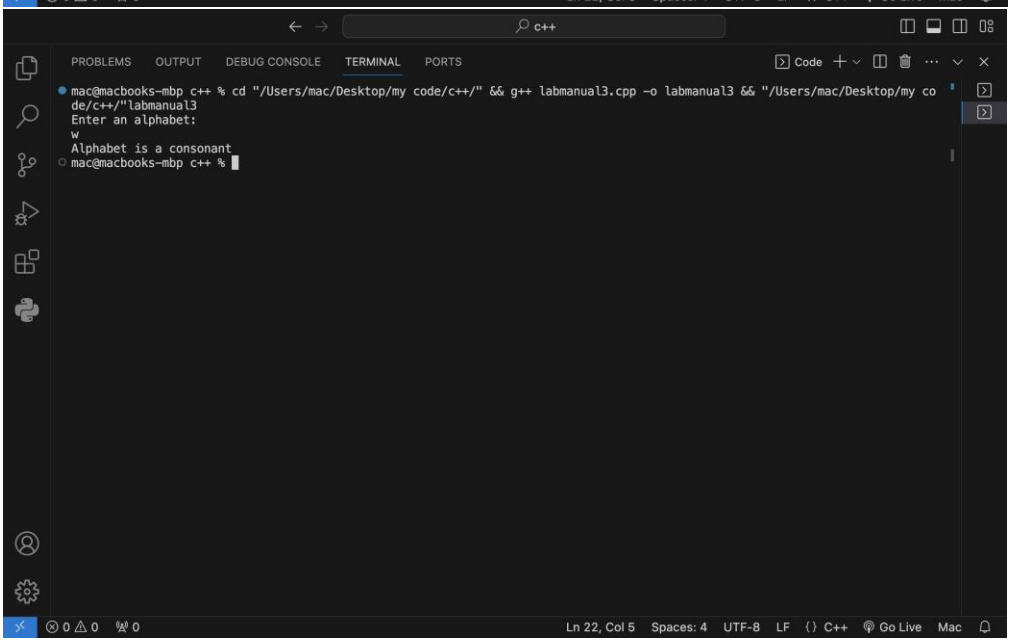

c++
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Code
<g++ labmanual3.cpp -o labmanual3 && "/Users/mac/Desktop/my code/c++/"labmanual3
Select a province:
1.Sindh
2.Punjab
3.KPK
4.Balochistan
2
The population of Punjab is 116,827,125
mac@macbooks-mbp c++ %
Ln 22, Col 5
Spaces: 4
UTF-8
LF
C++
Go Live
Mac

Q2)Determining whether an inputted alphabet is a vowel or a consonant using switch-case statements

```
char alphabet;
cout<<"Enter an alphabet: "<<endl;
cin>>alphabet;
alphabet = tolower(alphabet);


if (alphabet >= 'a' && alphabet <= 'z'){
switch (alphabet){
case 'a':case 'e' :case 'i' :case 'o' :case 'u':
cout<<"Alphabet is a vowel"<<endl;
break;
default: cout<<"Alphabet is a consonant"<<endl;
break;
}
}
else{
cout<<"Invalid Syntax"<<endl;
}
```

Output:



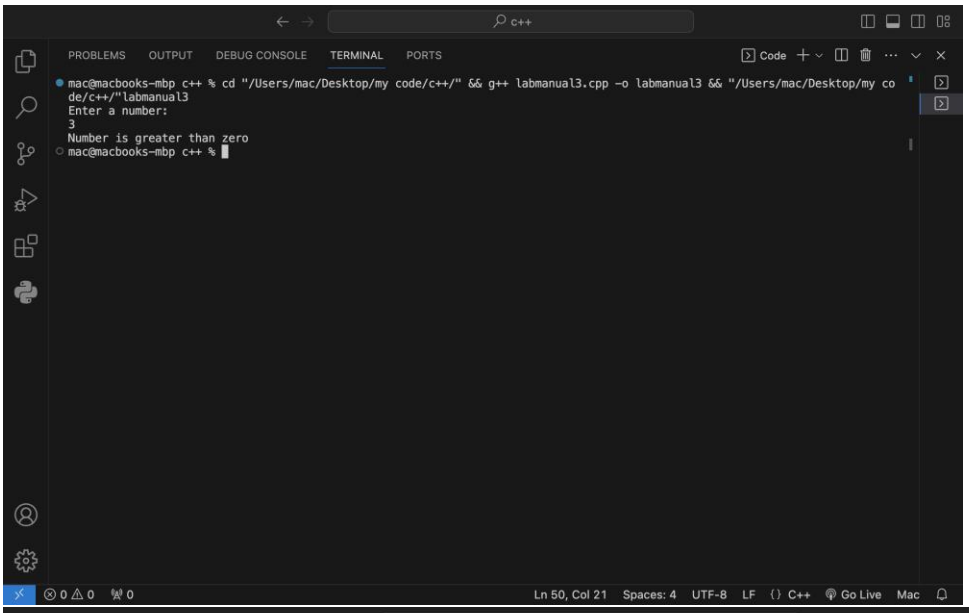


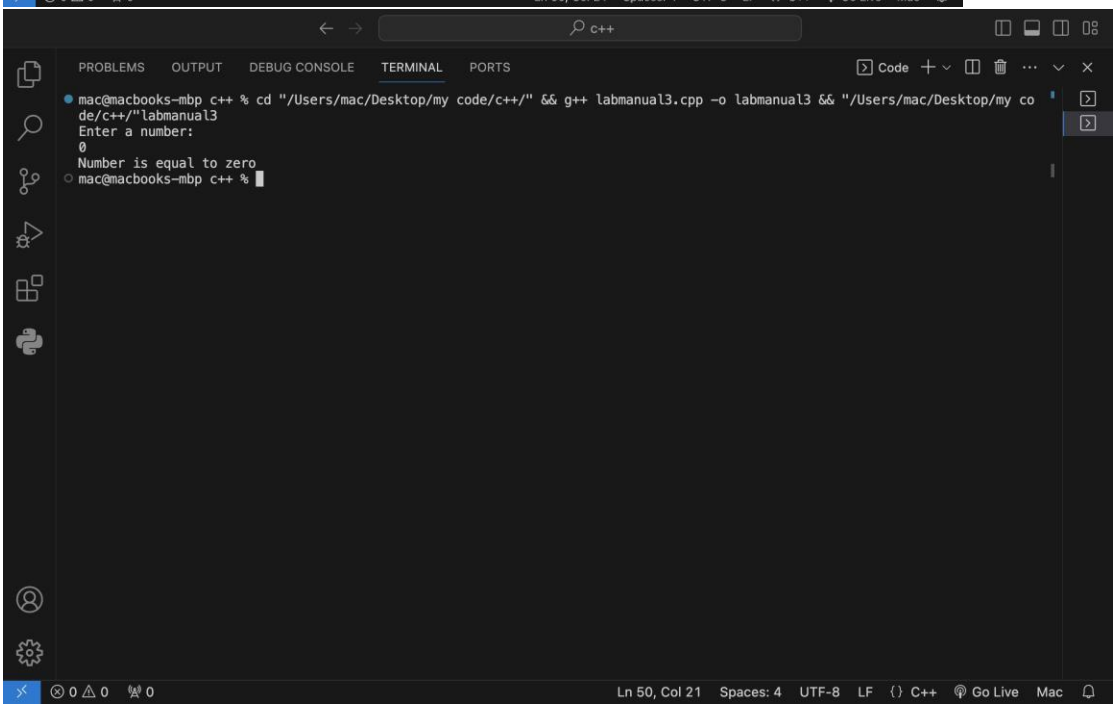
Q3) Taking a number as an input from user and determining if it is equal, greater or less than zero using switch case statements.

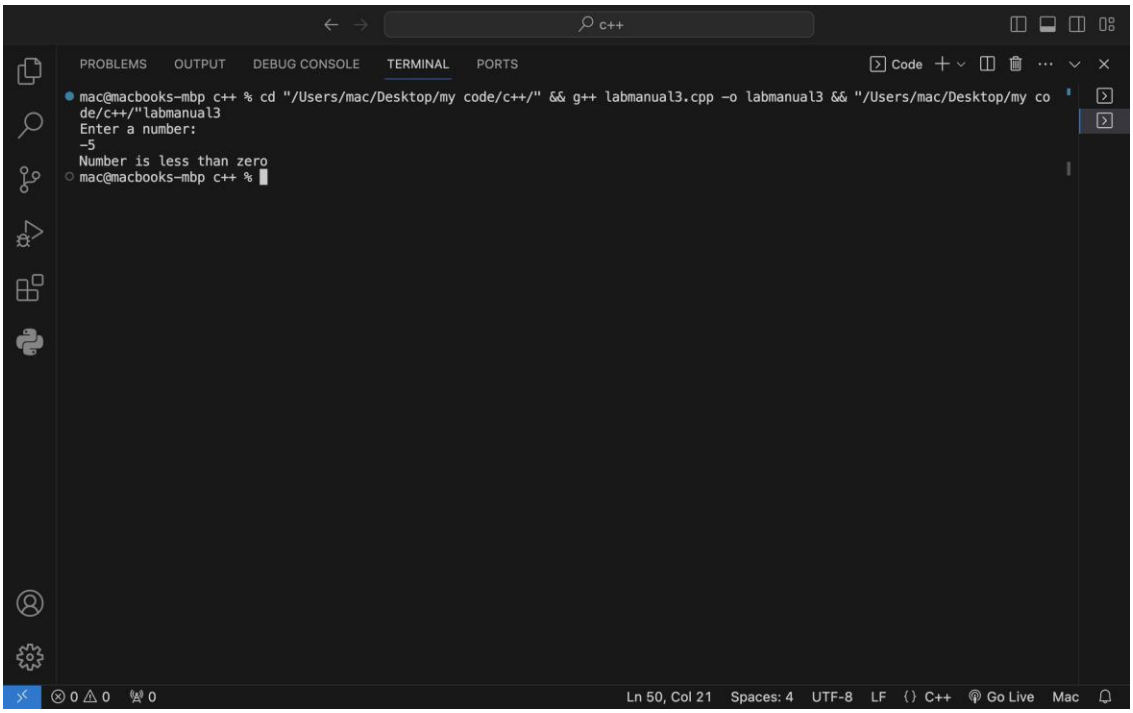
```
int number;
```

```
int s;
cout<<"Enter a number: "<<endl;
cin>>number;

if (number > 0){
s = 1;
}
else if (number == 0){
s = 0;
}
else if (number < 0 ){
s = -1;
}
else{
cout<<"Invalid Syntax"<<endl;
}

switch (s){
case 1 : cout<<"Number is greater than zero"<<endl;
break;
case 0 : cout<<"Number is equal to zero"<<endl;
break;
case -1 : cout<<"Number is less than zero"<<endl;
break;
}
```

Output:


c++
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Code
mac@macbooks-mbp c++ % cd "/Users/mac/Desktop/my code/c++/" && g++ labmanual3.cpp -o labmanual3 && "/Users/mac/Desktop/my co
de/c++/"labmanual3
Enter a number:
3
Number is greater than zero
mac@macbooks-mbp c++ %
0 0 0
Ln 50, Col 21
Spaces: 4
UTF-8
LF
C++
Go Live
Mac

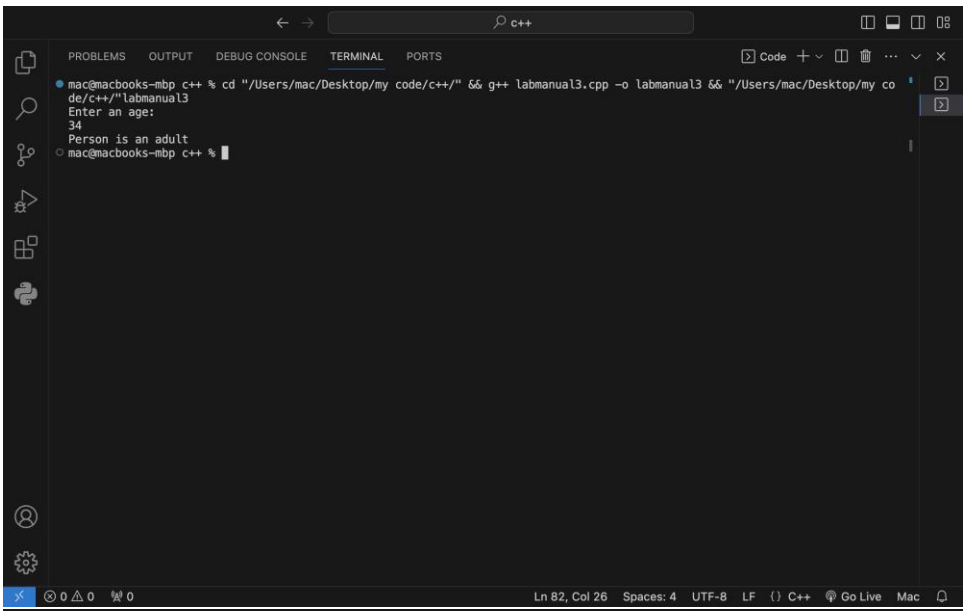

c++
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Code
mac@macbooks-mbp c++ % cd "/Users/mac/Desktop/my code/c++/" && g++ labmanual3.cpp -o labmanual3 && "/Users/mac/Desktop/my co
de/c++/"labmanual3
Enter a number:
0
Number is equal to zero
mac@macbooks-mbp c++ %
0 0 0
Ln 50, Col 21
Spaces: 4
UTF-8
LF
C++
Go Live
Mac

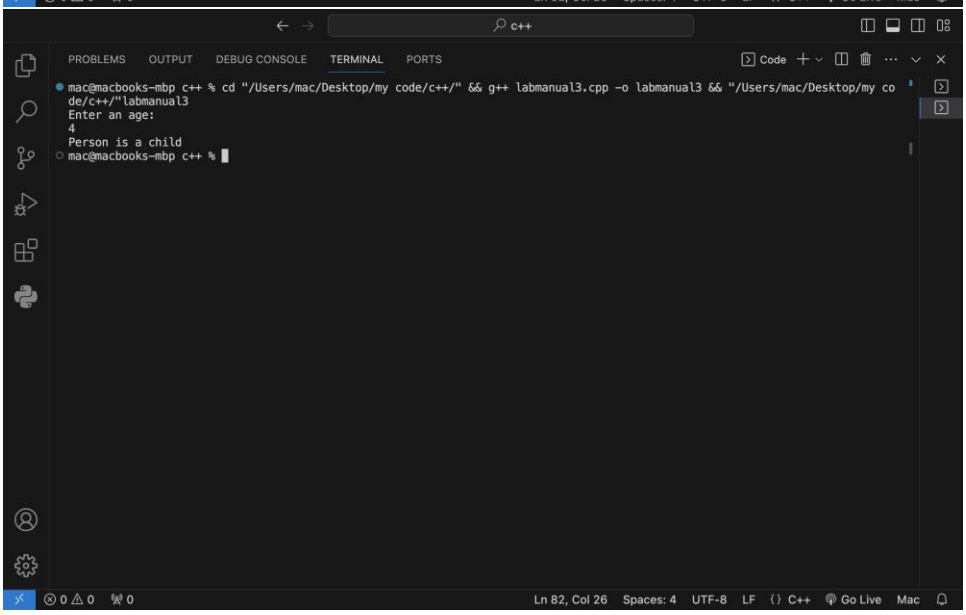

c++
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Code
mac@macbooks-mbp c++ % cd "/Users/mac/Desktop/my code/c++/" && g++ labmanual3.cpp -o labmanual3 && "/Users/mac/Desktop/my code/c++/"labmanual3
Enter a number:
-5
Number is less than zero
mac@macbooks-mbp c++ %
0 0 0
Ln 50, Col 21
Spaces: 4
UTF-8
LF
C++
Go Live
Mac

Q4) Determining whether a person is a child, teenager or an adult using nested if-else.

```
int age;
cout<<"Enter an age: "<<endl;
cin>>age;


if (age > 0){
if (age < 13)
cout<<"Person is a child"<<endl;
else{
if (age < 20)
cout<<"Person is a teenager"<<endl;
else{
if (age<100)
cout<<"Person is an adult"<<endl;
else{
cout<<"Age cannot be greater than 100"<<endl;
}
}
}


}
else{
cout<<"Invalid Syntax"<<endl;
}
```

Output:

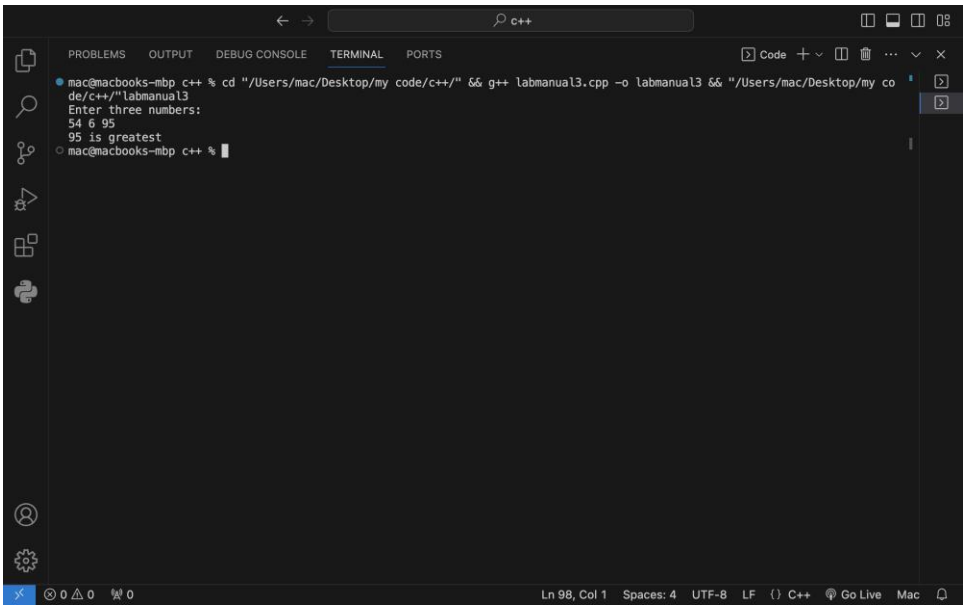

c++
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Code
mac@macbooks-mbp c++ % cd "/Users/mac/Desktop/my code/c++/" && g++ labmanual3.cpp -o labmanual3 && "/Users/mac/Desktop/my code/c++/"labmanual3
Enter an age:
34
Person is an adult
mac@macbooks-mbp c++ %
Ln 82, Col 26
Spaces: 4
UTF-8
LF
C++
Go Live
Mac


c++
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Code
mac@macbooks-mbp c++ % cd "/Users/mac/Desktop/my code/c++/" && g++ labmanual3.cpp -o labmanual3 && "/Users/mac/Desktop/my code/c++/"labmanual3
Enter an age:
4
Person is a child
mac@macbooks-mbp c++ %
Ln 82, Col 26
Spaces: 4
UTF-8
LF
C++
Go Live
Mac

Q5) Taking three inputs from user and outputting greater one using nested if-else.

```
int a,b,c;
cout<<"Enter three numbers: "<<endl;
cin>>a>>b>>c;


if (a > b){
if (a > c)
cout<<a<<" is greatest"<<endl;
else{
if (b > c)
cout<<b<<" is greatest"<<endl;
else{
cout<<c<<" is greatest"<<endl;
}
}
}
else{
if (b > c)
cout<<b<<" is greatest"<<endl;
else{
cout<<c<<" is greatest"<<endl;
}
}
```

Output:

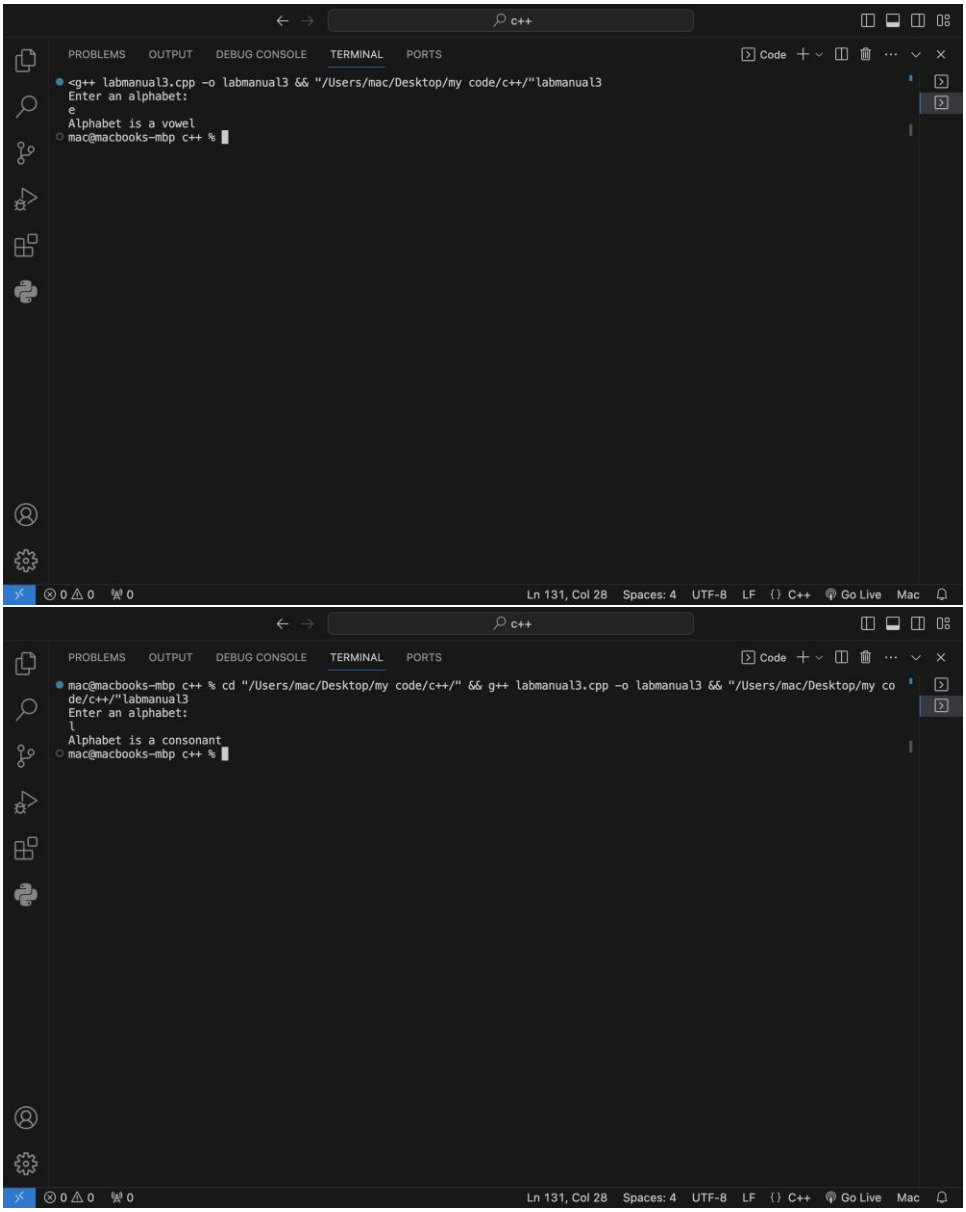

c++
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Code
mac@macbooks-mbp c++ % cd "/Users/mac/Desktop/my code/c++/" && g++ labmanual3.cpp -o labmanual3 && "/Users/mac/Desktop/my code/c++/"labmanual3
Enter three numbers:
54 6 95
95 is greatest
mac@macbooks-mbp c++ %
Ln 98, Col 1
Spaces: 4
UTF-8
LF
C++
Go Live
Mac

Q6) Determining whether an input alphabet is a vowel or a consonant using nested if-else.

```
char alpha;
cout<<"Enter an alphabet: "<<endl;
cin>>alpha;
alpha = tolower(alpha);


if (alpha >= 'a' && alpha <= 'z'){
if (alpha == 'a') //checking vowels
cout<<"Alphabet is a vowel"<<endl;
else{
if (alpha == 'e')
cout<<"Alphabet is a vowel"<<endl;
else{
if (alpha == 'i')
cout<<"Alphabet is a vowel"<<endl;
else{
if (alpha == 'o')
cout<<"Alphabet is a vowel"<<endl;
else{
if (alpha == 'u')
cout<<"Alphabet is a vowel"<<endl;
else{
cout<<"Alphabet is a consonant"<<endl; //alphabet consonat
}
```

```
}
}
}
}
}
else{
cout<<"Invalid Syntax"<<endl; //this will output if user input is anything other than an alphabet
}
}
```

Output:


c++
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Code
<g++ labmanual3.cpp -o labmanual3 && "/Users/mac/Desktop/my code/c++/"labmanual3
Enter an alphabet:
e
Alphabet is a vowel
mac@macbooks-mbp c++ %
Ln 131, Col 28 Spaces: 4 UTF-8 LF C++ Go Live Mac
c++
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Code
mac@macbooks-mbp c++ % cd "/Users/mac/Desktop/my code/c++/" && g++ labmanual3.cpp -o labmanual3 && "/Users/mac/Desktop/my co
de/c++/"labmanual3
Enter an alphabet:
l
Alphabet is a consonant
mac@macbooks-mbp c++ %
Ln 131, Col 28 Spaces: 4 UTF-8 LF C++ Go Live Mac