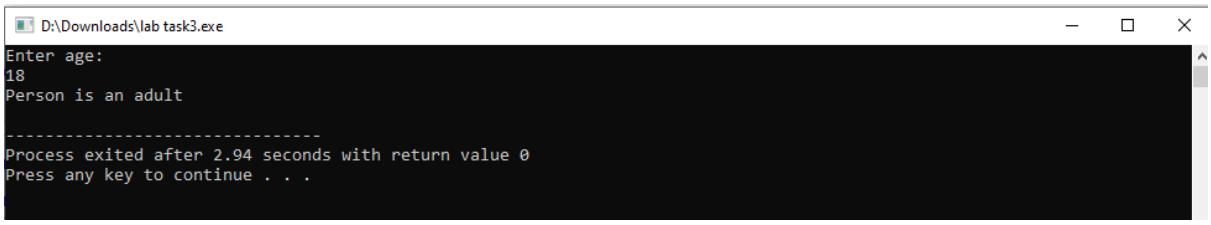
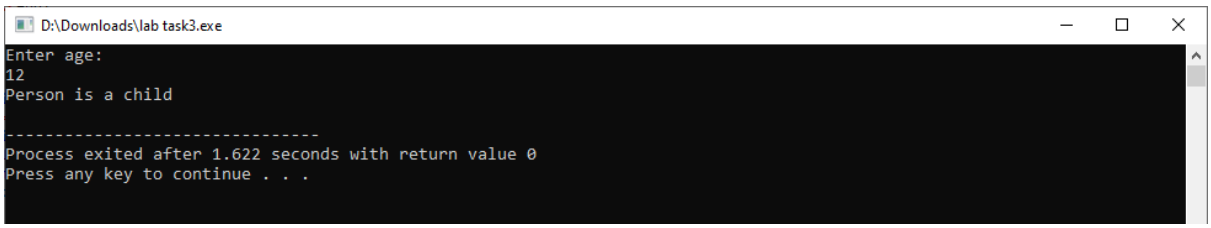
Fundamentals of Programming
ME-15
Section B
1st Semester
Date of Submission: 18/10/2023
Haniyyah Abbas 481755

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

int main () {
        int age;
        cout<<"Enter age:"<<endl;
        cin>>age;

        if (age < 18) {                 /*Both conditions are true for a child. To get an output, both 'if' statements must be satisfied*/
                if (age < 13) {
                cout<<"Person is a child"<<endl;}
                else if (age >= 13 && age < 18) {     /*if child is aged greater than 13 but less than 18, the output reads 'Person is a teenager'.*/
                cout<<"Person is a teenager"<<endl;}
        } else if (age >= 18) {
        cout<<"Person is an adult"<<endl;}
   //else statement not needed because nothing needs to be proven false here
        return 0;}
```

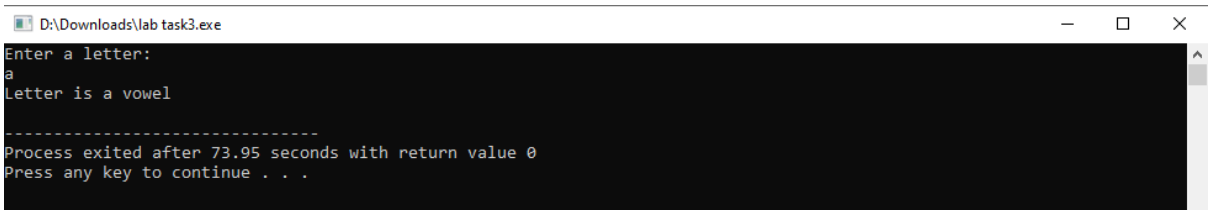


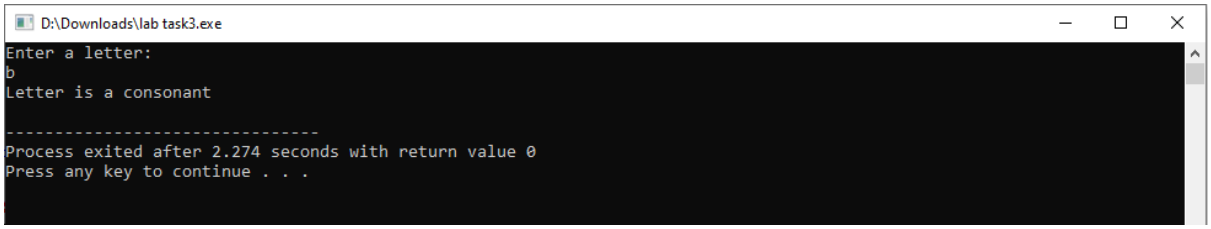


```
int main (){
        int num1, num2, num3;
        cout<<"Enter first number:"<<endl;
        cin>>num1;
        cout<<"Enter second number:"<<endl;
        cin>>num2;
        cout<<"Enter third number:"<<endl;
        cin>>num3;

        if (num1 > num2) {              /*Nested if-else statements show two if conditions that must be satisfied in order for the else statement to work*/
                if (num1 > num3) {              /*Here num1 has to be greater than both num2 and num3 for the else statement to work*/
                cout<<num1<<" is the largest"<<endl;}
                else {
                cout<<num2<<" is the largest"<<endl;}
        } else {    //this 'else' is for the first if statement written
        if (num3 > num2) {
        /*In the first part, if num1 is larger than both num2 and num3, it prints num1 'is the largest'. Otherwise num2 'is the largest'. But in case num3 is larger than num2, the second part is checked. In the second if-else block it's written that if num3 is larger than num2, it prints num3 'is the  largest'. If not, num2 'is the largest' is printed instead*/
        cout<<num3<<" is the largest"<<endl;}
        else {
        cout<<num2<<" is the largest"<<endl;}
        }
return 0;}
```

```
int main () {
        char letter;
        cout<<"Enter a letter:"<<endl;
        cin>>letter;

        if (letter >= 'a' && letter <= 'z') {
                if (letter == 'a' || letter == 'e' || letter == 'i' || letter == 'u' || letter == 'o') {
                cout<<"Letter is a vowel"<<endl;}
        else {
        cout<<"Letter is a consonant"<<endl;}
        }

return 0;}
```

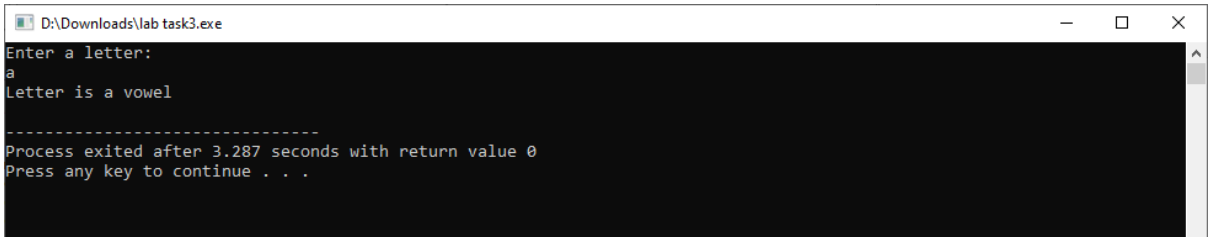
/*In this code I used nested if-else statements to check whether a letter is a consonant or vowel. The first condition tells us that the letter inputted must be the alphabets from a-z. Once that condition is satisfied if the user inputs a, i, e, o, OR u, (hence why we use the operator '||') the computer will print 'Letter is a vowel'. Otherwise, the computer will input 'Letter is a consonant'*/

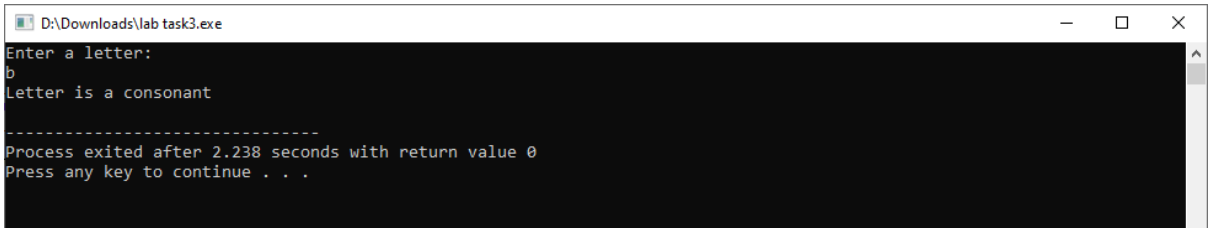




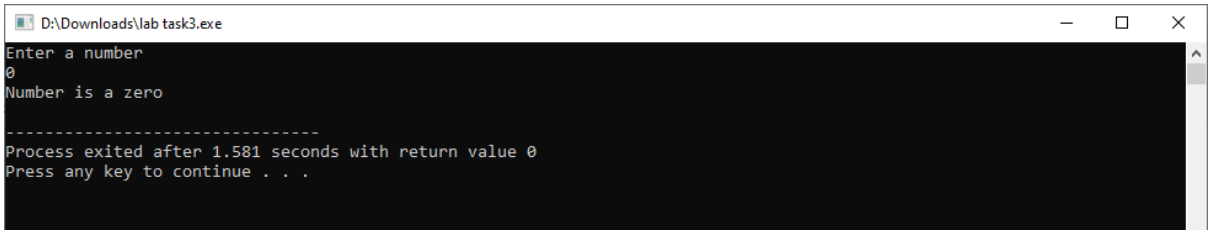
```
int main () {
        char letter;
        cout<<"Enter a letter:"<<endl;
        cin>>letter;

        switch (letter) {
        case'a':
        case'e':
        case'i':
        case'o':
        case'u':
        cout<<"Letter is a vowel"<<endl;
        break;
        default:
        cout<<"Letter is a consonant"<<endl;}

return 0;}
```

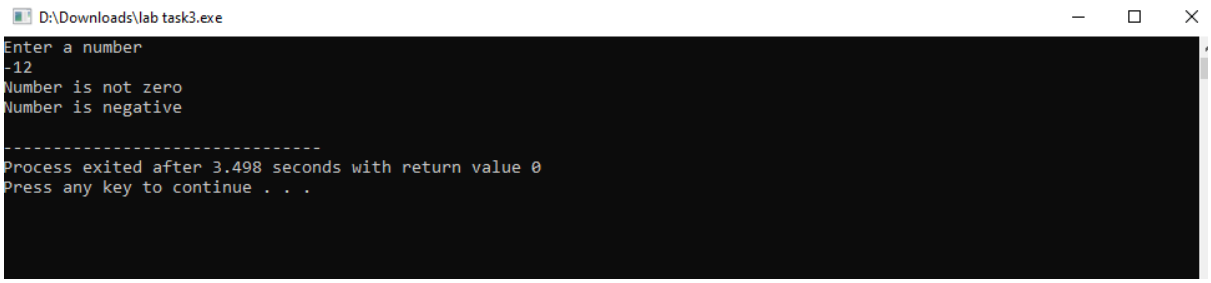
/*In this code we were to use a switch case method to check whether a letter inputted is a vowel or a consonant. Since the main variable was 'letter', the parentheses for the switch statement have to include 'letter' as well. Therefore, we have to write a letter (in single quotations marks) before the word 'case'. If the user inputs any vowel, the computer will tell you it is a vowel and vice versa. */





```
int main () {
        int number;
        cout<<"Enter a number"<<endl;
        cin>>number;

        switch (number) {
        case 0:          //when zero is entered, the computer tells us that the number is zero
        cout<<"Number is a zero"<<endl;
        break;
        default:
        cout<<"Number is not zero"<<endl;    //a number other than zero will print this statement

        if (number < 0) {    /*writing 'if' here so if the user enters ANY number it will be read as negative*/
        cout<<"Number is negative"<<endl;
        }
        else {
        cout<<"Number is postive"<<endl;}
        break;}

return 0;}
```





```
int main (){
	int provinces;
	cout<<"Enter the designated number for each province: Punjab(1), KPK(2), Sindh(3), Balochistan(4)"<<endl;
	cin>>provinces;

	switch(provinces) {
	case 1:
	cout<<"Punjab's population is 127,474,000 people"<<endl;
	break;
	case 2:
	cout<<"KPK's population is 40,800,000 people"<<endl;
	break;
	case 3:
	cout<<"Sindh's population is 54,858,515 people"<<endl;
	break;
	case 4:
	cout<<"Balochistan's population is 20,094,659 people"<<endl;
	break;
	default:
```

```
        cout<<"Invalid"<<endl;     /*this is for when the user presses any number other than 1,2,3, and 4*/

        }


return 0;}
```

/*In this code, I used a switch case method to show the populations of four different provinces in Pakistan. In the first row, it was important to number each province when the user had to input something because inputting the word itself always gave an error. Inputting a number designated to each province will make the computer display the population size of that particular province. */