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Fundamentals of Programming

Assignment no. 3

```

#include <iostream>

using namespace std;

int main () {

    //TASK 1

    char province;
    int population = 0;

    cout<<"Enter the name of the province (P for Punjab, S for Sindh, B for Baluchistan,
K for KPK)"<<endl;

    cin>>province;

    switch (province) {
        case 'P':
            //Switch case allows specific data to be
            //entered by the user and runs a condition
            //based on it.
            population = 127474000;

        break;

        case 'S':
            population = 57931907;

        break;

        case 'B':
            population = 14894402;

        break;

        case 'K':
            population = 39596664;

        break;

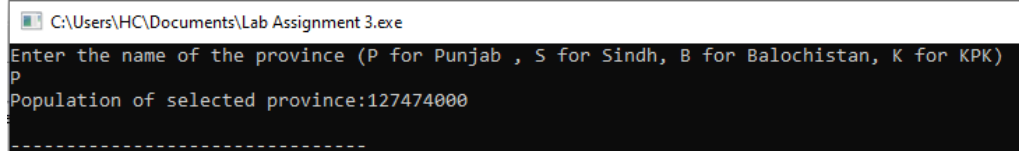
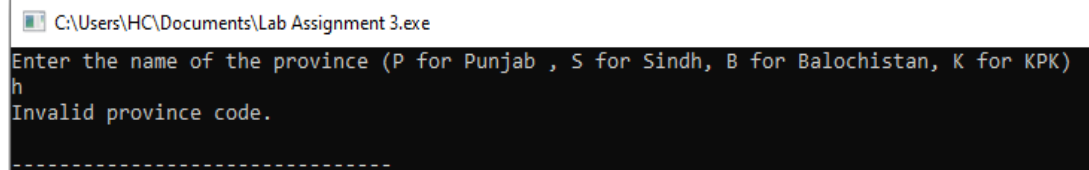
        default:
            //Default case is basically when no condition runs within the cases or the user
            //input invalid data
            cout<<"Invalid province code."<<endl;

        return 1;

        //This cout outputs only when one of the cases are
        //fulfilled
    }

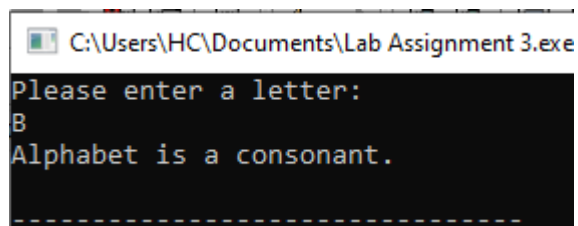
    cout<<"Population of selected province: "<<population<<endl;

```

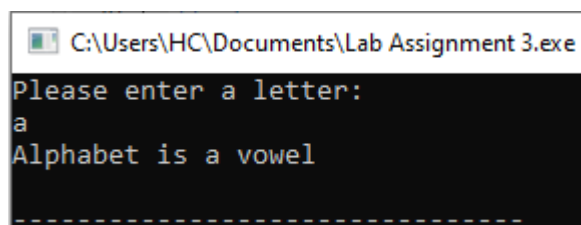



//TASK 2

```
char Alphabet;  
  
cout<<"Please enter a letter: "<<endl; cin>>Alphabet;  
  
Alphabet= tolower(Alphabet); //This function turns capital letters into lowercase.  
  
switch (Alphabet) {  
    case 'a':  
    case 'e':  
    case 'i':  
    case 'o':  
        case 'u':          /If any of the above cases come true then this will be outputted  
        cout<<"Alphabet is a vowel"<<endl;  
        break;  
  
    default:  
        cout<<"Alphabet is a consonant."<<endl;  
        break;  
  
}
```



```
C:\Users\HC\Documents\Lab Assignment 3.exe  
Please enter a letter:  
B  
Alphabet is a consonant.  
-----
```



```
C:\Users\HC\Documents\Lab Assignment 3.exe  
Please enter a letter:  
a  
Alphabet is a vowel  
-----
```

//TASK 3

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

//This is a nested loop which checks if the number is positive, negative or zero
if (number <0) {
    n = -1;
} else if (number > 0) {
    n = 1;
} else if (number == 0) {
    n = 0;
} //The nested if-else loop sends a value according to its check to the switch case.
switch (n) { //The switch case uses "n" as a variable that has a value assigned by the loop
    case -1:
        cout<<"Number is negative."<<endl;
        break;
    case 1:
        cout<<"Number is positive."<<endl;
        break;
    case 0:
        cout<<"Number is 0."<<endl;
        break;
```

```
}
```

C:\Users\HC\Documents\Lab Assignment 3.exe

```
Enter a number:
-10
Number is negative.
-----
```

C:\Users\HC\Documents\Lab Assignment 3.exe

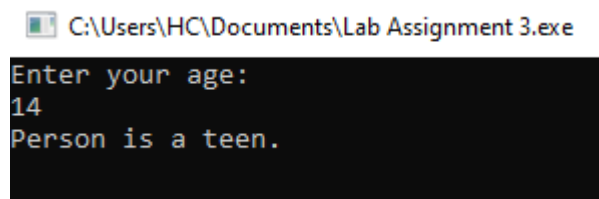
```
Enter a number:
-4
Number is negative.
```

//TASK 4

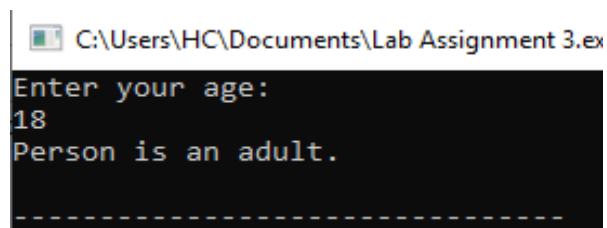
```
int age;
cout<<"Enter your age: "<<endl; cin>>age;

//This nested if-else loop checks if the person is a child, teen or adult
if (age>=18) {
cout<<"Person is an adult."<<endl;
} else {
if (age<18 && age>=13) {
    cout<<"Person is a teen."<<endl;

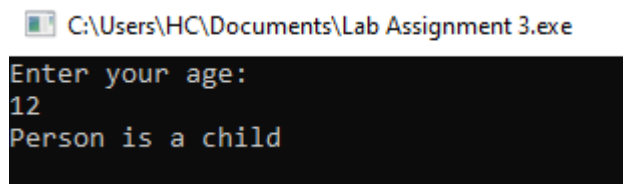
} else {
    cout<<"Person is a child"<<endl;
}
}
```



```
C:\Users\HC\Documents\Lab Assignment 3.exe
Enter your age:
14
Person is a teen.
```



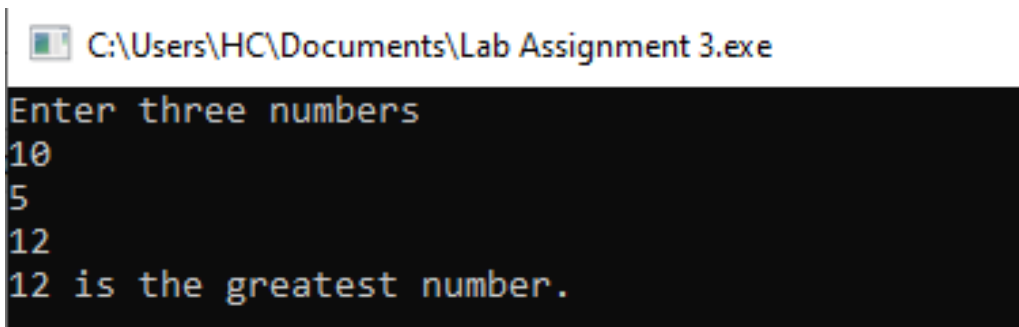
```
C:\Users\HC\Documents\Lab Assignment 3.exe
Enter your age:
18
Person is an adult.
-----
```



```
C:\Users\HC\Documents\Lab Assignment 3.exe
Enter your age:
12
Person is a child
```

//TASK 5

```
int num1,num2,num3;
cout<<"Enter three numbers"<<endl; cin>>num1>>num2>>num3;
//This nested if-else loop checks three numbers and decides which one is the greatest.
if (num1>=num2) {
    if (num1>=num3) {
        cout<<num1<<" is the greatest number."<<endl;
    } else {
        cout<<num3<<" is the greatest number."<<endl;
    }
} else {
    if (num2>=num3) {
        cout<<num2<<" is the greatest number."<<endl;
    } else {
        cout<<num3<<" is the greatest number."<<endl;
    }
}
```



```
C:\Users\HC\Documents\Lab Assignment 3.exe
Enter three numbers
10
5
12
12 is the greatest number.
```

//TASK 6

```
char letter;


cout << "Enter a letter: ";
cin >> letter;

//This nested if-else loop checks if a letter is from the vowels or consonants regardless of
them being lowercase or uppercase
if ((letter >= 'a' && letter <= 'z') || (letter >= 'A' && letter <= 'Z')) {
    if (letter == 'a' || letter == 'e' || letter == 'i' || letter == 'o' || letter == 'u' ||
        letter == 'A' || letter == 'E' || letter == 'I' || letter == 'O' || letter == 'U') {
        cout << letter << " is a vowel." << endl;
    } else {
        cout << letter << " is a consonant." << endl;
    }
} else {
    cout << "Invalid input. Please enter a valid letter." << endl;
}

return 0;
```

 C:\Users\HC\Documents\Lab Assignment 3.exe

```
Enter a letter: a
a is a vowel.
-----
```

 C:\Users\HC\Documents\Lab Assignment 3.exe

```
Enter a letter: B
B is a consonant.
-----
```