LAB MANUAL: 03

HOME TASK

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Q 01 Write a C++ program to print the total number of populations in Punjab,

Sindh, KPK, and Baluchistan using a switch case.

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

int main() {
    // Declaration of a variable(province)
    char province;

    // Request the user to input their choice of province.
    cout<<"Press p for Punjab, s for Sindh, k for KPK, b for Balochistan: ";

    // Store it input in the  'province' variable.
    cin >> province;

    // Use a switch statement to handle different cases based on user input.
    switch (province) {
        case 'p':
            // If user presses 'p', display the population of Punjab.
            cout << "Population of Punjab = 110 Million" << endl;
            break;
        case 's':
            // If user presses 's', display the population of Sindh.
            cout << "Population of Sindh = 47 Million" << endl;
            break;
        case 'k':
            // If user presses 'k', display the population of KPK.
            cout << "Population of KPK = 35 Million" << endl;
            break;
        case 'b':
            // If user presses 'b', display the population of Balochistan.
            cout << "Population of Balochistan = 12 Million" << endl;
            break;
        default:
            // If the given data by user is not from the above mentioned cases then display an error message.
            cout << "Selected invalid option. Please select the correct option! " << endl;
            break;
    }
    return 0;
}
```

```
Press p for Punjab, s for Sindh, k for KPK, b for Balochistan: k
Population of KPK = 35 Million

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Process exited after 3.28 seconds with return value 0
Press any key to continue . . .
```

Q 02. Write a C++ program to check whether an alphabet is a vowel or

consonant using a switch case.

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

int main() {
    // Declare a variable to store the user's input alphabet.
    char alphabet;

    // Request the user to input an alphabet.
    cout << "Enter the alphabet: " << endl;

    // Store user's input in the 'alphabet' variable.
    cin >> alphabet;

    // Use a switch statement to check if the input alphabet is a vowel or a consonant.
    switch (alphabet) {
        // If the input is 'a', 'e', 'i', 'o', or 'u', it's a vowel, so display a message.
        case 'a':
            cout << "Your alphabet is a vowel. " << endl;
            break;
        case 'e':
            cout << "Your alphabet is a vowel. " << endl;
            break;
        case 'i':
            cout << "Your alphabet is a vowel. " << endl;
            break;
        case 'o':
            cout << "Your alphabet is a vowel. " << endl;
            break;
        case 'u':
            cout << "Your alphabet is a vowel. " << endl;
            break;
        default:
            // If the input is not one of the vowels, it's a consonant, so display a different message.
            cout << "Your alphabet is a consonant. " << endl;
            break;
    }
    return 0;
}
```

```
Enter the alphabet:
e
Your alphabet is a vowel.

-------------------------------
Process exited after 1.332 seconds with return value 0
Press any key to continue . . .
```

Q 03 . Write a C++ program to check whether a number is positive, negative, or

zero using a switch case.

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

int main() {
    // Declare a variable to store the user's input integer.
    int integer;

    // Request the user to input an integer.
    cout << "Enter the integer: ";

    // Store the input in the 'integer' variable.
    cin >> integer;

    // Use a switch statement with a condition to check if the input integer is positive, negative, or zero.
    switch (integer > 0) {
        case true:
            // If the condition is true (integer is greater than 0), display a message indicating it's positive.
            cout << "Your integer is positive." << endl;
            break;
        case false:
            // If the condition is false (integer is not greater than 0), enter a nested switch statement.
            switch (integer < 0) {
                case true:
                    // Within the nested switch, if the integer is less than 0, display a message indicating it's negative.
                    cout << "Your integer is negative." << endl;
                    break;
                case false:
                    // If neither condition in the nested switch is met, it means the integer is zero, so display a message indicating that.
                    cout << "Your integer is zero." << endl;
                    break;
            }
    }
    return 0;
}
```

```
Enter the integer: -89
Your integer is negative.

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Process exited after 2.947 seconds with return value 0
Press any key to continue . . .
```

Q 04 Write a C++ to find out whether a person is an adult, teenager, or child using nested if-else

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

int main() {
    // Declaring the "age" variable.
    int age;

    // Request the user to input the person's age.
    cout << "Enter the person's age: " << endl;

    // Store it in the 'age' variable.
    cin >> age;

    // Check the age using conditional statements.
    if (age >= 18) {
        // If the age is 18 or greater, then display "The person is an adult" .
        cout << "The person is an adult.";
    }
    else if (age >= 10) {
        // If the age is less than 18 but 10 or greater, then display "The person is a teenager" .
        cout << "The person is a teenager.";
    }
    else {
        // If the age is less than 10,then display "The person is a child" .
        cout << "The person is a child.";
    }
    return 0;
}
```

```
Enter the person's age:
09
The person is a child.
--------------------------------
Process exited after 4.91 seconds with return value 0
Press any key to continue . . . _
```

Q 05 Write a C++ program that takes three number from the user and find the

greatest number out of the three numbers using nested if-else statements.

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

int main() {
    // Declare variables to store three numbers.
    int num1, num2, num3;

    // Request the user to input the numbers one by one.
    cout << "ENTER THE NUMBERS ONE BY ONE: " << endl;

    // Store the numbers in their respective variables.
    cin >> num1 >> num2 >> num3;

    // Use if,nested if statement to find and display the greatest number among the three.
    if (num1 > num2) {
        // If num1 is greater than num2, check if it's also greater than num3.
        if (num1 > num3) {
            // If both conditions are met, num1 is the greatest number, so display "The greater number is: " with num1.
            cout << "The greater number is: " << num1 << endl;
        }
    }
    if (num2 > num1) {
        // If num2 is greater than num1, check if it's also greater than num3.
        if (num2 > num3) {
            // If both conditions are met, num2 is the greatest number, so display "The greater number is: " with num2.
            cout << "The greater number is: " << num2 << endl;
        }
    }
    if (num3 > num1) {
        // If num3 is greater than num1, check if it's also greater than num2.
        if (num3 > num2) {
            // If both conditions are met, num3 is the greatest number, so display "The greater number is: " with num3.
            cout << "The greater number is: " << num3 << endl;
        }
    }
    return 0;
}
```

```
ENTER THE NUMBERS ONE BY ONE:
564
76
4343
The greatest number is: 4343

--------------------------------
Process exited after 8.283 seconds with return value 0
Press any key to continue . . .
```

Q 06 Write a C++ program to check whether the alphabet entered by the user

is Vowel or consonant using nested if-else.

```cpp
#include<iostream>
using namespace std;
int main() {
    // Declare a variable "alphabet".
    char alphabet;
    // Request the user to enter the alphabet.
    cout<<"Enter the alphabet: "<<endl;
    // Store the user's entered input in "alphabet".
    cin>>alphabet;
    // Using various if and else if statements to check whether the alphabet is a vowel or a consonant.
    if(alphabet=='a'){
        cout<<"your alphabet is a vowel."<<endl;
    }else if(alphabet=='e'){
        cout<<"your alphabet is a vowel."<<endl;
    }else if(alphabet=='i'){
        cout<<"your alphabet is a vowel."<<endl;
    }else if(alphabet=='o'){
        cout<<"your alphabet is a vowel."<<endl;
    }else if(alphabet=='u'){
        cout<<"your alphabet is a vowel."<<endl;
    }else {
        cout<<"your alphabet is a consonant."<<endl;
    }
    return 0;
}
```

```
Enter the alphabet:
e
your alphabet is a vowel.

--------------------------------
Process exited after 3.196 seconds with return value 0
Press any key to continue . . .
```