

FUNDAMENTALS OF PROGRAMMING

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LAB 3

HOME TASK 1

Write a C++ program to print the total number of populations in Punjab, Sindh, KPK, and Balochistan using a switch case.

```
Untitled1.cpp
#include <iostream>
int main() {
    char region;
    int population = 0;

    cout << "Enter the region (P for Punjab, S for Sindh, K for KPK, B for Balochistan): ";
    cin >> region;

    switch (region) {
        case 'P':
            population = 110012442; // Population of Punjab
            break;
        case 'S':
            population = 47900120; // Population of Sindh
            break;
        case 'K':
            population = 30939100; // Population of Khyber Pakhtunkhwa (KPK)
            break;
        case 'B':
            population = 12345963; // Population of Balochistan
            break;
        return 1;
    }
    std::cout << "Population of the selected region: " << population << std::endl;
    return 0;
}
```

HOME TASK 2

Write a C++ program to check whether an alphabet is a vowel or consonant using a switch case

```
#include <iostream>
using namespace std;
int main() {
    char alphabet;
    cout << "Enter an alphabet: ";
    cin >> alphabet;
    switch (alphabet) {
        case 'a':
        case 'A':
        case 'e':
        case 'E':
        case 'i':
        case 'I':
        case 'o':
        case 'O':
        case 'u':
        case 'U':
            cout << alphabet << " is a vowel." << endl;
            break;
        default:
            cout << alphabet << " is a consonant." << endl;
    }
    return 0;
}
```

HOME TASK 3

Write a C++ program to check whether a number is positive, negative, or zero using a switch case

```
Untitled1.cpp  [*] Untitled2.cpp  [*] Untitled3
#include <iostream>

int main() {
    int number;
    std::cout << "Enter a number: ";
    std::cin >> number;
    switch (sgn(number)) {
        case 1:
            std::cout << "The number is positive." << std::endl;
            break;
        case 0:
            std::cout << "The number is zero." << std::endl;
            break;
        case -1:
            std::cout << "The number is negative." << std::endl;
            break;
    }
    return 0;
}
```

HOME TASK 4

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

```
Untitled1.cpp
#include <iostream>
using namespace std;
int main() {
    int age;
    cout<<"Enter the person's age:
    cin >> age;
    if (age >= 18) {
        cout<<"The person is an adult." << endl; if (age >= 13)
        cout << "The person is a teenager." <<
        cin>>endl;
    }
    else
        cout << "The person is a child." <<;
    cin>>endl;
}
```

HOME TASK 5

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.

```
Untitled1.cpp  [*] Untitled2.cpp  [*] Untitled3  [*] Untitled4  [*] Untitled5

#include <iostream>
int main() {
    double num1, num2, num3;
    // Input three numbers
    cout << "Enter the first number: ";
    cin >> num1;
    cout << "Enter the second number: ";
    cin >> num2;
    cout << "Enter the third number: ";
    cin >> num3;

    if (num1 >= num2) {
        if (num1 >= num3) {
            cout << "The greatest number is: " << num1 << std::endl;
        } else {
            cout << "The greatest number is: " << num3 << std::endl;
        }
    } else {
        if (num2 >= num3) {
            cout << "The greatest number is: " << num2 << std::endl;
        } else {
            cout << "The greatest number is: " << num3 << std::endl;
        }
    }
    return 0;
}
```

HOME TASK 6

Write a C++ program to check whether the alphabet entered by the user is Vowel or Consonant using nested if-else.

```
#include <iostream>
using namespace std;
int main() {
    char alphabet;
    cout << "Enter an alphabet: ";
    cin >> alphabet;
    if ((alphabet >= 'a' && alphabet <= 'z') || (alphabet >= 'A' && alphabet <= 'Z')) {
        if (alphabet == 'a' || alphabet == 'e' || alphabet == 'i' || alphabet == 'o' || alphabet == 'u' ||
            alphabet == 'A' || alphabet == 'E' || alphabet == 'I' || alphabet == 'O' || alphabet == 'U') {
            cout << alphabet << " is a vowel." << endl;
        } else {
            cout << alphabet << " is a consonant." << endl;
        }
    } else {
        cout << "Invalid input. Please enter a valid alphabet." << endl;
    }
    return 0;
}
```