Fundamentals of Programming

Lab Manual-3

Home Tasks

Ahsan Kamran (481898)

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

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

int main() {
    int choice;

    cout << "Choose a province:\n";
    cout << "1. Punjab\n";
    cout << "2. Sindh\n";
    cout << "3. KPK\n";
    cout << "4. Balochistan\n";
    cout << "Enter your choice (1-4): ";
    cin >> choice;

    switch(choice) {
        case 1:
            cout << "Total population of Punjab: 110,012,442" << endl;
            break;
        case 2:
            cout << "Total population of Sindh: 47,886,051" << endl;
            break;
        case 3:
            cout << "Total population of KPK: 35,525,047" << endl;
            break;
        case 4:
            cout << "Total population of Balochistan: 12,344,408" << endl;
            break;
        default:
            cout << "Invalid choice!" << endl;
            break;
    }

    return 0;
}
```

```
C:\Users\ahsen\OneD
Choose a province:
1. Punjab
2. Sindh
3. KPK
4. Balochistan
Enter your choice (1-4): 1
Total population of Punjab: 110,012,442

Process returned 0 (0x0)   execution time :
56.362 s
Press any key to continue.
```

2. 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() {
    char alphabet;

    cout << "Enter an alphabet: ";
    cin >> alphabet;

    switch(tolower(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;
    }

    return 0;
}
```

```
C:\Users\ahsen\OneD
Enter an alphabet: a
a is a vowel.

Process returned 0 (0x0)   execution time :
8.471 s
Press any key to continue.
```

3. 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() {
    int number;

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

    switch(number > 0 ? 1 : (number < 0 ? -1 : 0)) {
        case 1:
            cout << "The number is positive." << endl;
            break;
        case -1:
            cout << "The number is negative." << endl;
            break;
        case 0:
            cout << "The number is zero." << endl;
            break;
    }

    return 0;
}
```

```
Enter a number: 7
The number is positive.

Process returned 0 (0x0)   execution time :
2.929 s
Press any key to continue.
```

4. 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() {
    int age;

    cout << "Enter your age: ";
    cin >> age;

    if (age >= 18) {
        cout << "You are an adult." << endl;
    } else if (age >= 13 && age <= 17) {
        cout << "You are a teenager." << endl;
    } else {
        cout << "You are a child." << endl;
    }

    return 0;
}
```

```
C:\Users\ahsen\OneDrive\Des
Enter your age: 18
You are an adult.

Process returned 0 (0x0)   execution time : 2.955
s
Press any key to continue.
```

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.

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

int main() {
    int num1, num2, num3;

    cout << "Enter three numbers: ";
    cin >> num1 >> num2 >> num3;

    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;
        }
    }

    return 0;
}
```

```
C:\Users\ahsen\OneD
Enter three numbers: 10,7,3
10 is the greatest number.

Process returned 0 (0x0)   execution time :
6.551 s
Press any key to continue.
```

6. 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() {
    char alphabet;

    cout << "Enter an alphabet: ";
    cin >> alphabet;

    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;
    }

    return 0;
}
```

```
C:\Users\ahsen\OneD
Enter an alphabet: a
a is a vowel.

Process returned 0 (0x0)   execution time :
4.350 s
Press any key to continue.
```