School Of Mechanical & Manufacturing Engineering, NUST

Department of Mechanical Engineering

CS-114 - Fundamental of Programing

Lab Manual # 02

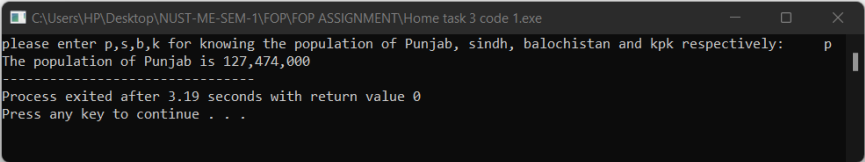**Course Instructor:** Dr Jawad Khan

Lab Instructor: Muhammad Affan
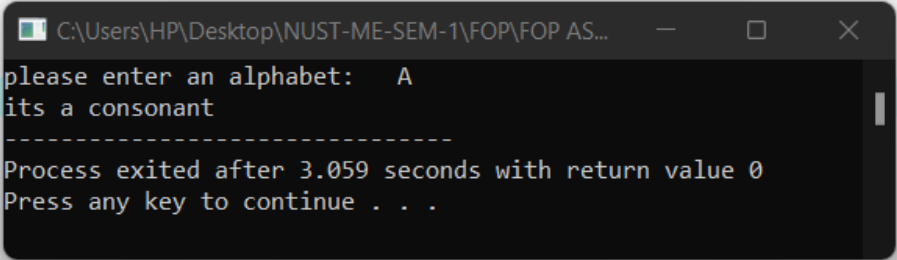
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Q1. Write a C++ program to print the total number of populations in Punjab, Sindh, KPK, and Balochistan using a switch case

```cpp
1   #include<iostream>
2   using namespace std;
3   int main()
4   {
5       char x;
6       cout<<"please enter p,s,b,k for knowing the population of Punjab, sindh, balochistan and kpk respectively:    ";
7       cin>>x;
8       switch(x){
9           case 'p': cout<<"The population of Punjab is 127,474,000 ";
10          break;
11          case 's': cout<<"the population of Sindh is 54,858,515";
12          break;
13          case 'b': cout<<"The populatiuon of Balochistan is 14,894,402";
14          break;
15          case 'k': cout<<"the population of KPK is 2,412,000";
16          break;
17      }
18      return 0;
19  }
```
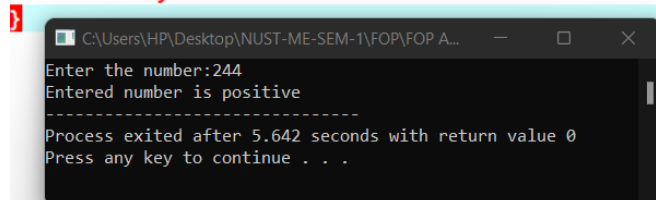
C:\Users\HP\Desktop\NUST-ME-SEM-1\FOP\FOP ASSIGNMENT\Home task 3 code 1.exe

```
please enter p,s,b,k for knowing the population of Punjab, sindh, balochistan and kpk respectively:    p
The population of Punjab is 127,474,000
------------------------------
Process exited after 3.19 seconds with return value 0
Press any key to continue . . .
```

Q2. 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 x;
    cout<<"please enter an alphabet:    ";
    cin>>x;
    switch(x){
    case 'a': cout<<"its a vowel";
    break;
    case 'e': cout<<"its a vowel";
    break;
    case 'i': cout<<"its a vowel";
    break;
    case 'o': cout<<"its a vowel";
    break;
    case 'u': cout<<"its a vowel";
    break;
    default: cout<<"its a consonant";

    }
    return 0;
}
```

C:\Users\HP\Desktop\NUST-ME-SEM-1\FOP\FOP AS...

```
please enter an alphabet:    A
its a consonant
------------------------------
Process exited after 3.059 seconds with return value 0
Press any key to continue . . .
```

Q3. 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 the number:";
    cin >> number;
    switch(number>0) {
        case 1 :
            cout << "Entered number is positive";
            break;
        case 0 :
            if(number!=0)
            cout << "Entered number is negative";
            else
            cout << "Entered number is zero";
            break;
        default:
            cout << "Some error occured";
    }
    return 0;
}
```
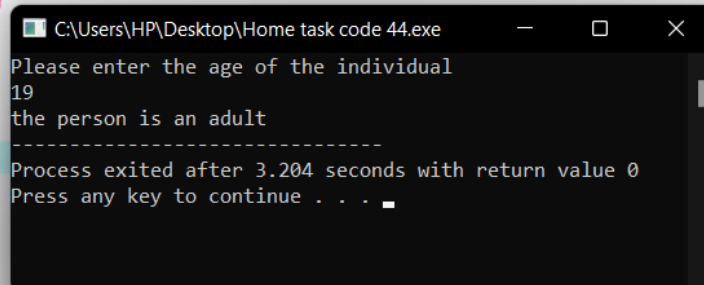
```
C:\Users\HP\Desktop\NUST-ME-SEM-1\FOP\FOP A...    —    □    ✕

Enter the number:244
Entered number is positive
--------------------------------
Process exited after 5.642 seconds with return value 0
Press any key to continue . . .
```

Q4. 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 x;
    cout<<"Please enter the age of the individual\n";
    cin>>x;

    if(x>=0 && x<=120){
        if(x>=19){cout<<"the person is an adult";}
        else{
            if(x>=13){cout<<"the person is a teenager";}
            else{cout<<"the person ia child";
            }
        }
    }
    else{cout<<"the age is invalid";}
    return 0;
}
```

```
C:\Users\HP\Desktop\Home task code 44.exe    —    □    ✕

Please enter the age of the individual
19
the person is an adult
--------------------------------
Process exited after 3.204 seconds with return value 0
Press any key to continue . . . ▪
```

Q5. 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<<"please enter the three numbers";
    cin>> num1>>num2>>num3;
    if(num1>=num2){
        if(num1>=num3){cout<<"the num1 is the largest";
        }
        else{cout<<"the num3 is largest";
        }
    }
        else{
            if(num2>=num3){cout<<"the num2 is largest";
            }
            else{cout<<"the num3 is largest";
            }
        }
        return 0;
}
```

```
■ C:\Users\HP\Desktop\code 5.exe                          —     □     ✕
please enter the three numbers3
6
5
the num2 is largest
--------------------------------
Process exited after 5.64 seconds with return value 0
Press any key to continue . . .
```

Q6. 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<<"please enter an alphabet: ";
    cin>> alphabet;
    if(alphabet>='a'&& alphabet<='z'){
        if( alphabet=='a' || alphabet=='e' || alphabet=='i' || alphabet=='o'|| alphabet=='u' ){cout<<"yes its a vowel";
        }
        else{cout<<"its a consonant";
        }
    }
        else if(alphabet>='A'&& alphabet<='Z'){
        if(alphabet=='A' || alphabet=='E' || alphabet=='I' || alphabet=='O'|| alphabet=='O' ){cout<<"yes its a vowel";}
        else{
        cout<<"its a consonant";}
    }

    else{cout<<"its an invalid input";
    }
    return 0;
}
```

```
■ C:\Users\HP\Desktop\Home task code 44.exe     —    □    ✕
please enter an alphabet: A
yes its a vowel
--------------------------------
Process exited after 4.864 seconds with return value 0
Press any key to continue . . .
```