

School Of Mechanical & Manufacturing Engineering (NUST)
Department of Mechanical Engineering



Lab Report #03:

Prepared by

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Home Task:-

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

Input:-

```
#include <iostream>
using namespace std;
int main () {
    char pro;
    cout << "Enter the first letter of the Province in lower case:";
    cin >> pro;
    switch (pro) {
        case 'p':
            cout << "The Population of Punjab is 14 crore:" << endl;
            break;
        case 'k':
            cout << "The Population of KPK is 4 crore:" << endl;
            break;
        case 's':
            cout << "The Population of Sindh is 4.8 crore:" << endl;
            break;
        case 'g':
            cout << "The Population of Gilgit Baltistan is 0.2 crore:" << endl;
            break;
        case 'b':
            cout << "The Population of balochidtan is 2.1 crore:";
            break;
        case 'P':
        case 'K':
        case 'S':
        case 'G':
        case 'B':
            cout << "Please Write in lower case";
            break;
        default:
            cout << "--Error:: Invalid Province :: Error--";
    }
    return 0;
}
```

Output:



```
Enter the first letter of the Province in lower case:p
```

```
The Population of Punjab is 14 crore:
```

```
...Program finished with exit code 0
```

```
Press ENTER to exit console.
```



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

Input:

```
#include <iostream>
using namespace std;
int main () {
    char alph;
    cout <<"Enter alphabet in lowercase (Small):";
    cin >> alph;
    switch (alph) {
        case 'a':
        case 'e':
        case 'i':
        case 'o':
        case 'u':
            cout <<"This alphabet is vowel";
            break;
        case 'b':
        case 'c':
        case 'd':
        case 'f':
        case 'g':
        case 'h':
        case 'j':
        case 'k':
        case 'l':
        case 'm':
        case 'n':
        case 'p':
        case 'q':
        case 'r':
        case 's':
        case 't':
        case 'v':
        case 'w':
        case 'x':
        case 'y':
        case 'z':
            cout <<"The Alphabets is consonat:";
```



```
break;  
default:  
cout <<"---Error---Not Alphabet type or Capital alphanber is type:";  
}  
return 0;  
}
```

Output:

A screenshot of a terminal window with a black background and white and green text. The text shows the program's execution flow: a prompt for a lowercase letter, a message indicating the input is a consonant, a completion message, and a final prompt to press ENTER.

```
Enter alphabet in lowercase (Small):n  
The Alphabets is consonat:  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```



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

Input:

```
#include <iostream>
using namespace std;
int main () {
    int a;
    cout << "Enter a number between [-10 to 10]---:";
    cin >>a;
    switch (a) {
        case 1:
        case 2:
        case 3:
        case 4:
        case 5:
        case 6:
        case 7:
        case 8:
        case 9:
        case 10:
            cout << "Given Number is Positive";
            break;
        case -1:
        case -2:
        case -3:
        case -4:
        case -5:
        case -6:
        case -7:
        case -8:
        case -9:
        case -10:
            cout << "Given Number is Negative";
            break;
        case 0:
            cout << "Given Number is neither Positive nor Negative";
            break;
        default:
            cout << "The Given Entry is not a number or out of range:";
```



```
}  
    return 0;  
}
```

Output:

A screenshot of a console window titled 'input'. The window has a dark background with light-colored text. The text shows the program's execution: it prompts the user to enter a number between -10 and 10, receives the input '99', and outputs a message stating that the entry is not a number or out of range. The program then finishes with exit code 0 and prompts the user to press ENTER to exit the console.

```
Enter a number between [-10 to 10]---:99  
The Given Entry is not a number or out of range:  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

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

Input:

```
#include <iostream>  
using namespace std;  
int main () {  
    int age;  
    cout <<"Enter your age:";
```

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```
cin >> age;
if (age>=20) {
    cout <<"You are an adult:";

}
else if (age<=13){
    cout <<"You are a teenager:";
}
else
    cout << "You are child:";
return 0;
}
```

Enter Alphabet: (Use Small Alphabets)u

The alphabet is vowel:

...Program finished with exit code 0

Press ENTER to exit console.



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.

Input:

```
#include <iostream>
using namespace std;
int main () {
    int a, b, c;
    cout << "Enter Integers" << endl;
    cin >> a >> b >> c ;
    if (a>b && a>c) {
        cout << "The Greatest integer is :" << a;
    }
    else if (b>a && b>c) {
        cout << "The Greatest integer is:" << b;
    }
    else
        cout << "The Greatest integer is:" << c;
    return 0;
}
```

Output:

```
Enter Integers
4
8
2
The Greatest integer is:8
...Program finished with exit code 0
Press ENTER to exit console.
```



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

Include:

```
#include <iostream>

using namespace std;

int main () {

    char zxc;

    cout << "Enter Alphabet: (Use Small Alphabets";

    cin >> zxc;

    if (zxc=='a' || zxc=='e' || zxc=='i' || zxc=='o' || zxc=='u')

    {

        cout << "The alphabet is vowel:";

    }

    else if

(zxc=='b' || zxc=='c' || zxc=='d' || zxc=='f' || zxc=='g' || zxc=='h' || zxc=='j' || zxc=='k' || zxc=='l' || zxc=='m' || zxc=='n' || zxc=='p' || zxc=='q' || zxc=='r' || zxc=='s' || zxc=='t' || zxc=='v' || zxc=='w' || zxc=='x' || zxc=='y' || zxc=='z')

    {

        cout << "The alphabet is consonant";

    }

    else

    cout << "The given entry is not an alphabet";

    return 0;
```



}

Output:

```
Enter Alphabet: (Use Small Alphabets)u
The alphabet is vowel:

...Program finished with exit code 0
Press ENTER to exit console.
```