

CSS-114- FUNDAMENTALS OF PROGRAMMING

LAB MANUAL #3

LAB AND HOME TASK

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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.

```
#include<iostream>
using namespace std;
int main(){
    cout<<"HOME TASK 1, POPULATION OF A PROVINCE."<<endl;
    char Province;
    //Input a Province whose population the user wishes to find
    cout<<"Select the Province whose population you wish to know.\n Punjab=P , Sindh=S, KPK=K, Balochistan=B."<<endl;
    cin>>Province;
    //denoting each province by its capital letter, using a switch-case and values found online, depending on the alphabet entered by the user,
    //a certain population will be displayed
    switch (Province){
        case 'P':
            cout<<"The Population of Punjab is 127.5 Million."<<endl;
            break;
        case 'S':
            cout<<"The Population of Sindh is 57.93 Million."<<endl;
            break;
        case 'K':
            cout<<"The Population of KPK is 39.60 Million."<<endl;
            break;
        case 'B':
            cout<<"The Population of Balochistan 14.89 Million."<<endl;
            break;
    }
    return 0;
}
```

CODE RESULT:

```
HOME TASK 1, POPULATION OF A PROVINCE.
Select the Province whose population you wish to know.
Punjab=P , Sindh=S, KPK=K, Balochistan=B.
P
The Population of Punjab is 127.5 Million.

-----
Process exited after 11.17 seconds with return value 0
Press any key to continue . . .
```

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(){
    cout<<"HOME TASK 2, CHECK IF CHARACTER IS CONSONANT OR VOWEL."<<endl;
    char alphabet;
    //Input an alphabet in lowercase from the user
    cout<<"Enter a Character from the Alphabet(in lowercase)."<<endl;
    cin>>alphabet;
    //using this switch-case, depending on the character entered, the output will display if the character is a Vowel (a,e,i,o,u) or a consonant
    switch (alphabet){
        case 'a':
            cout<<"The Character is a vowel."<<endl;
            break;
        case 'e':
            cout<<"The Character is a vowel."<<endl;
            break;
        case 'i':
            cout<<"The Character is a vowel."<<endl;
            break;
        case 'o':
            cout<<"The Character is a vowel."<<endl;
            break;
        case 'u':
            cout<<"The Character is a vowel."<<endl;
            break;
        case 'b':
            cout<<"The Character is a consonant."<<endl;
            break;
        case 'c':
            cout<<"The Character is a consonant."<<endl;
            break;
        case 'd':
            cout<<"The Character is a consonant."<<endl;
            break;
        case 'f':
            cout<<"The Character is a consonant."<<endl;
            break;
        case 'g':
            cout<<"The Character is a consonant."<<endl;
            break;
        case 'h':
            cout<<"The Character is a consonant."<<endl;
            break;
        case 'j':
            cout<<"The Character is a consonant."<<endl;
            break;
        case 'k':
            cout<<"The Character is a consonant."<<endl;
            break;
        case 'l':
            cout<<"The Character is a consonant."<<endl;
            break;
        case 'm':
            cout<<"The Character is a consonant."<<endl;
            break;
        case 'n':
            cout<<"The Character is a consonant."<<endl;
            break;
        case 'p':
            cout<<"The Character is a consonant."<<endl;
            break;
        case 'q':
            cout<<"The Character is a consonant."<<endl;
            break;
        case 'r':
            cout<<"The Character is a consonant."<<endl;
            break;
        case 's':
            cout<<"The Character is a consonant."<<endl;
            break;
        case 't':
            cout<<"The Character is a consonant."<<endl;
            break;
        case 'v':
            cout<<"The Character is a consonant."<<endl;
            break;
    }
```

```
break;
case 'w':
cout<<"The Character is a consonant."<<endl;
break;
case 'x':
cout<<"The Character is a consonant."<<endl;
break;
case 'y':
cout<<"The Character is a consonant."<<endl;
break;
case 'z':
cout<<"The Character is a consonant."<<endl;
break;
}
return 0;
}
```

CODE RESULT:

HOME TASK 2, CHECK IF CHARACTER IS CONSONANT OR VOWEL.
Enter a Character from the Alphabet(in lowercase).

a

The Character is a vowel.

Process exited after 17.39 seconds with return value 0
Press any key to continue . . .

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

```

#include<iostream>
using namespace std;
int main(){
    cout<<"HOME TASK 3,CHECKING IF A NUMBER IS POSITIVE, NEGATIVE OR ZERO."<<endl;
    int num;
    //Input a number from the user
    cout<<"Enter your number"<<endl;
    cin>>num;
    //Using an if condition, three cases were stated, if a number is greater than, less than, or equal to zero
    if(num>0){
        num = 1;
    }
    if(num==0){
        num = 2;
    }
    if(num<0){
        num = 3;
    }
    //using this switch-case, for each case, the output will display if a number is positive, negative or zero
    switch(num){
        case 1:
            cout<<"The number is positive."<<endl;
            break;
        case 2:
            cout<<"The number is zero."<<endl;
            break;
        case 3:
            cout<<"The number is negative."<<endl;
            break;
    }
    return 0;
}

```

CODE RESULT:

```

HOME TASK 3,CHECKING IF A NUMBER IS POSITIVE, NEGATIVE OR ZERO.
Enter your number
-45
The number is negative.

-----
Process exited after 17.9 seconds with return value 0
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.

```

#include<iostream>
using namespace std;
int main(){
    cout<<"HOME TASK 4, CHECK IF SOMEONE IS AN ADULT, TEENAGER OR CHILD."<<endl;
    int Age;
    //Input an age from the user
    cout<<"Please enter your age."<<endl;
    cin>>Age;
    //Using nested if-else, if Age is greater than or equal to 18, output will display the individual as an adult, if it is greater than
    //or equal to 13, output will display the individual as a teenager, otherwise the output will output will display the individual as a child
    if (Age >= 18){
        cout<<"You are a Legal Adult."<<endl; }
    else {
        if (Age >= 13){
            cout<<"You are a Legal Teenager."<<endl;
        }
        else {
            cout<<"You are Legally a Child."<<endl;
        }
    }
}
return 0;
}

```

CODE RESULT:

```

HOME TASK 4, CHECK IF SOMEONE IS AN ADULT, TEENAGER OR CHILD.
Please enter your age.
17
You are a Legal Teenager.

-----
Process exited after 11.13 seconds with return value 0
Press any key to continue . . . █

```

- 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.
-

```

#include<iostream>
using namespace std;
int main(){
    cout<<"HOME TASK 3, FINIDNG THE GREATEST OF THREE NUMBERS."<<endl;

    int x, y, z;
    //Input three integers from the user in no specific order
    cout<<"Enter your three numbers:"<<endl;
    cin>>x>>y>>z;
    // if any two or more numbers are equal, program will end and must be restarted
    if (x==y || x==z || y==z){
        cout<<"Please re-enter your values, all values must be different."<<endl;
    }
    //using nested if-else, depending on which number is bigger than the other two, the output will display it as the greatest value
    else {
        if (x>y && x>z){
            cout<<"The Greatest of the three numbers is:"<<x<<endl;
        }
        if (y>x && y>z){
            cout<<"The Greatest of the three numbers is:"<<y<<endl;
        }
        if (z>x && z>y){
            cout<<"The Greatest of the three numbers is:"<<z<<endl; }
        }
    return 0; }

```

CODE RESULT:

```

HOME TASK 3, FINIDNG THE GREATEST OF THREE NUMBERS.
Enter your three numbers:
45
56
76
The Greatest of the three numbers is:76

-----
Process exited after 12.29 seconds with return value 0
Press any key to continue . . .

```

- 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(){

    cout<<"HOME TASK 6, CHECKING WHETHER AN ALPHABET IS A VOWEL OR A CONSONANT."<<endl;

    char Char;
    // Input an Alphabet from the user
    cout<<"Enter your Alphabet."<<endl;
    cin>>Char;
    //Check if the Alphabet is a vowel or not (a,e,i,o,u)
    if (Char=='a' || Char=='e' || Char=='i' || Char=='o' || Char=='u'){
        cout<<"The Alphabet is a Vowel."<<endl;
    }
    else{
        cout<<"The Alphabet is a Consonant."<<endl;
    }
    return 0;
}

```

CODE RESULT:

```

HOME TASK 6, CHECKING WHETHER AN ALPHABET IS A VOWEL OR A CONSONANT.
Enter your Alphabet.
o
The Alphabet is a Vowel.

-----
Process exited after 10.21 seconds with return value 0
Press any key to continue . . . █

```


