NATIONAL UNIVERSITY OF SCIENCE & TECNOLOGY

SCHOOL OF MECHANICAL AND MANUFACTURING ENGINEERING

[FUNDAMENTALS OF PROGRAMMING(LAB)]

HOME TASK # 3

SEMESTER # 01

CLASS: - ME-15 [SEC A]

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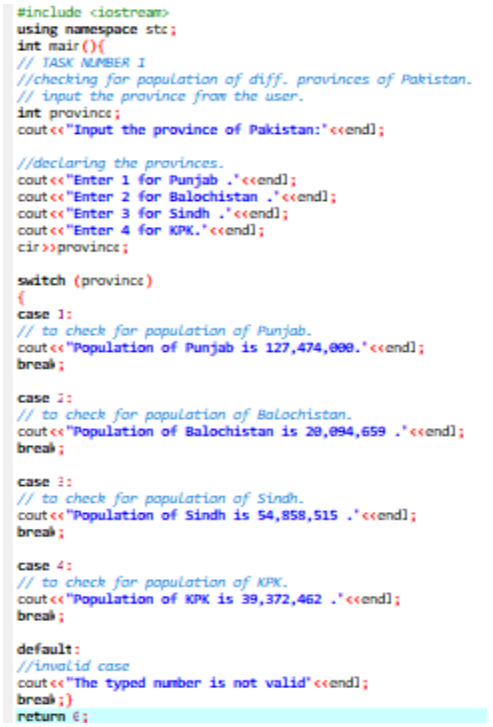
TASK NUMBER 1

```
#include <iostream>
using namespace std;
int main(){

//checking for population of diff. provinces of Pakistan.
// input the province from the user.
int province;
cout<<"Input the province of Pakistan:"<<endl;

//declaring the provinces.
cout<<"Enter 1 for Punjab ."<<endl;
cout<<"Enter 2 for Balochistan ."<<endl;
cout<<"Enter 3 for Sindh ."<<endl;
cout<<"Enter 4 for KPK."<<endl;
cin>>province;

switch (province)
{
case 1:
// to check for population of Punjab.
cout<<"Population of Punjab is 127,474,000."<<endl;
break;

case 2:
// to check for population of Balochistan.
cout<<"Population of Balochistan is 20,094,659 ."<<endl;
break;

case 3:
// to check for population of Sindh.
cout<<"Population of Sindh is 54,858,515 ."<<endl;
break;

case 4:
// to check for population of KPK.
cout<<"Population of KPK is 39,372,462 ."<<endl;
break;

default:
//invalid case
cout<<"The typed number is not valid"<<endl;
break; }

return 0;
}
```




```
Input the province of Pakistan:
Enter 1 for Punjab .
Enter 2 for Balochistan .
Enter 3 for Sindh .
Enter 4 for KPK.
1
Population of Punjab is 127,474,000.
```

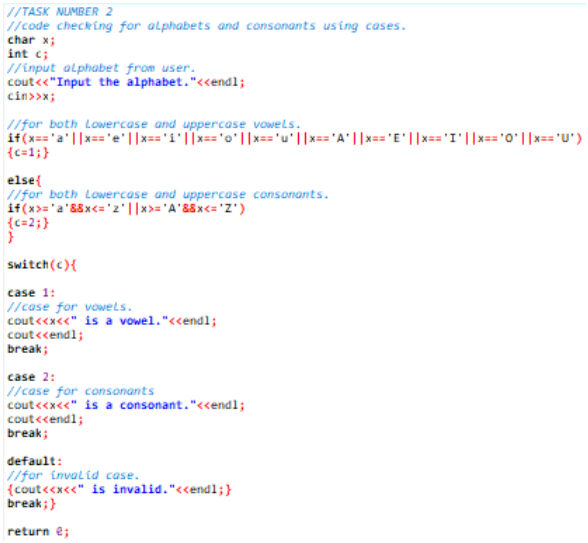
```
Input the province of Pakistan:
Enter 1 for Punjab .
Enter 2 for Balochistan .
Enter 3 for Sindh .
Enter 4 for KPK.
2
Population of Balochistan is 20,094,659
```

```
Input the province of Pakistan:
Enter 1 for Punjab .
Enter 2 for Balochistan .
Enter 3 for Sindh .
Enter 4 for KPK.
3
Population of Sindh is 54,858,515
```

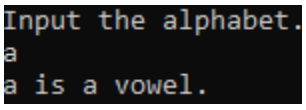
```
Input the province of Pakistan:
Enter 1 for Punjab .
Enter 2 for Balochistan .
Enter 3 for Sindh .
Enter 4 for KPK.
4
Population of KPK is 39,372,462
```

TASK NUMBER 2

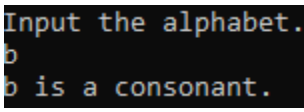
```
#include <iostream>
using namespace std;
int main(){

//code checking for alphabets and consonants using cases.
char x;
int c;
//input alphabet from user.
cout<<"Input the alphabet."<<endl;
cin>>x;

//for both lowercase and uppercase vowels.
if(x=='a'||x=='e'||x=='i'||x=='o'||x=='u'||x=='A'||x=='E'||x=='I'||x=='O'||x=='U')
{c=1;}

else{
//for both lowercase and uppercase consonants.
if(x>='a'&&x<='z'||x>='A'&&x<='Z')
{c=2;}
}

switch(c){

//case for vowels.
cout<<x<<" is a vowel."<<endl;
cout<<endl;
break;

case 2:
//case for consonants
cout<<x<<" is a consonant."<<endl;
cout<<endl;
break;

default:
//for invalid case.
{cout<<x<<" is invalid."<<endl;}
break;}

return 0;
}
```



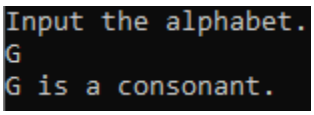
```
//TASK NUMBER 2
//code checking for alphabets and consonants using cases.
char x;
int c;
//input alphabet from user.
cout<<"Input the alphabet."<<endl;
cin>>x;

//for both lowercase and uppercase vowels.
if(x=='a'||x=='e'||x=='i'||x=='o'||x=='u'||x=='A'||x=='E'||x=='I'||x=='O'||x=='U')
{c=1;}

else{
//for both lowercase and uppercase consonants.
if(x>='a'&&x<='z'||x>='A'&&x<='Z')
{c=2;}
}

switch(c){

case 1:
//case for vowels.
cout<<x<<" is a vowel."<<endl;
cout<<endl;
break;

case 2:
//case for consonants
cout<<x<<" is a consonant."<<endl;
cout<<endl;
break;

default:
//for invalid case.
{cout<<x<<" is invalid."<<endl;}
break;}

return 0;
```



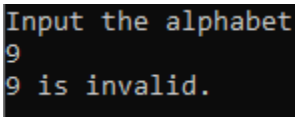
```
Input the alphabet.
a
a is a vowel.
```



```
Input the alphabet.
b
b is a consonant.
```



```
Input the alphabet.
G
G is a consonant.
```



```
Input the alphabet
9
9 is invalid.
```

TASK NUMBER 3

```
#include <iostream>
using namespace std;
int main(){

//checking for a no. is positive, negative or zero.
float number;
int c;
//input number from user.
cout<<"Input the number ."<<endl;
cin>>number;

//for positive number.
if(number>0)
{c=1;}

//condition for negative number.
else{
if(number<0)
{c=2;}
}

switch(c){
case 1:
cout<<number<<" is positive.";
break;

case 2:
cout<<number<<" is negative ."<<endl;
break;

//condition for zero
default:
cout<<number<<" is zero ."<<endl;
break;
}
return 0;
}
```

```
//TASK NUMBER 3
//checking for a no. is positive, negative or zero.
float number;
int c;
//input number from user.
cout<<"Input the number ."<<endl;
cin>>number;

//for positive number.
if(number>0)
{c=1;}

//condition for negative number.
else{
if(number<0)
{c=2;}
}

switch(c){
case 1:
cout<<number<<" is positivie.";
break;

case 2:
cout<<number<<" is negative ."<<endl;
break;

//condition for zero
default:
cout<<number<<" is zero ."<<endl;
break;
}
return 0;
```

```
Input the number .
8
8 is positive.
```

```
Input the number .
-67
-67 is negative .
```

```
Input the number .
0
0 is zero .
```

TASK NUMBER 4

```
#include <iostream>
using namespace std;
int main(){

//program for distinguishing child,adult and teenagers
//input age from user.
int age;
cout<<"Enter the age of person."<<endl;
cin>>age;


//case for children
if(age>=1&&age<=12)
{cout<<"The person is a child."<<endl;}

//for teenager.
else{

if(age>=13&&age<=17){

{cout<<"The person is a teenager."<<endl;}
}
//if the person is adult such as above 17 yrs.
else{
cout<<"The person is an adult."<<endl;}

}

return 0;
}
```

```
//TASK NUMBER 4
//program for distinguishing child,adult and teenagers
//input age from user.
int age;
cout<<"Enter the age of person."<<endl;
cin>>age;


//case for children
if(age>=1&&age<=12)
{cout<<"The person is a child."<<endl;}

//for teenager.
else{

if(age>=13&&age<=17){

{cout<<"The person is a teenager."<<endl;}
}
//if the person is adult such as above 17 yrs.
else{
cout<<"The person is an adult."<<endl;}

}

return 0;
```

```
Enter the age of person.
8
The person is a child.
```

```
Enter the age of person.
17
The person is a teenager.
```

```
Enter the age of person.
34
The person is an adult.
```

Task number 5

```
#include <iostream>
using namespace std;
int main(){

//code for finding greatest number entered by user
float x,y,z;

//input three numbers from user
cout<<"Input the value of x."<<endl;
cout<<"Input the value of y."<<endl;
cout<<"Input the value of z."<<endl;
cin>>x>>y>>z;
cout<<endl;

//when x is greatest
if(x>y&&x>z)
{cout<<"x is greater ."<<endl;}

//when greatest number is y
else{
if(y>x&&y>z)
{cout<<"y is greater ."<<endl;}

//for z to be a greatest number
else{
cout<<"z is greater ."<<endl;}
}

return 0;
}
```

```
//TASK NUMBER 5
//code for finding greatest number entered by user
float x,y,z;

//input three numbers from user
cout<<"Input the value of x."<<endl;
cout<<"Input the value of y."<<endl;
cout<<"Input the value of z."<<endl;
cin>>x>>y>>z;
cout<<endl;

//when x is greatest
if(x>y&&x>z)
{cout<<"x is greater ."<<endl;}

//when greatest number is y
else{
if(y>x&&y>z)
{cout<<"y is greater ."<<endl;}

//for z to be a greatest number
else{
cout<<"z is greater ."<<endl;}
}

return 0;
```

```
Input the value of x.
Input the value of y.
Input the value of z.
45
13
7

x is greater .
```

```
Input the value of x.
Input the value of y.
Input the value of z.
13
54
34

y is greater .
```

```
Input the value of x.
Input the value of y.
Input the value of z.
3
15
67

z is greater .
```

TASK NUMBER 6

```
#include <iostream>
using namespace std;
int main(){

//input alphabet from user.
char x;
cout<<"input ."<<endl;
cin>>x;
cout<<endl;

//code for vowels using nested if-else.
if(x=='a'||x=='e'||x=='i'||x=='o'||x=='u'||x=='A'||x=='E'||x=='I'||x=='O'||x=='U')
{cout<<x<<" is a vowel."<<endl;}

//for alphabets which are consonants using
nested if-else.
else
{cout<<x<<" is a consonant."<<endl;}
return 0;
}
```

```
//TASK NUMBER 6
//input alphabet from user.
char x;
cout<<"input alphabet."<<endl;
cin>>x;
cout<<endl;

//code for vowels using nested if-else.
if(x=='a'||x=='e'||x=='i'||x=='o'||x=='u'||x=='A'||x=='E'||x=='I'||x=='O'||x=='U')
{cout<<x<<" is a vowel."<<endl;}

//for alphabets which are consonants using nested if-else.
else
{cout<<x<<" is a consonant."<<endl;}
return 0;
}
```

```
input alphabet.
E

E is a vowel.
```

```
input alphabet.
c

c is a consonant.
```