**Assignment No.5(Template class)**

#include <iostream>

using namespace std;

template<class T>

class vector{

T a[20];

int num;

public:

void accept(){

cout<<endl<<"Enter number of elements do you want to enter";

cin>>num;

cout<<endl<<"Enter elements:";

for(int i=0;i<num;i++){

cin>>a[i];}

}

void display(){

cout<<endl<<"Vector elements:";

cout<<"{";

for(int i=0;i<num;i++){

if(i!=num-1){

cout<<a[i]<<",";}

else{

cout<<a[i];}}

cout<<"}";

}

void multiply(){

T scalar;

cout<<endl<<"Enter scalar value that you want to use for multiplication:";

cin>>scalar;

for(int i=0;i<num;i++){

a[i]=a[i]\*scalar;}

cout<<endl<<"vector values after multiplication:";

cout<<"{";

for(int i=0;i<num;i++){

if(i!=num-1){

cout<<a[i]<<",";}

else{

cout<<a[i]; }

}

cout<<"}";

}

void modify(){

T up;

int i=0;

cout<<endl<<"Enter number do want to update:";

cin>>up;

for(i=0;i<num;i++){

if(a[i]==up){

break;}

}

cout<<endl<<"Enter new value:";

cin>>up;

a[i]=up;

cout<<"{";

for(int i=0;i<num;i++){

if (i!=num-1){

cout<<a[i]<<",";}

else{

cout<<a[i]; }

cout<<"}";

}

};

int main() {

int ch;

do{

cout<<endl<<"1.Vector with int...\n2.Vector with float..\n3.Exit..";

cout<<endl<<"Enter your choice:";

cin>>ch;

switch(ch){

case 1:

vector<int> c1;

c1.accept();

c1.display();

c1.multiply();

c1.modify();

break;

case 2:

vector<float> c2;

c2.accept();

c2.display();

c2.multiply();

c2.modify();

break;

case 3:

break;

default:

cout<<endl<<"Wrong choice entered!!";

}

}while(ch!=3);

return 0;

}

**Output:**

1.Vector with int...

2.Vector with float..

3.Exit..

Enter your choice:1

Enter number of elements do you want to enter5

Enter elements:12 34 56 78 90

Vector elements:{12,34,56,78,90}

Enter scalar value that you want to use for multiplication:2

vector values after multiplication:{24,68,112,156,180}

Enter number do want to update:68

Enter new value:86

{24,86,112,156,180}

1.Vector with int...

2.Vector with float..

3.Exit..

Enter your choice:2

Enter number of elements do you want to enter4

Enter elements:45.5 67.7 89.9 90.9

Vector elements:{45.5,67.7,89.9,90.9}

Enter scalar value that you want to use for multiplication:2

vector values after multiplication:{91,135.4,179.8,181.8}

Enter number do want to update:91

Enter new value:45.5