#include<iostream>

using namespace std;

#define size 5

class stack

{

int array[size],top;

public:

int init();

void push();

void pop();

void display();

void peek();

};

int main()

{

stack s;

s.init();

int choice;

while(1)

{

cout<<"\*\*\*MENU\*\*\*"<<"\n";

cout<<"=========="<<"\n";

cout<<"1.push"<<"\n"<<"2.pop"<<"\n"<<"3.display"<<"\n"<<"4.peek"<<"\n"<<"5.exit"<<"\n";

cout<<"enter the operation to perform"<<"\n";

cin>>choice;

switch(choice)

{

case 1:s.push();

break;

case 2:s.pop();

break;

case 3:s.display();

break;

case 4:s.peek();

break;

case 5:exit(0);

default:cout<<"invalid entry"<<"\n";

}

}

}

int stack::init()

{

top=0;

array[size]=0;

return 0;

}

void stack::push()

{

int x;

if(top==size)

{

cout<<"stack is full"<<"\n";

}

cout<<"enter the number to insert into the stack"<<"\n";

cin>>x;

top++;

array[top]=x;

}

void stack::pop()

{

if(top==0)

{

cout<<"underflow"<<"\n";

}

top--;

}

void stack::display()

{

int i;

if(top==0)

{

cout<<"stack is empty\n"<<"\n";

}

cout<<"elements present in the stack are"<<"\n";

for(i=top;i>0;i--)

{

cout<<array[i]<<"\n";

}

}

void stack::peek()

{

if(top==0)

{

cout<<"peek is not there"<<"\n";

}

else

{

cout<<array[top]<<"\n";

}

}