**Assignment 1**

Q) WAP to do stack implementation using arrays.

Ans)

Code:

#include <stdio.h>

int top=-1;

void peek(int stack[100]);

void push(int stack[100],int size,int val);

int pop(int stack[100]);

int main()

{

int size,val,del,choice;

int stack[100];

printf("\nenter the maximum size of the stack");

scanf("%d",&size);

char ch='y';

do

{

//printf("%c",&ch);

printf("\n Main Menu");

printf("\n Choose the option");

printf("\n 1.Push");

printf("\n 2.Pop");

printf("\n 3.Display");

scanf("%d",&choice);

switch(choice)

{

case 1: printf("\n enter the value to be inserted");

scanf("%d",&val);

push(stack,size,val);

peek(stack);

break;

case 2: del=pop(stack);

printf("\n %d is deleted from the stack",del);

peek(stack);

break;

case 3: printf("\n the elements in the stack are");

peek(stack);

break;

default: printf("\n invalid entry");

}

printf("do you want to continue");

scanf("%s",&ch);

//printf("%c",ch);

}while(ch=='y' || ch=='Y');

return 0;

}

void peek(int stack[])

{

int i;

printf("\n");

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

{

printf("%d ",stack[i]);

}

}

void push(int stack[],int size,int val)

{

if(top==size-1)

{

printf("\nthe stack is overflowing");

}

else

{

top++;

stack[top]=val;

}

}

int pop(int stack[])

{

int temp;

if(top==-1)

{

printf("\nthe stack is underflowing");

temp=-99999999;

}

else

{

temp=stack[top];

top--;

}

return temp;

}

Output:

enter the maximum size of the stack5

 Main Menu

 Choose the option

 1.Push

 2.Pop

 3.Display1

 enter the value to be inserted4

4  do you want to continuey

 Main Menu

 Choose the option

 1.Push

 2.Pop

 3.Display1

 enter the value to be inserted3

3  4  do you want to continuey

 Main Menu

 Choose the option

 1.Push

 2.Pop

 3.Display2

 3 is deleted from the stack

4  do you want to continuey

 Main Menu

 Choose the option

 1.Push

 2.Pop

 3.Display1

 enter the value to be inserted2

2  4  do you want to continuey

 Main Menu

 Choose the option

 1.Push

 2.Pop

 3.Display3

 the elements in the stack are

2  4  do you want to continuen

**...Program finished with exit code 0**

**Press ENTER to exit console.**