#include <stdio.h>

#include <stdlib.h>

#include <conio.h>

#define MAX 3

int st[MAX], top=-1;

void push(int st[], int val);

int pop(int st[]);

int peek(int st[]);

void display(int st[]);

int main(int argc, char \*argv[]) {

int val, option;

do

{

printf("\n \*\*\*\*MAIN MENU\*\*\*\*");

printf("\n 1. PUSH");

printf("\n 2. POP");

printf("\n 3. PEEK");

printf("\n 4. DISPLAY");

printf("\n 5. EXIT");

printf("\n Enter your option: ");

scanf("%d", &option);

switch(option)

{

case 1:

printf("\n Enter the number to be pushed on stack: ");

scanf("%d", &val);

push(st, val);

break;

case 2:

val = pop(st);

if(val != -1)

printf("\n The value deleted from stack is: %d", val);

break;

case 3:

val = peek(st);

if(val != -1)

printf("\n The value stored at top of stack is: %d", val);

break;

case 4:

display(st);

break;

} // end of switch

}while(option != 5);

return 0;

} // end of main ()

void push(int st[], int val)

{

if(top == MAX-1)

{

printf("\n STACK OVERFLOW");

}

else

{

top++;

st[top] = val;

}

}

int pop(int st[])

{

int val;

if(top == -1)

{

printf("\n STACK UNDERFLOW");

return -1;

}

else

{

val = st[top];

top--;

return val;

}

}

void display(int st[])

{

int i;

if(top == -1)

{printf("\n STACK IS EMPTY");}

else

{

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

printf("\n %d",st[i]);

printf("\n");

}

}

int peek(int st[])

{

if(top == -1)

{

printf("\n STACK IS EMPTY");

return -1;

}

else

return (st[top]);

}

OUTPUT:

\*\*\*\*MAIN MENU\*\*\*\*

1. PUSH

2. POP

3. PEEK

4. DISPLAY

5. EXIT

Enter your option: 1

Enter the number to be pushed on stack: 12

\*\*\*\*MAIN MENU\*\*\*\*

1. PUSH

2. POP

3. PEEK

4. DISPLAY

5. EXIT

Enter your option: 1

Enter the number to be pushed on stack: 13

\*\*\*\*MAIN MENU\*\*\*\*

1. PUSH

2. POP

3. PEEK

4. DISPLAY

5. EXIT

Enter your option: 1

Enter the number to be pushed on stack: 45

\*\*\*\*MAIN MENU\*\*\*\*

1. PUSH

2. POP

3. PEEK

4. DISPLAY

5. EXIT

Enter your option: 1

Enter the number to be pushed on stack: 56

STACK OVERFLOW

\*\*\*\*MAIN MENU\*\*\*\*

1. PUSH

2. POP

3. PEEK

4. DISPLAY

5. EXIT

Enter your option: 2

The value deleted from stack is: 45

\*\*\*\*MAIN MENU\*\*\*\*

1. PUSH

2. POP

3. PEEK

4. DISPLAY

5. EXIT

Enter your option: 45

\*\*\*\*MAIN MENU\*\*\*\*

1. PUSH

2. POP

3. PEEK

4. DISPLAY

5. EXIT

Enter your option: 4

13

12

\*\*\*\*MAIN MENU\*\*\*\*

1. PUSH

2. POP

3. PEEK

4. DISPLAY

5. EXIT

Enter your option: 12

\*\*\*\*MAIN MENU\*\*\*\*

1. PUSH

2. POP

3. PEEK

4. DISPLAY

5. EXIT

Enter your option: 5

--------------------------------

Process exited after 36.68 seconds with return value 0

Press any key to continue