Stack using queue

Code:

#include <stdio.h>

#define MAX 100

int q[MAX];

int front=-1,rear=-1,n;

void enqueue(){

    /\*

    Insertion will take place from rear and deletion from front

    When inserting, increment the rear and front. So rear and front will both point

    to the top of the queue, i.e, the current most element.

    \*/

    if(rear==n-1){

        printf("\n--Overflow--");

    }

    else{

        int data;

        printf("\nEnter your data:");

        scanf("%d",&data);

        q[++rear]=data;

        front++;

    }

}

void dequeue(){

    /\*

    Deletion will take place from the front and we will decrement

    both the front and rear so that both points to the current most

    element.

    \*/

    if(front==-1){

        printf("\n--Underflow--");

    }

    else{

        printf("\nelement dequeued is: %d",q[front--]);

        rear--;

    }

}

void traverse(){

    int i=front;

    if(rear!=-1){

        printf("\nElements are:");

        while(i!=-1){

            printf("\n%d",q[i]);

            i--;

        }

    }

    else{

        printf("\nStack empty");

    }

}

int main(){

    printf("\nEnter max number of elements in queue:");

    scanf("%d",&n);

    int inp;

    do{

        printf("\nEnter 1 to push,2 to pop,3 to traverse and 4 to quit:");

        scanf("%d",&inp);

        switch(inp){

            case 1:

                enqueue();

                break;

            case 2:

                dequeue();

                break;

            case 3:

                traverse();

                break;

            case 4:

                break;

        }

    }

    while(inp!=4);

}

Output:

Enter max number of elements in queue:4

Enter 1 to push,2 to pop,3 to traverse and 4 to quit:1

Enter your data:1

Enter 1 to push,2 to pop,3 to traverse and 4 to quit:1

Enter your data:2

Enter 1 to push,2 to pop,3 to traverse and 4 to quit:1

Enter your data:3

Enter 1 to push,2 to pop,3 to traverse and 4 to quit:3

Elements are:

3

2

1

Enter 1 to push,2 to pop,3 to traverse and 4 to quit:2

element dequeued is: 3

Enter 1 to push,2 to pop,3 to traverse and 4 to quit:2

element dequeued is: 2

Enter 1 to push,2 to pop,3 to traverse and 4 to quit:2

element dequeued is: 1

Enter 1 to push,2 to pop,3 to traverse and 4 to quit:2

--Underflow--

Enter 1 to push,2 to pop,3 to traverse and 4 to quit:3

Stack empty

Enter 1 to push,2 to pop,3 to traverse and 4 to quit:1

Enter your data:1

Enter 1 to push,2 to pop,3 to traverse and 4 to quit:1

Enter your data:2

Enter 1 to push,2 to pop,3 to traverse and 4 to quit:1

Enter your data:3

Enter 1 to push,2 to pop,3 to traverse and 4 to quit:1

Enter your data:4

Enter 1 to push,2 to pop,3 to traverse and 4 to quit:1

--Overflow--

Enter 1 to push,2 to pop,3 to traverse and 4 to quit:3

Elements are:

4

3

2

1

Enter 1 to push,2 to pop,3 to traverse and 4 to quit:4