#include<stdio.h>

#include<stdlib.h>

#include<malloc.h>

struct node

{

int num;

struct node\* next;

};

struct queue

{

struct node\* front;

struct node\* rear;

};

struct queue \*q;

void\* create\_q(struct queue\*);

void\* enq(struct queue\* ,int );

void\* deq(struct queue\* );

void display(struct queue \*);

int peek(struct queue\*);

int main()

{

int i,val;

q=create\_q(q);

printf("enter 1 to enqueue\t\t2 to dequeue\t\t3 to display\t\t4 to peek\t\t5 to exit\n");

scanf("%d",&i);

while(1)

{

switch(i)

{

case 1: printf("enter the value you want to insert in the link list\n");

scanf("%d",&val);

q=enq(q,val);

printf("%d is inserted in the queue\n",val);

break;

case 2: q=deq(q);

printf("element deleted \n");

break;

case 3: display(q);

printf("here's yur queue implemented using linked list\n");

break;

case 4: val=peek(q);

printf("value at he front of queue is %d\n",val);

break;

case 5: exit(1);

break;

default: printf("enter a valid number 1-5\n");

break;

}

}

return 0;

}

void\* create\_q(struct queue\* q)

{ q=(struct queue \*)malloc(sizeof(struct queue \*));

q->rear=NULL;

q->front=NULL;

return q;

}

void\* enq(struct queue\* q,int val)

{ struct node\* ptr;

ptr=(struct node\*)malloc(sizeof(struct node\*));

ptr->num=val;

if(q->front=NULL)

{ q->front=q->rear=ptr;

q->front->next=q->rear->next=NULL; }

else

{

q->rear->next=ptr;

q->rear=ptr;

q->rear->next=NULL;

}

return q;

}

void\* deq(struct queue\* q)

{

struct node\* ptr;

if(q->front=NULL)

printf("underflow\n");

else

{

ptr=q->front;

q->front=q->front->next;

free(ptr);

}

return q;

}

void display(struct queue\* q)

{

if(q->front=NULL)

printf("empty queue!!\n");

else

{ struct node\* ptr=q->front;

while(ptr!=q->rear->next)

{

printf("%d\t",ptr->num );

ptr=ptr->next;

}

}

}

int peek(struct queue\* q)

{

if(q->front=NULL)

printf("empty queue!!\n");

else

return q->front->num;

}