Implementation of Queue

#include <stdio.h>

#include <stdlib.h>

struct node

{

int Element;

struct node \*Next;

}\*Front = NULL, \*Rear = NULL;

typedef struct node Queue;

int IsEmpty(Queue \*List);

void Enqueue(int e);

void Dequeue();

void Display();

int main()

{

int ch, e;

do

{

printf("1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT"); printf("\nEnter your choice : "); scanf("%d", &ch);

switch(ch)

{

case 1:

printf("Enter the element : "); scanf("%d", &e);

Enqueue(e);

break;

case 2:

Dequeue();

break;

case 3:

Display();

break;

}

} while(ch <= 3);

return 0;

}

int IsEmpty(Queue \*List)

{

if(List == NULL)

return 1;

else

return 0;

}

void Enqueue(int e)

{

Queue \*NewNode = malloc(sizeof(Queue));

NewNode->Element = e;

NewNode->Next = NULL;

if(Rear == NULL)

Front = Rear = NewNode;

else

{

Rear->Next = NewNode;

Rear = NewNode;

}

}

void Dequeue()

{

if(IsEmpty(Front))

printf("Queue is Underflow...!\n"); else

{

Queue \*TempNode;

TempNode = Front;

if(Front == Rear)

Front = Rear = NULL;

else

Front = Front->Next;

printf("%d\n", TempNode->Element); free(TempNode);

}

}

void Display()

{

if(IsEmpty(Front))

printf("Queue is Underflow...!\n"); else

{

Queue \*Position;

Position = Front;

while(Position != NULL)

{

printf("%d\t", Position->Element); Position = Position->Next; }

printf("\n");

}

}

Output

1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT

Enter your choice : 1

Enter the element : 10

1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT

Enter your choice : 1

Enter the element : 20

1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT

Enter your choice : 1

Enter the element : 30

1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT

Enter your choice : 1

Enter the element : 40

1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT

Enter your choice : 1

Enter the element : 50

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1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT Enter your choice : 3

10 20 30 40 50 1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT Enter your choice : 2

10

1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT Enter your choice : 2

20

1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT Enter your choice : 2

30

1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT Enter your choice : 2

40

1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT Enter your choice : 2

50

1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT Enter your choice : 2

Queue is Underflow...!

1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT Enter your choice : 4