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1BM19BT005

LAB-4

WAP to simulate the working of a queue of integers using an array. Provide the following operations a) Insert b) Delete c) Display The program should print appropriate messages for queue empty and queue overflow conditions.

#include <stdio.h>

#define size 5

int arr[size];

int rare=-1;

int front=-1;

void Display();

void Enqueue();

void Dequeue();

void main()

{

int choice;

while(1)

{

printf("1.Enqueue\n");

printf("2.Dequeue\n");

printf("3.Display\n");

printf("4.Exit \n");

printf("Enter your choice\n");

scanf("%d",&choice);

switch(choice)

{

case 1:Enqueue();

break;

case 2:Dequeue();

break;

case 3:Display();

break;

case 4:exit(1);

default:printf("Invalid input\n");

}

}

}

void Display()

{

int i;

if(front==-1)

printf("Queue is Empty\n");

else{

printf("Queue elements:\n");

for(i=front;i<=rare;i++)

{

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

printf("\n");

}

}

}

void Dequeue()

{

if(front ==-1||front>rare)

{

printf("Queue underflow\n");

return;

}

else{

printf("Deleted element is:%d\n",arr[front]);

front=front+1;

}

}

void Enqueue()

{

int item;

if(rare==(size-1))

printf("Queue Overflow\n");

else

{

if(front ==-1)

front=0;

printf("Enter the element to be inserted\n");

scanf("%d",&item);

rare=rare+1;

arr[rare]=item;

}

}

OUTPUT:



