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**Course Name: DATA STRUCTURES FOR MODERN COMPUTING SYSTEMS**

**Course Code: CSA0302**

**Question : WRITE A C PROGRAM TO PERFORM QUEUE USING LINKED LIST.**

**C PROGRAMMING CODE:**

#include <stdio.h>

#include <stdlib.h>

struct Node {

int data;

struct Node\* next;

};

struct Node\* front = NULL;

struct Node\* rear = NULL;

void enqueue(int x) {

struct Node\* newNode = (struct Node\*)malloc(sizeof(struct Node));

newNode->data = x;

newNode->next = NULL;

if(front == NULL && rear == NULL) {

front = rear = newNode;

} else {

rear->next = newNode;

rear = newNode;

}

printf("%d inserted into queue\n", x);

}

void dequeue() {

if(front == NULL) {

printf("Queue Underflow\n");

} else {

struct Node\* temp = front;

printf("%d deleted from queue\n", front->data);

front = front->next;

if(front == NULL)

rear = NULL;

free(temp);

}

}

void display() {

if(front == NULL) {

printf("Queue is Empty\n");

} else {

struct Node\* temp = front;

printf("Queue Elements: ");

while(temp != NULL) {

printf("%d ", temp->data);

temp = temp->next;

}

printf("\n");

}

}

int main() {

enqueue(10);

enqueue(20);

enqueue(30);

display();

dequeue();

display();

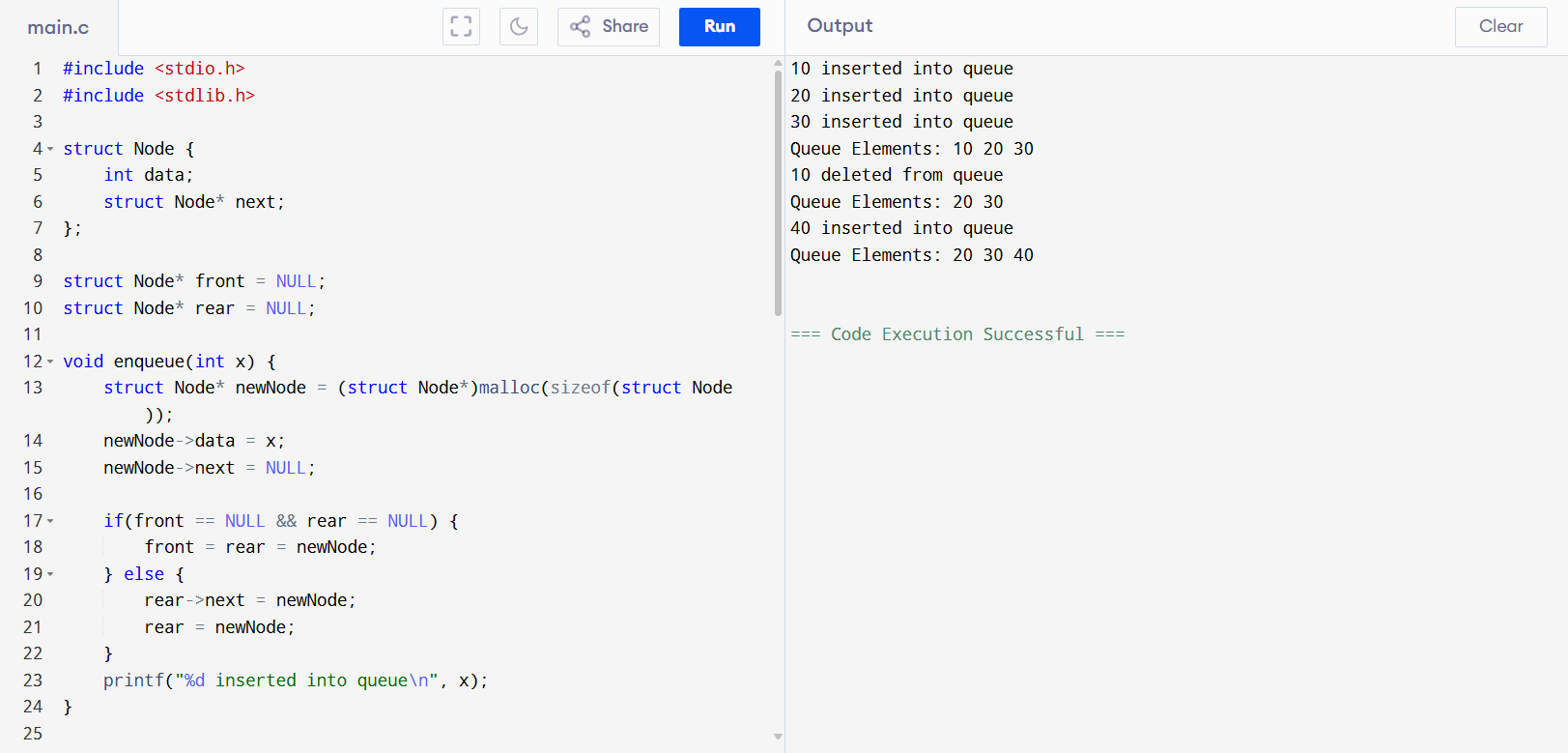
enqueue(40);

display();

return 0;

}

**OUTPUT:**

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