**Name-Jayanth MM**

**Section-I**

**DSA: Lab Program-3**

**a) WAP to simulate the working of Linear Queue using an array with the following operations: Insert, Delete and Display, also should print appropriate message for queue empty and overflow conditions.**

#include <stdio.h>

#define SIZE 3

int q[SIZE], front=-1, rear=-1;

void insert() {

if (rear == SIZE-1) {

printf("Queue Overflow!\n");

return;

}

int x;

printf("Enter value: ");

scanf("%d",&x);

if (front == -1) front = 0;

q[++rear] = x;

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

}

void delete() {

if (front == -1 || front>rear) {

printf("Queue Underflow!\n");

return;

}

printf("%d deleted.\n", q[front++]);

}

void display() {

if (front==-1 || front>rear) {

printf("Queue is empty.\n");

return;

}

printf("Queue: ");

for(int i=front;i<=rear;i++) printf("%d ", q[i]);

printf("\n");

}

int main() {

int ch;

printf("---Linear Queue---");

while(1) {

printf("\n 1.Insert 2.Delete 3.Display 4.Exit\n Enter Choice: ");

scanf("%d",&ch);

switch(ch) {

case 1: insert(); break;

case 2: delete(); break;

case 3: display(); break;

case 4: return 0;

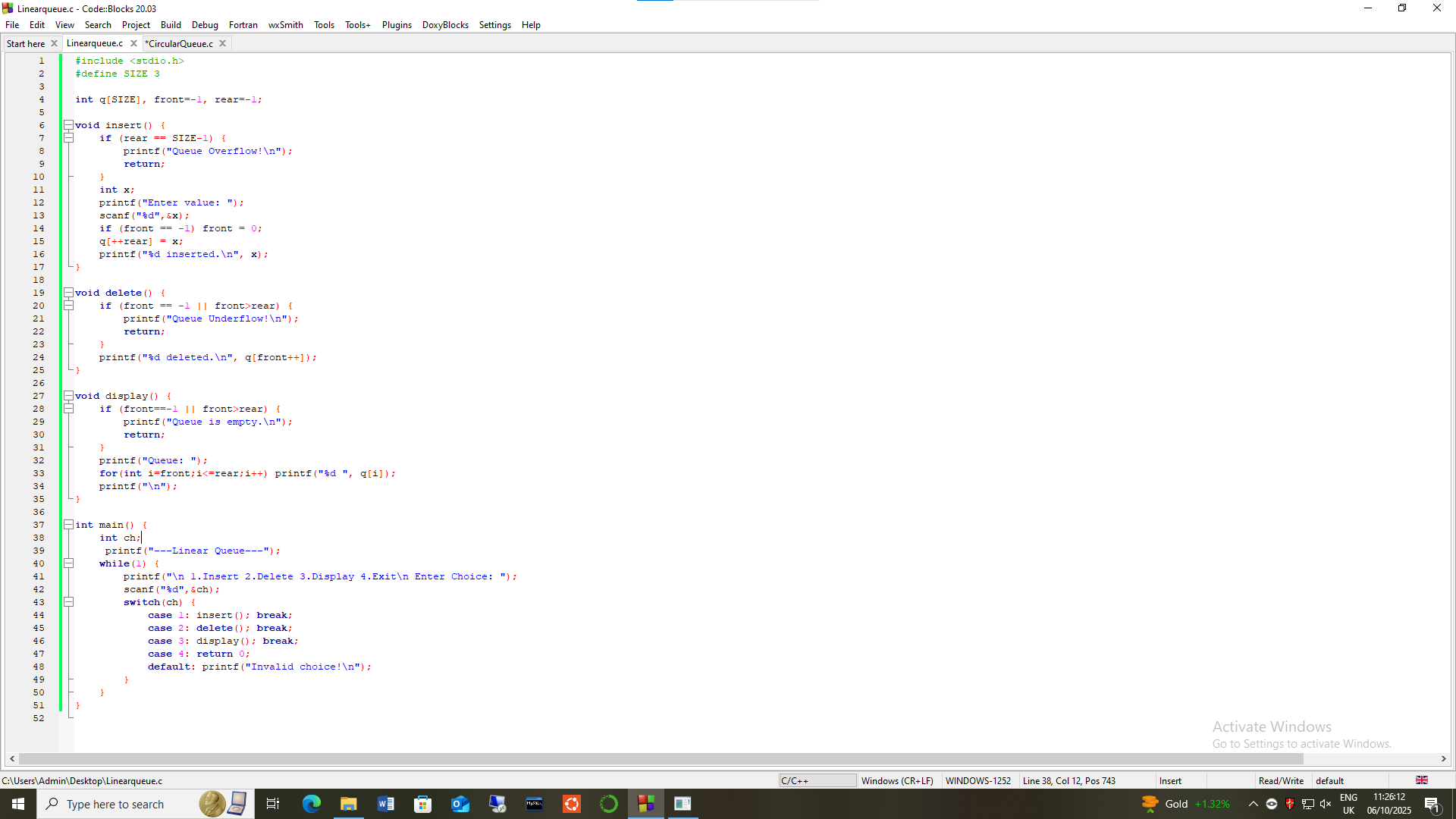
default: printf("Invalid choice!\n");

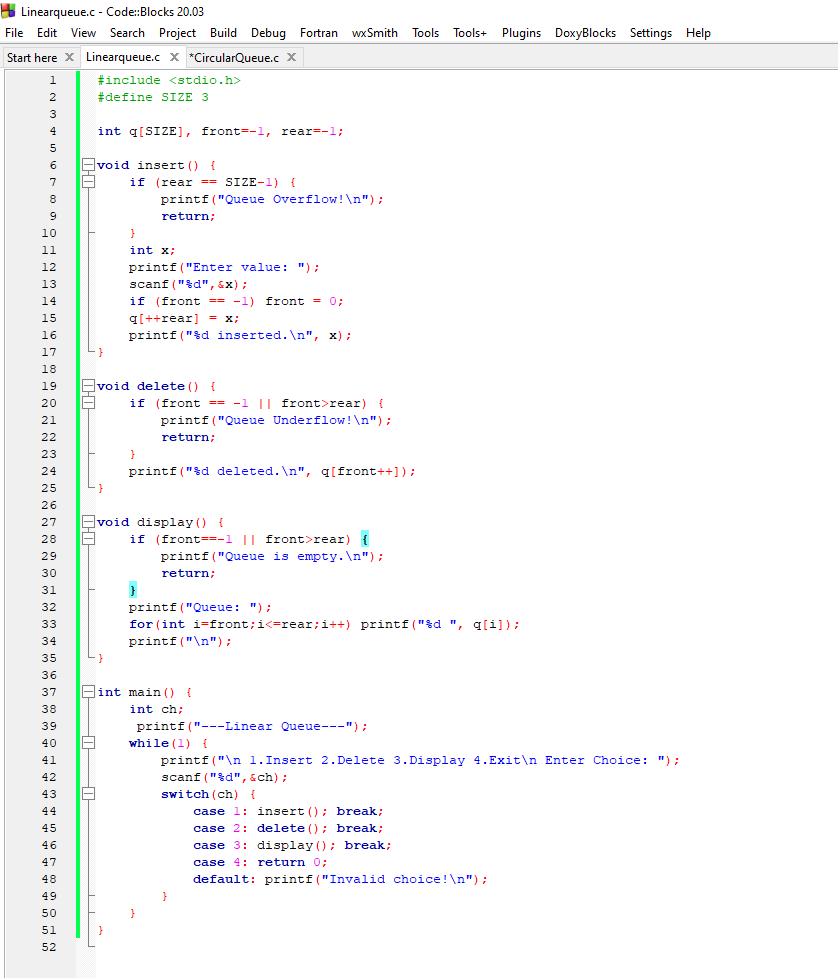
}

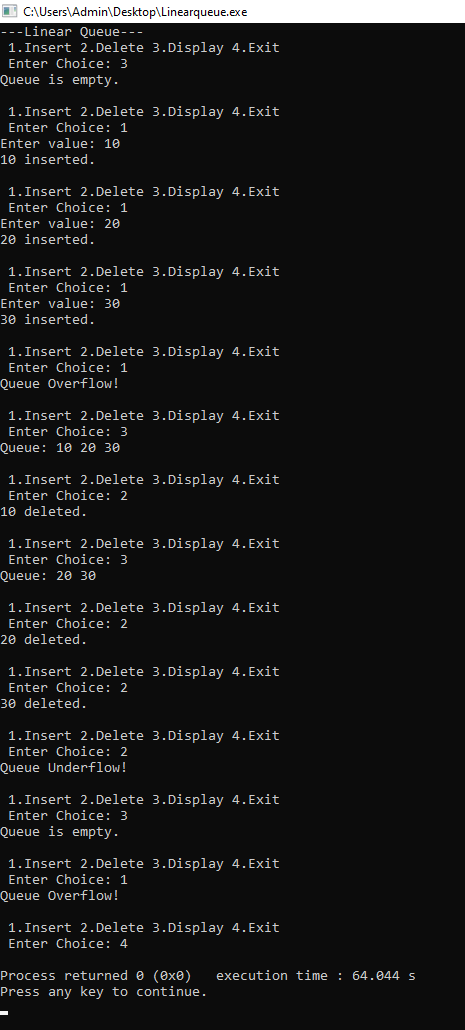
}

}

**Code and Expected Output:**

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