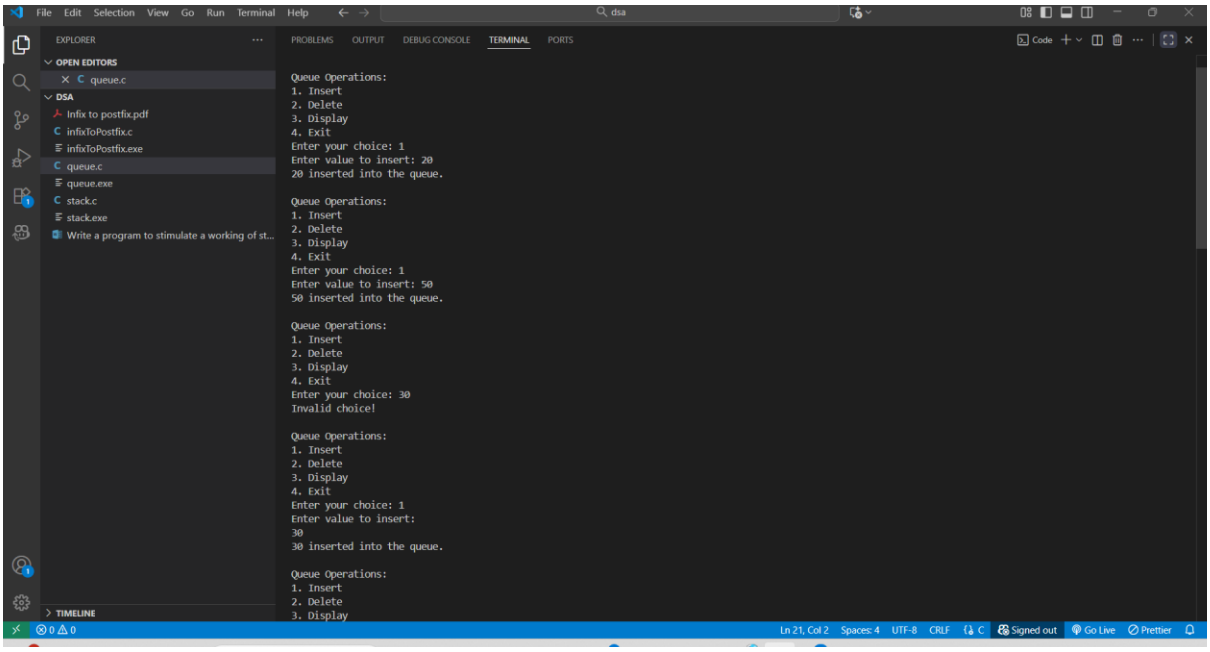
**WAP to simulate the working of a queue of integers using an array. Provide the following operations: Insert, Delete, Display The program should print appropriate messages for queue empty and queue overflow conditions**

```
#include <stdio.h>

#define MAX 5


int queue[MAX];

int front = -1, rear = -1;


void insert(int value)

{

  if (rear == MAX - 1)

  {

    printf("Queue Overflow!");

  }

  else

  {

    if (front == -1)

      front = 0;

    rear++;

    queue[rear] = value;

    printf("%d inserted into the queue.\n", value);

  }

}


void delete()

{

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

  {

    printf("Queue Underflow! \n");

  }

  else
  {
    printf("Deleted element: %d\n", queue[front]);
    front++;
    if (front > rear)
    {
      front = rear = -1;
    }
  }
}

void display()
{
  if (front == -1 || front > rear)
  {
    printf("Queue is empty.\n");
  }
  else
  {
    printf("Queue elements: ");
    for (int i = front; i <= rear; i++)
    {
      printf("%d ", queue[i]);
    }
    printf("\n");
  }
}

int main()
{
  int choice, value;
```

```
while (1)
{
    printf("\nQueue Operations:\n");
    printf("1. Insert\n");
    printf("2. Delete\n");
    printf("3. Display\n");
    printf("4. Exit\n");
    printf("Enter your choice: ");
    scanf("%d", &choice);

    switch (choice)
    {
    case 1:
        printf("Enter value to insert: ");
        scanf("%d", &value);
        insert(value);
        break;
    case 2:
        delete();
        break;
    case 3:
        display();
        break;
    case 4:
        printf("Exiting program.\n");
        return 0;
    default:
        printf("Invalid choice!\n");
    }
}
```

```
    return 0;
}
```

**Output :**



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dsa
EXPLORER
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queue.c
DSA
Infix to postfix.pdf
infixToPostfix.c
infixToPostfix.exe
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TIMELINE
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Code
Ln 21, Col 2 Spaces: 4 UTF-8 CRLF C Signed out Go Live Prettier

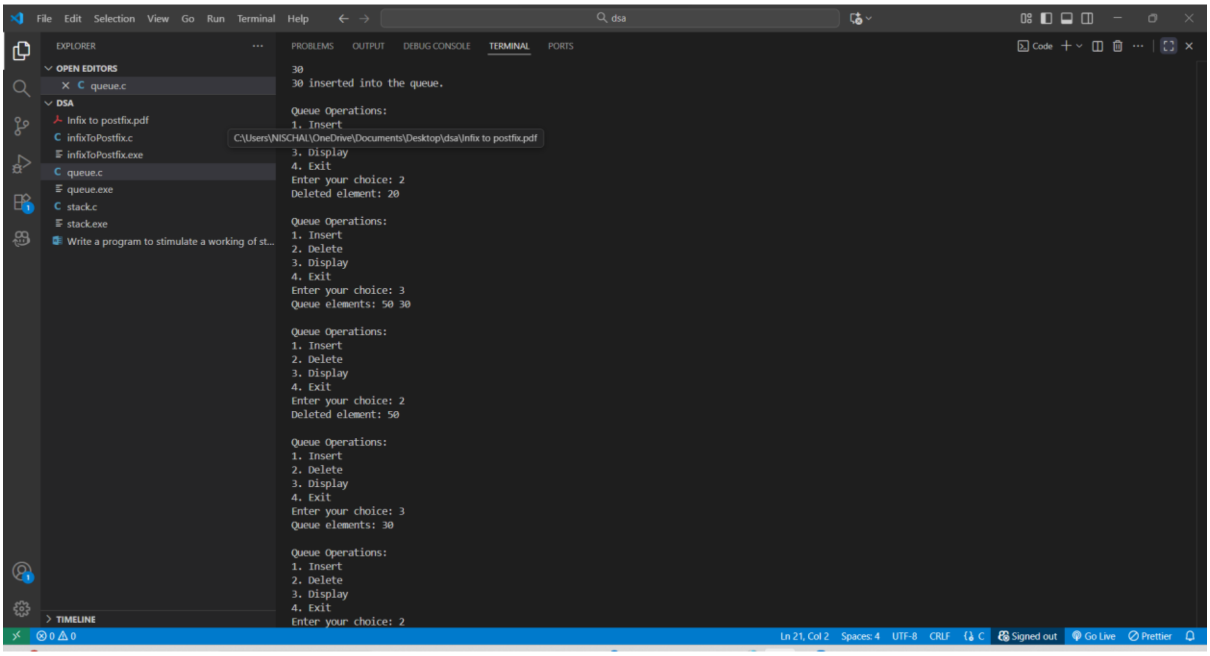
```
Queue Operations:
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 1
Enter value to insert: 20
20 inserted into the queue.

Queue Operations:
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 1
Enter value to insert: 50
50 inserted into the queue.

Queue Operations:
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 30
Invalid choice!

Queue Operations:
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 1
Enter value to insert:
30
30 inserted into the queue.

Queue Operations:
1. Insert
2. Delete
3. Display
```



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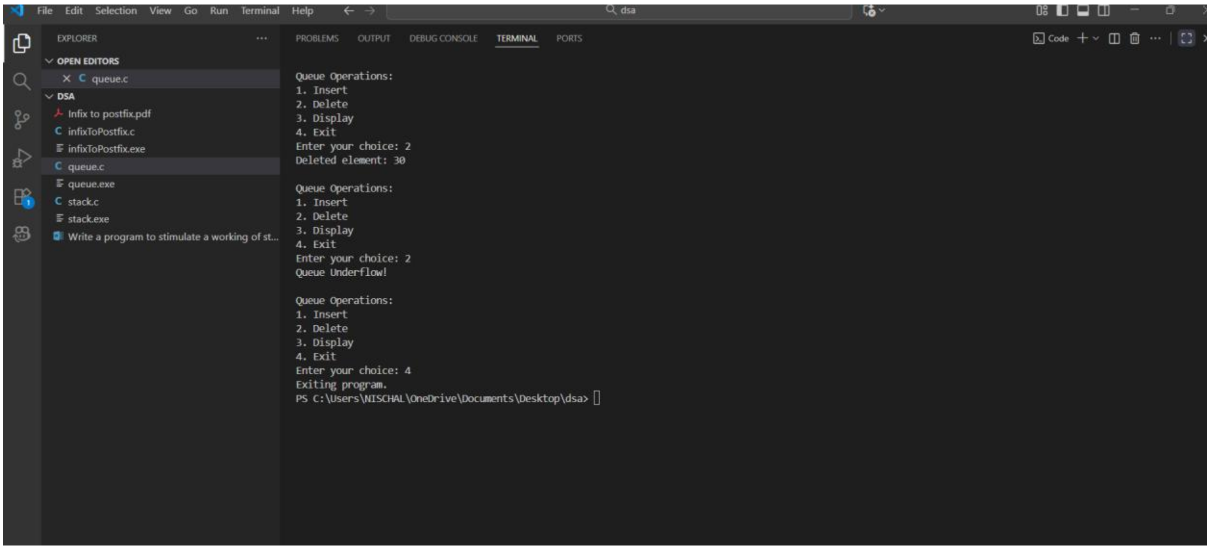
Write a program to stimulate a working of st...
TIMELINE
C:\Users\NISCHAL\OneDrive\Documents\Desktop\dsa\Infix to postfix.pdf
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Code
Ln 21, Col 2 Spaces: 4 UTF-8 CRLF C Signed out Go Live Prettier

```
30
30 inserted into the queue.

Queue Operations:
1. Insert
3. Display
4. Exit
Enter your choice: 2
Deleted element: 20

Queue Operations:
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 3
Queue elements: 50 30

Queue Operations:
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 2
Deleted element: 50

Queue Operations:
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 3
Queue elements: 30

Queue Operations:
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 2
```



```
Queue Operations:
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 2
Deleted element: 30

Queue Operations:
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 2
Queue Underflow!

Queue Operations:
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 4
Exiting program.
PS C:\Users\NISCHAL\OneDrive\Documents\Desktop\dsa>
```