Linear QUEUE.

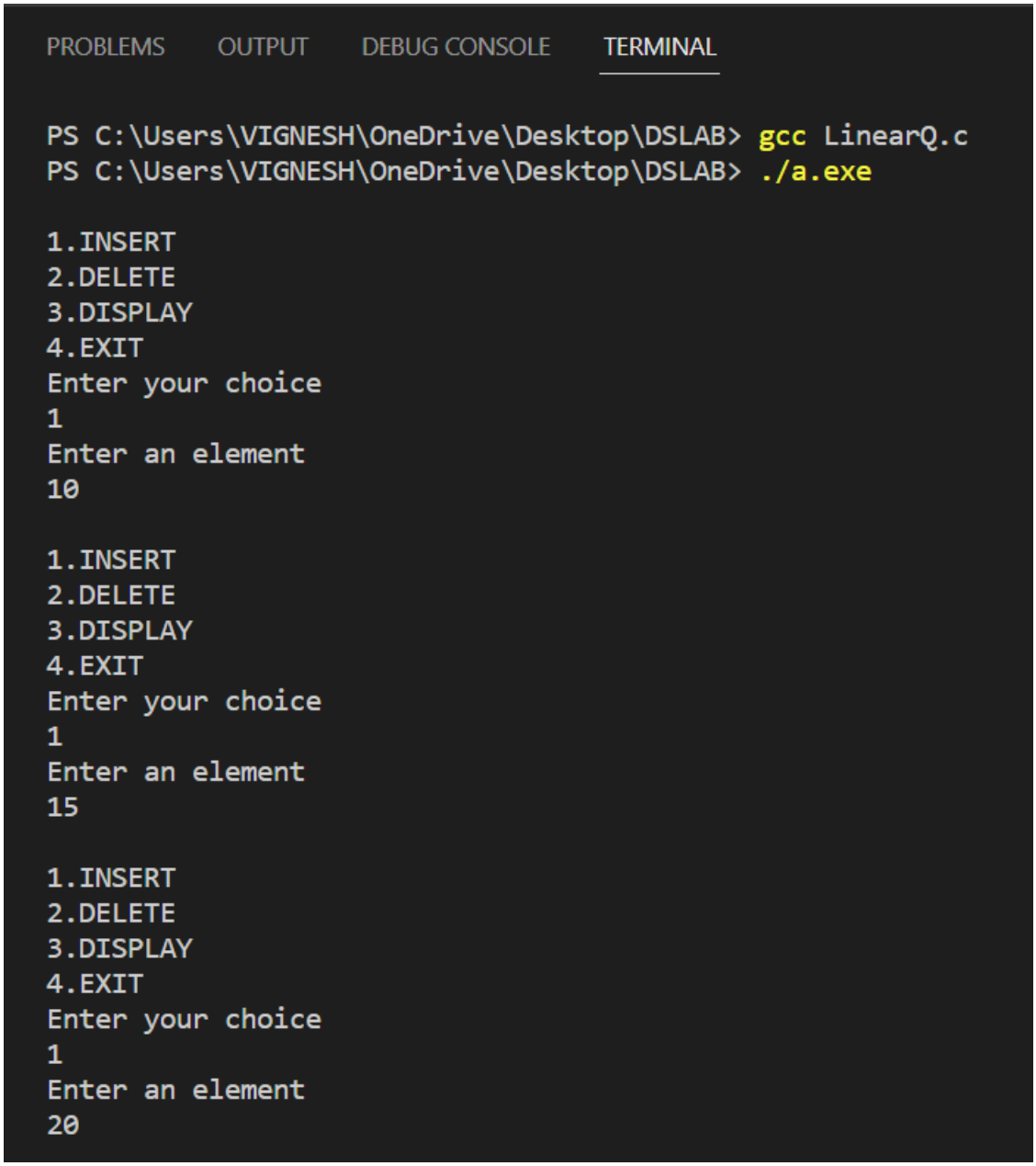
```
#include <stdio.h>
#include <stdlib.h>
#define size 3

int Q[size];
int F = -1;
int R = -1;

void Insert();
void Delete();
void Display();

void main()
{
   int choice;
   while (1)
   {
      printf("\n1.INSERT\n2.DELETE\n3.DISPLAY\n4.EXIT\n");
      printf("Enter your choice\n");
      scanf("%d", &choice);
      switch (choice)
      {
      case 1:
         Insert();
         break;
      case 2:
         Delete();
         break;
```

```
        case 3:
            Display();
            break;
        case 4:
            exit(0);
            break;
        default:
            printf("Wrong choice");
        }
    }
}

void Insert()
{
    int item;
    if (R == size - 1)
    {
        printf("\nQueue is full\n");
        return;
    }
    else if (F == -1 && R == -1)
    {
        F = 0;
        R = 0;
    }
    else
        R = R + 1;

    printf("Enter an element\n");
    scanf("%d", &item);
```

```
    Q[R] = item;
}

void Delete()
{
    int x;
    if (F == -1 && R == -1)
    {
        printf("\nQueue is empty\n");
        return;
    }
    else
    {
        x = Q[F];

        if (F == R)
        {
            F = -1;
            R = -1;
        }
        else
        {
            F = F + 1;
        }
    }
    printf("\nDeleted element is %d\n", x);
}

void Display()
{
```

```
    if (F == -1 && R == -1)
    {
        printf("\nQueue is empty\n");
        return;
    }
    else
    {
        printf("\nQUEUE CONTENTS\n");
        for (int i = F; i <= R; i++)
        {
            printf("%d\n", Q[i]);
        }
    }
}
```

OUTPUT:


PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PS C:\Users\VIGNESH\OneDrive\Desktop\DSLAB> gcc LinearQ.c
PS C:\Users\VIGNESH\OneDrive\Desktop\DSLAB> ./a.exe
1.INSERT
2.DELETE
3.DISPLAY
4.EXIT
Enter your choice
1
Enter an element
10
1.INSERT
2.DELETE
3.DISPLAY
4.EXIT
Enter your choice
1
Enter an element
15
1.INSERT
2.DELETE
3.DISPLAY
4.EXIT
Enter your choice
1
Enter an element
20

```
1.INSERT
2.DELETE
3.DISPLAY
4.EXIT
Enter your choice
1

Queue is full

1.INSERT
2.DELETE
3.DISPLAY
4.EXIT
Enter your choice
3

QUEUE CONTENTS
10
15
20

1.INSERT
2.DELETE
3.DISPLAY
4.EXIT
Enter your choice
2

Deleted element is 10
```

```
1.INSERT
2.DELETE
3.DISPLAY
4.EXIT
Enter your choice
2

Deleted element is 15

1.INSERT
2.DELETE
3.DISPLAY
4.EXIT
Enter your choice
2

Deleted element is 20

1.INSERT
2.DELETE
3.DISPLAY
4.EXIT
Enter your choice
2

Queue is empty

1.INSERT
2.DELETE
3.DISPLAY
4.EXIT
Enter your choice
3

Queue is empty
```