

Regular Expression Used: $(01)^*$

NFA Produced:

| State | 0 | 1 | eps | Accepting State |
|-------|---|---|-----|-----------------|
| 0 | 1 | | | No |
| 1 | | | 2 | No |
| 2 | | 3 | | No |
| 3 | | | 0 5 | No |
| 4 | | | 0 5 | No |
| 5 | | | | Yes |

The start state is:4

DFA Produced:

| STATE | 0 | 1 | Accepting State |
|-------|---|---|-----------------|
| 0 | 1 | 3 | 1 |
| 1 | 3 | 2 | 0 |
| 2 | 1 | 3 | 1 |
| 3 | 3 | 3 | 0 |

The start state is: 0

Stimulations:

1. Input: 01010101

Result:

| Enter the string to be stimulated:01010101 | | | |
|--|---------------|------------|--|
| Input | Current State | Next State | |
| 0 | 0 | 1 | |
| 1 | 1 | 2 | |
| 0 | 2 | 1 | |
| 1 | 1 | 2 | |
| 0 | 2 | 1 | |
| 1 | 1 | 2 | |
| 0 | 2 | 1 | |
| 1 | 1 | 2 | |

Result:Accepted

2. Input: 01010

Result:

```
Enter the string to be stimulated:01010
```

| Input | Current State | Next State |
|-------|---------------|------------|
| 0 | 0 | 1 |
| 1 | 1 | 2 |
| 0 | 2 | 1 |
| 1 | 1 | 2 |
| 0 | 2 | 1 |

```
Result:Rejected
```

3. Input: e (denotes epsilon)

Result:

```
Enter the string to be stimulated:e
```

```
Result:Accepted
```