**Gulay, Bernadeth B.**

**BS Computer Engineering**

**Structures of Programming Languages**

DFA:

Both ba & ab as substrings: (a+b)\*ba(a+b)\*ab(a+b)\* + (a+b)\*ab(a+b)\*ba(a+b)\*

**(a , b)**

**a**

**b**

**b**

**a**

**a**

**b**

**b**

**q4**

**q3**

**q2**

**q1**

**(a , b)**

**b**

**a**

**a**

**a**

**a**

**b**

**b**

**q7**

**q8**

**q6**

**q5**

**qo**

|  |  |  |
| --- | --- | --- |
| **state (q)** | **a** | **b** |
| 0 | 5 | 1 |
| 1 | 2 | 1 |
| 2 | 3 | 2 |
| 3 | 3 | 4 |
| 4 | 4 | 4 |
| 5 | 5 | 6 |
| 6 | 6 | 7 |
| 7 | 8 | 7 |
| 8 | 8 | 8 |