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**Grammar:**

S🡪AA …….(P1)

A🡪aA ……..(P2)

A🡪b ………(P3)

**SLR(1) Parse Table:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **STATE** | **ACTION** | | | **GOTO** | |
|  | a | b | $ | A | S |
| 0 | S3 | S4 |  | 2 | 1 |
| 1 |  |  | ACCEPT |  |  |
| 2 | S3 | S4 |  | 5 |  |
| 3 | S3 | S4 |  | 6 |  |
| 4 | r3 | r3 | r3 |  |  |
| 5 |  |  | r1 |  |  |
| 6 | r2 | r2 | r2 |  |  |

**STACK IMPLEMENTATION**

|  |  |  |
| --- | --- | --- |
| **STACK** | **INPUT** | **Action** |
| 0 | aabb$ | Table[0][a] = S3, Push a and 3 |
| 0a3 | abb$ | Table[3][a] = S3, Push a and 3 |
| 0a3a3 | bb$ | Table[3][b] = S4, Push b and 4 |
| 0a3a3b4 | b$ | Table[4][b] = r3, Len(RHS(P3))=1, Pop Lenx2=2 Entries, Push LHS(P3) |
| 0a3a3A | b$ | Table[3][A] = 6, Push 6 |
| 0a3a3A6 | b$ | Table[6][b] = r2, Len(RHS(P2))=2, Pop Lenx2=4 Entries, Push LHS(P2) |
| 0a3A | b$ | Table[3][A] = 6, Push 6 |
| 0a3A6 | b$ | Table[6][b] = r2, Len(RHS(P2))=2, Pop Lenx2=4 Entries, Push LHS(P2) |
| 0A | b$ | Table[0][A] = 2, Push 2 |
| 0A2 | b$ | Table[2][b] = S4, Push b and 4 |
| 0A2b4 | $ | Table[4][$] = r3, Len(RHS(P3))=1, Pop Lenx2=2 Entries, Push LHS(P3) |
| 0A2A | $ | Table[2][A] = 5, Push 5 |
| 0A2A5 | $ | Table[5][$] = r1, Len(RHS(P1))=2, Pop Lenx2=4 Entries, Push LHS(P1) |
| 0S | $ | Table[0][S] = 1, Push 1 |
| 0S1 | $ | Table[1][$] = ACCEPT |