**Test Scenario Synthesis**

**Key Parameters to Test:**

**Credit Score:**

Minimum (300), Maximum (850), and typical values (e.g., 650, 720).

**Annual Income:**

Low income, medium income, and high income (e.g., $20,000, $60,000, $500,000).

**Debt-to-Income Ratio:**

Low ratio (0.1), medium ratio (0.3), and high ratio (0.5).

**Employment Status:**

Employed, Self-Employed, and Unemployed.

**Loan Amount:**

Small loan, medium loan, and large loan (e.g., $10,000, $100,000, $1,000,000)

**Example Test Scenarios**

| **Test Case ID** | **Credit Score** | **Annual Income** | **Debt-to-Income Ratio** | **Employment Status** | **Loan Amount** | **Expected Loan Score** | **Expected Decision** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| TC001 | 300 | 20,000 | 0.5 | Unemployed | 50,000 | Low (< 60) | Loan Rejected |
| TC002 | 850 | 500,000 | 0.1 | Employed | 100,000 | High (≥ 80) | Loan Approved |
| TC003 | 650 | 60,000 | 0.3 | Self-Employed | 150,000 | Medium (60–79) | Loan Approved with Conditions |
| TC004 | 720 | 100,000 | 0.4 | Employed | 300,000 | Medium (60–79) | Loan Approved with Conditions |
| TC005 | 850 | 500,000 | 0.5 | Self-Employed | 1,000,000 | Medium (60–79) | Loan Approved with Conditions |
| TC006 | 400 | 30,000 | 0.2 | Employed | 10,000 | Low (< 60) | Loan Rejected |
| TC007 | 800 | 100,000 | 0.2 | Employed | 50,000 | High (≥ 80) | Loan Approved |
| TC008 | 500 | 40,000 | 0.4 | Unemployed | 20,000 | Low (< 60) | Loan Rejected |
| TC009 | 750 | 80,000 | 0.25 | Employed | 200,000 | Medium (60–79) | Loan Approved with Conditions |
| TC010 | 850 | 500,000 | 0.1 | Employed | 1,000,000 | High (≥ 80) | Loan Approved |