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AI-generated content may be incorrect.SQL ASSESSMENT WORKBOOK V2 Step-4: Process Improvements – Loan Origination, Payments, Risk Models**

**EduFin SQL Skill Assessment Workbook: Step 4 Evaluation**

**Program: Skill AI Path – Data Analyst Pretraining Track  
Module: EduFin Risk Analytics Simulation  
Assessment Type: SQL Query Writing + Business Understanding  
Prepared For: EduFin Data Analyst Cohort  
Organization: Krishnav Tech | Skill AI Path**

**Objective**

To assess learners’ ability to:

* Detect inefficiencies in loan origination.
* Monitor and optimize payment workflows.
* Validate improvements to risk assessment models using SQL.

# SQL Skill Check Assessment – Pretraining Workbook

## PART A: Query Writing (60 points)

**Q1 (10 pts) — Loan Origination Delays**  
Write a funnel analysis query showing conversion rates from application to disbursement with stage-wise drop-off percentages and average time at each stage.

**Your Answer:**

**Q2 (10 pts) — Origination Null Check**  
Create a business rule compliance report showing violation rates for income verification, credit score requirements, and document completeness with impact analysis.

**Your Answer:**

**Q3 (10 pts) — Payment Workflow Bottlenecks**  
Build a payment reconciliation query identifying discrepancies between expected and actual collections, including aging analysis and collection efficiency metrics.

**Your Answer:**

**Q4 (10 pts) — Failed vs Successful Payments**  
Develop a risk model performance analysis showing predicted vs. actual default rates by risk score bands with calibration assessment.

**Your Answer:**

**Q5 (10 pts) — Risk Model Backtesting**  
Write queries for process bottleneck identification showing stage-wise processing times, SLA compliance, and exception tracking.

**Your Answer:**

**Q6 (10 pts) — Consolidated Risk Process Report**  
Create an executive KPI dashboard query combining operational efficiency, quality scores, and process improvement recommendations.

**Your Answer:**

## PART B: Multiple Choice (40 points)

**Q7:** Which function is best for calculating conversion rates between funnel stages?

- A) SUM() with CASE statements

- B) LAG() window function

- C) COUNT() with percentages

- D) All of the above

**Answer:**

**Q8:** What's the correct approach for payment reconciliation?

- A) Compare expected vs. actual amounts

- B) Check for duplicate payments

- C) Validate payment status consistency

- D) All of the above

**Answer:**

**Q9:** In risk model validation, what indicates good calibration?

- A) High correlation between predicted and actual rates

- B) Low prediction error across risk bands

- C) Consistent model performance over time

- D) All of the above

**Answer:**

**Q10:** Which metric best measures process efficiency?

- A) Average processing time

- B) Straight-through processing rate

- C) Exception rate

- D) All are important

**Answer:**

**Q11:** For funnel analysis, why use LAG() function?

- A) To compare current stage with previous stage

- B) To calculate conversion rates

- C) To identify drop-off points

- D) All of the above

**Answer:**

**Q12:** What's the purpose of business rule validation queries?

- A) Ensure compliance with policies

- B) Identify process gaps

- C) Measure rule effectiveness

- D) All of the above

**Answer:**

**Q13:** In payment flow audits, what requires immediate attention?

- A) Failed payments above threshold

- B) Reconciliation discrepancies

- C) Unusual payment patterns

- D) All of the above

**Answer:**

**Q14:** How do you measure risk model discrimination power?

- A) Compare average scores of good vs. bad loans

- B) Calculate Gini coefficient

- C) Analyze score separation

- D) All of the above

**Answer:**

**Q15:** What makes a good process KPI?

- A) Actionable insights

- B) Clear targets and thresholds

- C) Trend visibility

- D) All of the above

**Answer:**

**Q16:** When validating data quality in process improvement, check for:

- A) Completeness and accuracy

- B) Consistency and timeliness

- C) Validity and uniqueness

- D) All of the above

**Answer:**

## Passing Criteria

* Minimum Score Required: **80 out of 100**
* Query Writing: **At least 48/60**
* MCQ Section: **At least 32/40**
* Time Limit: **90 minutes**
* Retakes Allowed: Unlimited until 80% is achieved

## Skills Validated

Upon achieving 80%, you will have demonstrated:

- ✅ Funnel analysis and conversion rate calculations

- ✅ Business rule compliance validation

- ✅ Payment flow reconciliation and audit queries

- ✅ Risk model performance evaluation

- ✅ Process bottleneck identification

- ✅ KPI dashboard creation with executive formatting

- ✅ Exception handling and trend analysis

- ✅ Quality and compliance monitoring

## STUDY RECOMMENDATIONS

1. **Master funnel analysis techniques** - crucial for identifying process bottlenecks

2. **Practice rule validation queries** - essential for compliance and quality assurance

3. **Focus on reconciliation logic** - critical for payment flow accuracy

4. **Understand model performance metrics** - key for risk management

5. **Get comfortable with KPI dashboards** - executive presentation skills needed

**Time Investment:** Allow 6-7 hours for complete mastery before assessment.

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