KiyaAI Credit Assessment System

BRD_V.1.3

Submitted to – Commercial Bank of Kuwait

Date – 09-12-2025

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SIGN-OFF

This is the BRD document prepared for the implementation of **KiyaAI's Credit Assessment System** at **CBK**.

For KiyaAI

Prepared By	Reviewed By	Approved By

For CBK

Name	Designation	Signature

We have reviewed this document and agreed that the same is in line with what has been demonstrated, discussed, and finalised between **Kiya.ai's Team** and **CBK IT and Business Teams**. We agree that this document **overrides any other documents** that have been shared previously.

Please note that the final screens developed may differ slightly from the screen layouts outlined in the BRD, depending on technical feasibility.

✔ Approval Statement

~~By signing this document, all parties acknowledge that the requirements described herein are complete to the best of their knowledge and accurately represent the expected functionality of the **KiyaAI Credit Assessment System.**~~

This document has been prepared to provide clarity on the deliverables for the KiyaAI Credit Assessment System. However, CBK's Request for Proposal (RFP) shared during the bidding process remains the primary source for enumerating, interpreting, and assessing the project deliverables. **In alignment with the RFP, KiyaAI has mapped all requirements specified therein to the corresponding items in the BRD prepared for sign-off and has shared the consolidated mapping with the Bank in a separate Excel file.**

Any modifications post–sign-off must go through the agreed change-control process.

Commented [UP1]: Suggested text "This document has been prepared to provide clarity on the deliverables for KiyaAi Credit Assessment System. However, CBK's Request for Proposal (RFP) shared during the bidding process remains the primary source for enumerating, interpreting and assessing the project deliverables."

Commented [PS2R1]: This point has been reviewed and has now been addressed in Version 1.1 of the BRD. The statement has been updated to clearly reflect the RFP as the primary reference for project deliverables.

Commented [UP3]: While this document is drafted as the final reference point, no project timelines have been specified.

Commented [PS4R3]: *This comment has been addressed in Version 1.1 of the BRD. The project plan was discussed with CBK stakeholders on 25-11-2025, and the detailed plan including dates and timelines will be shared separately.*

BRD Version

Version	Date	Description	Prepared By	Reviewed By	Approved By
1.0	20-Nov-2025	First version of BRD shared with CBK for review.	Kiya.ai Project Team	CBK Business & IT Team	Mr. Tanveer Munshi
1.1	26-Nov-2025	Updates based on client comments & review inputs.	Kiya.ai Project Team	CBK Business & IT Team	Mr. Tanveer Munshi
1.2	01-Dec-2025	Updates based on client comments & review inputs.	Kiya.ai Project Team	CBK Business & IT Team	Mr. Tanveer Munshi
1.3	09-Dec-2025	Updates based on client comments & review inputs.	Kiya.ai Project Team	CBK Business & IT Team	Mr. Tanveer Munshi

1. INTRODUCTION

The **KiyaAI Credit Assessment System** is a comprehensive digital platform designed to automate and enhance the credit evaluation process for financial institutions. The system provides a structured workflow for assessing borrowers by leveraging configurable rating templates, parameter-based scoring, financial analysis, automated ratio calculations, OCR-based data ingestion, and AI-driven insights.

The platform supports end-to-end credit assessment activities, including data collection, template management, parameter configuration, risk scoring, report generation, user management, system configuration, and audit tracking. It ensures consistency, transparency, and regulatory compliance in the credit evaluation lifecycle.

This Business Requirements Document (BRD) defines the detailed functional, non-functional, operational, and user-interface requirements required to implement the system in alignment with business expectations.

2. PURPOSE

The purpose of this BRD is to:

- Document all **functional and operational requirements** for the KiyaAI Credit Assessment System.
- Provide a detailed understanding of **screens, workflows, user roles, system processes, data flows, APIs, and infrastructure needs**.
- Establish a single source of truth for stakeholders including:
  - Product Owners
  - Business Analysts
  - Technical Architects
  - Developers
  - QA Teams
  - End Users
  - Implementation & Deployment Teams
- Define expected behaviors of each module to ensure:
  - Consistency in development
  - Clarity for UI/UX teams
  - Precision for backend/API development
  - Alignment with regulatory and business objectives
- Bridge the gap between business expectations and technical implementation by clearly articulating:
  - Use cases

- Flows
- Acceptance criteria
- Dependencies

The BRD ensures that all teams have a unified understanding of **what the system must deliver** and **how it should function**.

3. SCOPE OF THE BRD

The scope of this BRD includes documenting the full set of business and system requirements for the **design, development, deployment, and operation** of the KiyaAI Credit Assessment System.

3.1 In-Scope Functional Areas

This BRD covers detailed requirements for the following modules:

A. Core User Modules

1. **Login & Authentication**
2. **Dashboard & Analytics**
3. **Credit Assessment Module**
   - Entity details
   - Financial data capture (manual + OCR + file upload)
   - Ratio calculations
   - Business and qualitative scoring
   - Final rating computation
   - Maker-checker approvals (if applicable)
4. **Rating Templates Management**
5. **Parameters Management**
6. **Reports & Document Generation**

B. Administrative Modules

7. **Role Management**
8. **User Management**
9. **RBAC (Role-Based Access Control)**
10. **Master Data Management**
    - Country, State, City
    - Lookup management
11. **System Configurations**
    - Email settings

- Email templates
- Module management

C. Data Management Modules

12. **Data Ingestion**
    - Financial data ingestion
    - OCR processing
    - Excel/CSV file processing
    - Data validation
    - Gaps identification

D. Technical & Deployment Scope

13. **API Catalog**
    - Internal APIs
    - Expected third-party integrations
14. **Deployment & Infrastructure Requirements**
    - Hosting
    - Database (Oracle)
    - Software prerequisites
15. **System Documents**
    - FSD
    - User Manual
    - Deployment Guide

3.2 Out-of-Scope Areas

The following items are outside the scope of this BRD unless otherwise requested:

- Enterprise LOS integration (Loan Origination System)
- Credit Bureau API integrations (unless added as per customer requirement)
- Mobile application development
- Advanced ML risk modeling
- Automated underwriting engine
- Third-party compliance validation tools

3.3 Stakeholders

- **Business Team** – Defines assessment rules, workflows, templates

- **IT Team** – Infrastructure, security, deployment
- **Development Team** – UI, backend, APIs
- **QA Team** – Testing and validations
- **Operations Users** – Credit analysts, approvers
- **Administrators** – Role, user and system configuration

3.4 Assumptions

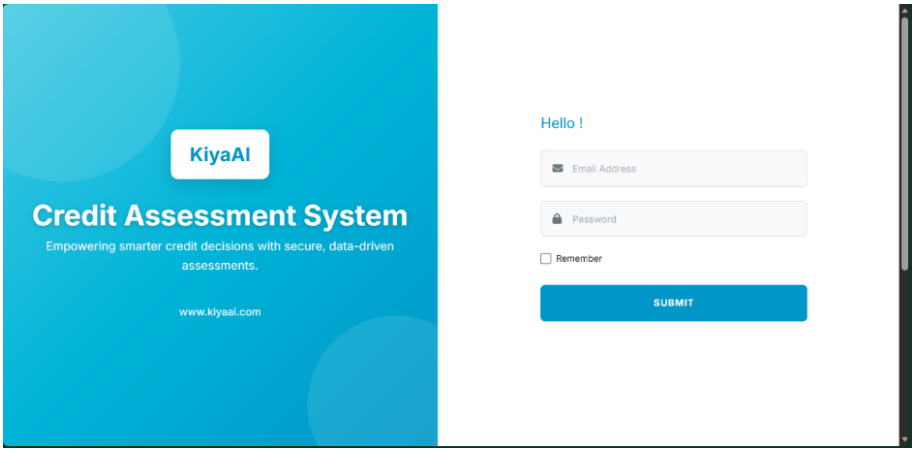
- The system will run on a secure network with HTTPS enabled.
- Oracle Database will be available as the primary data source.
- All users will be authenticated using username/password unless SSO is enabled in future.
- Master data will be provided prior to UAT.

3.5 Dependencies

- Availability of financial data input formats.
- Integration availability for OCR engine.
- Access control rules provided by business team.
- Email server configuration details.

4. Features & Functionalities

4.1. Login



The Login module provides secure entry into the KiyaAI Credit Assessment System. Users can authenticate either through **ADS (Active Directory Services)** or through **Manual Login** using email and password. The objective is to ensure only authorized users gain access to the system.

The Login screen contains:

- **Left Panel** → Welcome branding, logo, product title
- **Right Panel** → Login form
- **Fields:**
  - Email
  - Password
  - Remember Me
- **Buttons:**
  - Login
  - ADS Login (if enabled)
- **Error Display:** Invalid credential banner
- Fully responsive layout

Manual Login

- User enters **Email** + **Password**.
- System validates format and required fields.
- Authentication request sent to backend.
- On success → dashboard loads.

- On failure → error message shown with shake animation.

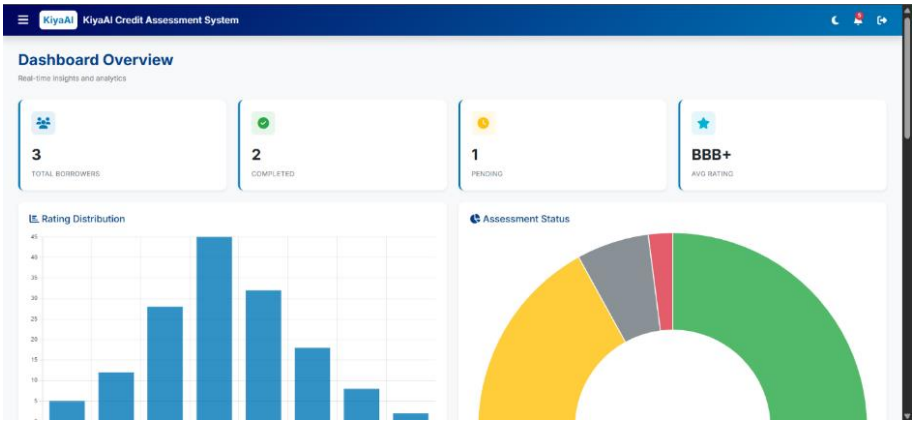
ADS Login

- User clicks **"Login with ADS"**.
- System redirects to configured ADS/SSO endpoint.
- ADS validates user credentials.
- On success → system receives user profile & roles.
- User is logged into the application without manual credential entry.

Security

- All credentials transmitted over HTTPS (If SSL Certificate implemented).
- Invalid attempts logged in audit trail.
- User session managed via token-based authentication.
- Logout clears token and session.

4.2. Dashboard



The Dashboard provides a real-time overview of credit assessment activities, borrower statistics, rating outcomes, and workflow status. It acts as the user's landing page after login and presents high-level operational insights.

The Dashboard contains the following key UI elements:

A. Summary Cards

- Total Borrowers

- Completed Assessments
- Pending Assessments
- Average Rating

B. Charts & Analytics

- Rating Distribution (Bar Chart)
- Assessment Status Distribution (Pie Chart)
- Monthly Assessment Trend (Line Chart)

C. Recent Assessments Table

- ID
- Entity Name
- Template
- Date
- Status
- Rating
- Quick Actions: Edit, Tag CIF, 360° View

A "New Assessment" button is also available to directly start the assessment workflow.

FUNCTIONAL DETAILS

Summary Statistics

- Fetches aggregated data from backend services.
- Auto-refresh on page load.
- Reflects live assessment counts and performance indicators.

Charts

- **Rating Distribution:** Shows number of entities per rating grade.
- **Assessment Status Chart:** Displays Pending / Completed / Draft statuses.
- **Trend Chart:** Monthly count of assessments over the selected period.

Charts help users understand portfolio risk patterns and workloads.

Recent Assessments

- Displays latest assessment records.
- Sortable and supports quick navigation to Edit/View.
- "New Assessment" initiates Step-1 of the Assessment Module.
- 360° customer view button opens consolidated customer profile (if implemented).

- Records show status badges (Draft, Pending, Completed).

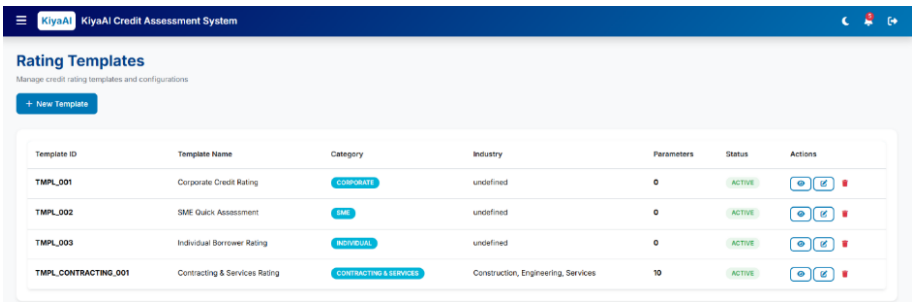
User Actions

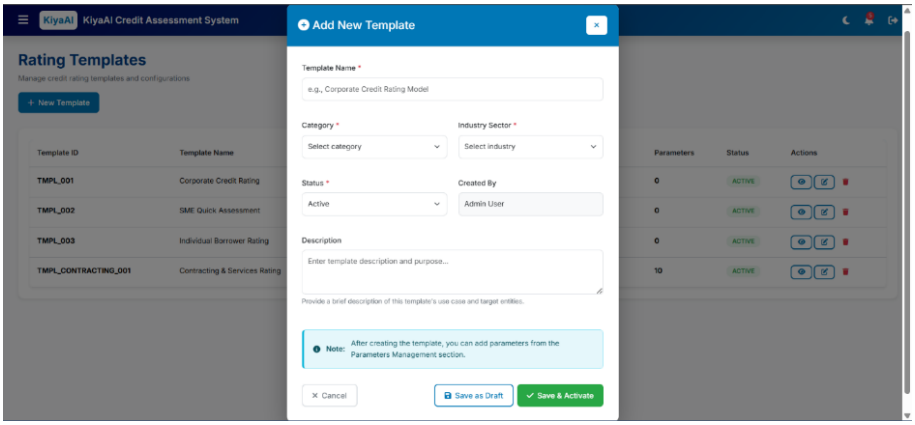
- Navigate to Assessment Module
- Continue editing previous assessments
- Tag CIF to assessments lacking customer linkage
- Trigger analytics or 360° views

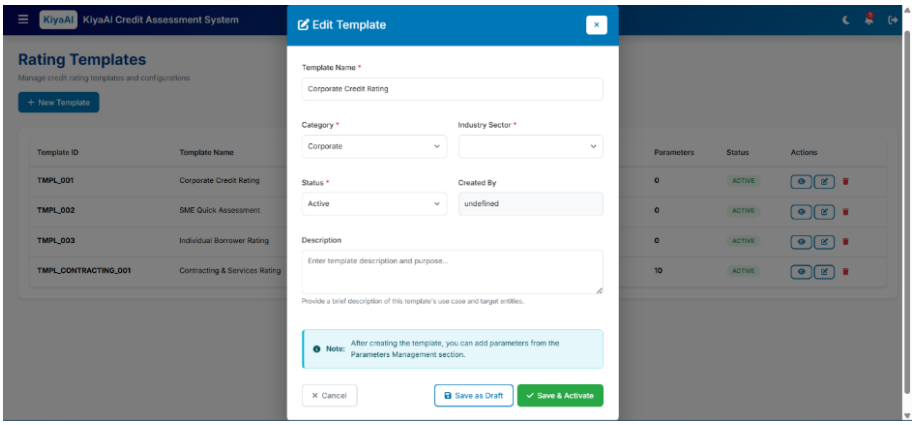
Client Additions –

- Dashboard/Landing Page must show each case with:
  - **Current workflow stage**
  - Status indicators
- Helps users track assessment stage quickly.

4.3. Rating Templates







The Rating Templates module allows administrators and credit analysts to **create, configure, and manage rating templates** used during credit assessment. Each template defines the structure of parameters, categories, weights, and industry applicability.

The Templates screen contains:

A. Template List Table

Columns include:

- Template ID
- Template Name
- Category (Corporate, SME, Real Estate, etc.)
- Industry
- Parameter Count

- Status (Active / Draft / Inactive)
- Actions (Edit, Activate/Deactivate)

B. Header Actions

- **New Template** button opens the Add/Edit Template Modal.

C. Add/Edit Template Modal

Includes fields:

- Template Name
- Category
- Industry
- Status
- Created By
- Description
- Save as Draft / Save & Activate buttons

The modal also displays a note that parameters can be added from the Parameters module after template creation.

FUNCTIONAL DETAILS

Create Template

- User clicks **New Template**.
- Modal opens to input mandatory fields.
- On save:
  - If "Save as Draft" → Template saved as Draft.
  - If "Save & Activate" → Template becomes Active.
- System records:
  - Creator
  - Creation timestamp
  - Status

Templates cannot be used in assessments unless status = Active.

Edit Template

- Selecting "Edit" from the table opens the modal pre-filled.
- Editable fields:
  - Name
  - Category

- Industry
- Description
- Status

- Updating an Active template may require versioning (based on customer requirement).

Template Status Management

Statuses:

- **Active** → Available for assessments
- **Draft** → Editable, not usable
- **Inactive** → Archived, not selectable

Status changes will be logged in the audit trail.

Template-Parameter Linkage

- Templates define structure only.
- Parameters (weights, formulas, qualitative options) are configured in the **Parameters Module**.
- Each template may have multiple parameters grouped by categories.

Templates Modal's System will have, as per the client's shared data –

1. Contracting & Service Template

2. Trading & Manufacturing Template

3. Investment Real estate & finance

4. Personal Net Worth Declaration Borrowers Grading

Client Additions –

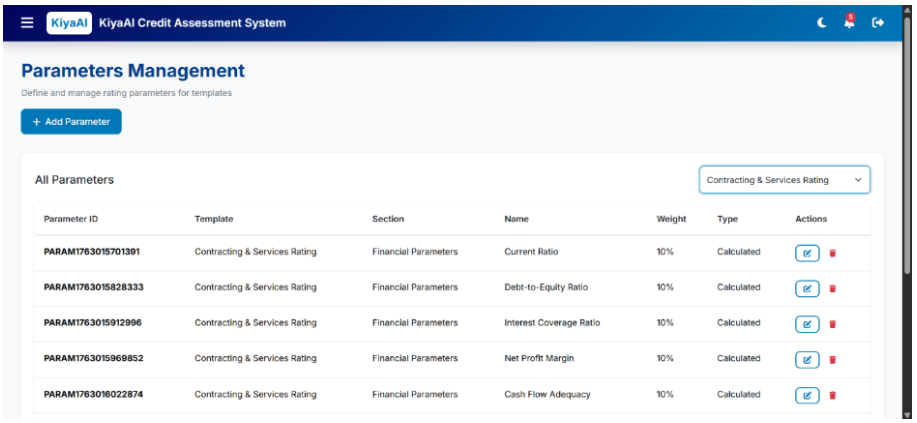
4.3.x Template Associations & Auto-Selection Enhancements

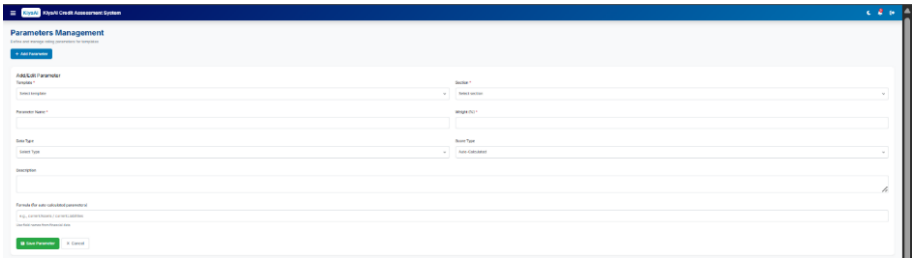
1. **Multi-Select Category & Sector Mapping**
    - **Rating Templates must support:**
        - **Multi-select Categories**
        - **Multi-select Industry Sectors**
    - **Admin can assign a single template to multiple sectors & categories.**
2. **Auto-Selection of Rating Model**
    - **During assessment, the Rating Model/template must be automatically selected based on:**

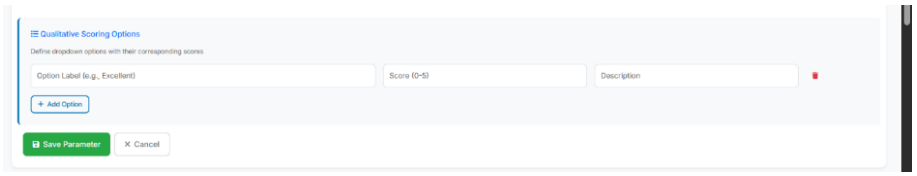
- Entity Type
- Industry Sector

- If user chooses a different template, system must display a warning prompt stating recommended template and allowing override.

4.4. Parameters Management







The Parameters Management module allows administrators to **define, configure, and maintain scoring parameters** used inside rating templates.

Each parameter contributes to the overall credit score through weights, formulas, scoring methods, or qualitative options.

This module ensures consistency and flexibility in rating model configuration.

The screen consists of:

A. Parameter List Table

Columns:

- Parameter ID
- Template Name
- Section (Financial / Business / Risk)
- Parameter Name
- Weight %
- Type (Ratio / Percentage / Number / Qualitative / Score)
- Actions (Edit/Delete)

B. Header Action

- **Add Parameter** button → opens Parameter Form

C. Parameter Form (Add/Edit)

Fields include:

- Template
- Section
- Parameter Name
- Weight (%)
- Data Type
- Score Type (Auto / Manual)
- Description
- Formula (for auto-calculated parameters)
- **Qualitative Options Section** (dynamic fields)

Visibility:

- Qualitative section appears only when Data Type = *Qualitative*.

FUNCTIONAL DETAILS

Add Parameter

- User selects template & section.
- Enters parameter details including:
    - Name

  - Weight
  - Type
  - Description
  - Formula (optional)
- If Data Type is **Qualitative**, user adds:
  - Options
  - Score for each option
- Save stores parameter under selected template.

Edit Parameter

- Opens the form with existing parameter data.
- Allows modification of:
  - Weight
  - Description
  - Formula
  - Options (if qualitative)
- Template link may be restricted for editing (based on configuration rules).

Parameter Types

- **Ratio** → Formula-based computation
- **Percentage** → Numeric input
- **Number** → Raw numeric values
- **Score (1–5)** → Manual or auto
- **Qualitative** → Dropdown with score mapping

Weight Validation

- Total weight across all parameters for a template must sum up to **100%**.
- System must:
  - Warn user on exceeding
  - Block save if invalid

Parameter-Template Relationship

- One template → Multiple parameters
- Parameters grouped by:
  - Financial Parameters
  - Business Parameters
  - Risk Parameters

Displayed in assessment steps accordingly.

Data Binding

- Parameters influence:
  - Ratio calculations
  - Business scoring
  - Final rating outcome

Values captured during assessment populate these parameters.

Parameters as per shared data

1. Contracting & Service Template

✅ 1. Customer Financial Information Table		
Sr. No	**Parameter**	**Description**
1	Revenue	Annual revenue of the customer
2	Cost of Goods Sold	Direct cost of goods sold
3	Net Profit	Profit after all expenses
4	Total Current Assets	Sum of short-term assets
5	Affiliates Due	Amount due from affiliates
6	Investment Assets	Financial investment assets
7	Total Assets	Total assets (current + non-current)
8	Total Current Liabilities	Current obligations
9	Total Debt	Total CL + Long-term liabilities
10	Total Bank Borrowings	Total outstanding bank loans
11	Total Liabilities incl. Owner's Funds	Overall liabilities
12	Net Worth	Shareholders' equity
13	Operating Cash	Operating cash flow

✅ 2. Non-Financial Information Table

Sr. No	Parameter	Description
1	Constitution and Establishment	Type of entity & incorporation details
2	Number of Years in Business	Business age
3	Unutilized Credit Limits	Available unused credit with lenders
4	Financial Planning & Control	Risk management & internal audit practices
5	Position in the Market	Competitive standing
6	Govt./Private Contracting	Type of client portfolio
7	Sensitivity to Economic Shocks	Stability against external disruptions
8	Contractor/Subcontractor Grade	Classification/grading of contractor
9	Past Track Record	History of service delivery
10	Competition & Demand	Industry competition intensity
11	Qualified Resources & Management	Availability of skilled human and physical resources

✅ 3. Mandatory Adjustments Table

Parameter	Description
Age of Financial Information	Recency of financial statements
Quality of Financial Information	Reliability, audit quality
Historical Account Performance	Customer repayment history
Qualification of Audit Report	Whether audit report has qualifications

✅ 4. Discretionary Overrides Table (Complete Professional Version)

Category	Override Reason	Max Upgrade	Max Downgrade
GEN	Management changes	2	2
GEN	Change in Regulation	1	1
GEN	Length of relationship – Strong / Weak	1	1
GEN	External Relationship (Part of strong group / troubled group)	1	1
GEN	Deposit availability / Ancillary business	1	0
GEN	Bankruptcy, Liquidation	0	3
GEN	Deterioration of group accounts exposure	0	2
GEN	Unresolved conflict between owners	0	2
GEN	Death of a key person	0	2
GEN	Non-existence of succession plan	0	1
FIN	Income Diversification	1	1

BUSS. PERF	Strategic contract signed / loss of key contract	2	2
BUSS. PERF	Change in Market Position	2	2
BUSS. PERF	Performance vs. Budget (better/worse)	1	1
BUSS. PERF	Reputation (Strong / Poor)	1	1
LEGAL	Ongoing legal dispute / Court order	0	2
ECONOMIC	Drastic fall in capital markets	0	1
ECONOMIC	Drastic fall in oil prices	0	1
ECONOMIC	Global economic deterioration	0	2
POLITICAL	Social disturbances / unrest	0	1
ASSIGNMENT	100% Govt. sector contracts with legal assignment	2	0
ASSIGNMENT	Majority contracts (>75%) with strong assignment	1	0
ASSIGNMENT	>50% contracts without credible assignment	0	1
Account Conduct	Persistent ever-greening (>2 years)	0	1

Qualitative Factor – Relative Risk Ordering - Score

F1 — Constitution and Establishment

Range	Relative Risk Order	Score
Government / Semi-government	1	29
Public Shareholding Companies	2	22
Closed Shareholding Companies	3	15
Partnership with >50% ownership / Sole Proprietorship	4	7
Other Partnership or Establishment	5	0

F2 — Number of Years in Business

Range	Relative Risk Order	Score
More than 20 years	1	29
10 – 20 years	2	22
2 – 10 years	3	11
Less than 2 years	4	0

F3 — Availability of Unutilized Credit Lines

Range	Relative Risk Order	Score

Available & utilized < 20%	1	29
Available & utilized 20–70%	2	22
Sole Bank	3	15
Available & utilized > 70%	4	7
Over-utilization beyond limits	5	0

F4 — Financial Planning & Internal Control

Range	Relative Risk Order	Score
Not Applicable	0	23
Good	1	27
Moderate	2	18
No financial planning & control	3	9

F5 — Position in the Market

Range	Relative Risk Order	Score
Market Leaders	1	29
Strong Position	2	22
Below Average	3	11
New Entrant	4	0

F6 — Govt. / Private Sector Contracting

Range	Relative Risk Order	Score
Not Applicable (Neutral Score)	0	23
100% Govt. / Public Sector	1	29
>75% Govt. / Public Sector	2	22
>50% Govt. + strong private	3	15
Majority private – net worth known	4	7
Majority private – net worth unknown	5	0

F7 — Sensitivity to Economic Shocks

Range	Relative Risk Order	Score

Unlikely to be affected	1	29
Minor impact	2	22
Likely to see impact	3	11
Highly sensitive	4	0

F8 — Contractor / Subcontractor Grade

Range	Relative Risk Order	Score
Not Applicable (Service Companies)	0	23
Grade I	1	26
Grade II	2	22
Grade III	3	17
Grade IV / Ungraded	4	12

F9 — Past Track Record

Range	Relative Risk Order	Score
Not Applicable	0	23
Excellent	1	31
Good	2	21
Average	3	7
Poor	4	-8

F10 — Competition & Demand

Range	Relative Risk Order	Score
Low competition & high demand	1	29
High competition & high demand	2	22
Low competition & low demand	3	11
High competition & low demand	4	0

F11 — Resource & Management Capability

Range	Relative Risk Order	Score
Well Qualified	1	33

Partially Qualified	2	9
Not adequately qualified	3	-14

Quantitative Factors

✅ MASTER FINANCIAL RATIO SCORING TABLE

1. AffDueToNW (Affiliates Due to Net Worth Ratio)

Measures: *How much affiliates owe compared to company's net worth.*

Label	From	To	Points
AffDueToNW < 0.01	-9999	0.01	33
0.01 ≤ AffDueToNW < 0.1	0.01	0.1	25.6
0.1 ≤ AffDueToNW < 0.2	0.1	0.2	21
0.2 ≤ AffDueToNW < 0.66	0.2	0.66	15.5
AffDueToNW ≥ 0.66	0.66	9999	13.6

2. Current Ratio

Formula: **Current Assets / Current Liabilities**
Higher = safer liquidity.

Label	From	To	Points
CurrentRatio < 0.78	0	0.78	7.1
0.78 ≤ CurrentRatio < 0.96	0.78	0.96	9.5
0.96 ≤ CurrentRatio < 1.1	0.96	1.1	11.9
1.1 ≤ CurrentRatio < 1.47	1.1	1.47	15.7
1.47 ≤ CurrentRatio < 2.96	1.47	2.96	27.1
2.96 ≤ CurrentRatio < 5.38	2.96	5.38	34
CurrentRatio ≥ 5.38	5.38	9999	41.2

3. Debt Equity Ratio (DER)

Formula: **Total Debt / Net Worth**
Lower = safer.

Label	From	To	Points
DER < 0.16	-9999	0.16	41
0.16 ≤ DER < 0.42	0.16	0.42	33.9

0.42 ≤ DER < 1.06	0.42	1.06	21.5
1.06 ≤ DER < 1.48	1.06	1.48	18.9
1.48 ≤ DER < 1.93	1.48	1.93	14.5
1.93 ≤ DER < 4	1.93	4	10
DER ≥ 4	4	9999	7.4

4. OpsRev/ExtLiab (Operating Revenue / External Liabilities)

Higher = better repayment capacity.

Label	From	To	Points
< -1.6	-9999	-1.6	1.8
-1.6 ≤ x < -0.4	-1.6	-0.4	6.8
-0.4 ≤ x < -0.15	-0.4	-0.15	11.8
-0.15 ≤ x < -0.03	-0.15	-0.03	16.8
-0.03 ≤ x < 0.03	-0.03	0.03	21.8
0.03 ≤ x < 0.13	0.03	0.13	26.8
0.13 ≤ x < 0.45	0.13	0.45	31.8
0.45 ≤ x < 2.1	0.45	2.1	36.8
≥ 2.1	2.1	9999	41.8

5. InvAssetsToTA (Investment Assets to Total Assets)

Label	From	To	Points
< 0.09	0.01	0.09	31
0.09 ≤ x < 0.24	0.09	0.24	19.1
0.24 ≤ x < 0.64	0.24	0.64	10
≥ 0.64	0.64	1.5	6.7

6. Net Profit Margin

Label	From	To	Points
< 0	-9999	0	14.9
0 ≤ x < 0.06	0	0.06	18.8
0.06 ≤ x < 0.21	0.06	0.21	26.9

≥ 0.21	0.21	9999	35.2

7. WCT (Working Capital Turnover / Working Capital to Turnover)

Higher = better working capital health.

Label	From	To	Points
< -0.48	-9999	-0.48	11.8
-0.48 ≤ x < 0	-0.48	0	14.4
0 ≤ x < 0.41	0	0.41	17
0.41 ≤ x < 1.2	0.41	1.2	23.1
1.2 ≤ x < 1.88	1.2	1.88	27.5
1.88 ≤ x < 4.52	1.88	4.52	31.8
≥ 4.52	4.52	9999	33.6

8. d_DebtRatio (Change in Debt Ratio)

Measures: how much debt increased or decreased YoY.

Label	From	To	Points
< -0.2	-9999	-0.2	40.4
-0.2 ≤ x < -0.11	-0.2	-0.11	31.3
-0.11 ≤ x < 0.33	-0.11	0.33	20.5
≥ 0.33	0.33	9999	12.3

2. Investment Real estate & finance Template

✅ 1. FINANCIAL INFORMATION TABLE

Sr. No	Parameter	Description
1	Balance Sheet Info	Summary of assets, liabilities & equity
2	Gross Profit	Revenue – COGS
3	General & Administrative Expenses	Non-operating and administrative costs
4	Interest	Interest expense on borrowings
5	Net Profit	Profit after all expenses
6	Inventory	Total inventory held

7	Total Current Assets	Short-term assets
8	Total Assets	All assets combined
9	Total Current Liabilities	Short-term liabilities
10	Total Long Term Liabilities	Long-term debt obligations
11	Current Debt	Short-term debt obligations
12	Total Debt	Current CL + LT Liabilities
13	Total Liabilities incl. Owner's Funds	Overall obligations including capital
14	Total Bank Borrowings	Total outstanding from banks
15	Unquoted Asset	Non-listed investments
16	Unrealized Gains	Gains not yet realized
17	Operating Cash	Cash generated from operations
18	Net Worth	Shareholders' equity

✅ 2. NON-FINANCIAL INFORMATION TABLE

Sr. No	Parameter	Description
1	Constitution & Establishment	Business type & incorporation
2	Management Character / Style	Leadership credibility & governance
3	Number of Years in Business	Tenure & experience
4	Availability of Unutilized Credit Lines	Unused credit from other lenders
5	Financial Planning & Control	Internal audit & risk management quality
6	Asset Quality – Investment Diversification	Diversification of investment assets
7	Asset Quality – Investment Risk	Risk profile of investment assets
8	Asset Quality – Real Estate Concentration	Concentration & type of real estate assets

✅ 3. MANDATORY ADJUSTMENTS TABLE

Sr. No	Parameter	Description
1	Age of Financial Information	Recency of financial statements
2	Quality of Financial Information	Reliability & audit quality
3	Historical Account Performance	Past repayment history
4	Qualification of Audit Report	Nature of audit qualifications

4. DISCRETIONARY OVERRIDES TABLE (DETAILED & PROFESSIONAL)

Class	Override Reason	Max Upgrade	Max Downgrade
GEN	Management changes	2	2
GEN	Change in Regulation	1	1
GEN	Length of relationship – strong/weak	1	1
GEN	External relationship – strong group / troubled group	1	1
GEN	Deposit availability / ancillary business	1	0
GEN	Bankruptcy, Liquidation	0	3
GEN	Deterioration of other group exposures	0	2
GEN	Unresolved conflict between owners	0	2
GEN	Death of a key person	0	2
GEN	No succession plan	0	1
FIN	Income diversification	1	1
BUSS. PERF	Strategic contract signed / loss of contract	2	2
BUSS. PERF	Change in market position	2	2
BUSS. PERF	Performance vs budget (better/worse)	1	1
BUSS. PERF	Reputation (Good/Poor)	1	1
LEGAL	Ongoing legal dispute / court order	0	2
ECONOMIC	Drastic fall in capital markets	0	1
ECONOMIC	Drastic fall in oil prices	0	1
ECONOMIC	Global economic deterioration	0	2
POLITICAL	Social disturbances / uprisings	0	1
ACCOUNT CONDUCT	Persistent evergreening (>2 years)	0	1

Qualitative Factor – Relative Risk Ordering - Score

Factor ID	Factor Name	Factor Details	Relative Risk Ordering	Score
F1	**Constitution and Establishment**	Government / Semi-government	1	50
		Public Shareholding Companies	2	38

		Closed Shareholding Companies	3	25
		Partnership (with >50% owner guarantee) / Sole Proprietorship	4	13
		Other Partnership or Establishment	5	0
F2	Management Character / Style	Risk Conservative Management Approach	1	50
		Moderate & Controlled Risk Taking	2	38
		High Risk Taker (with analysis & provisions)	3	19
		Very High Risk Taker (no analysis)	4	0
F3	Number of Years in Business	More than 20 years	1	50
		10–20 years	2	38
		2–10 years	3	19
		Less than 2 years	4	0
F4	Availability of Unutilized Credit Lines	Lines available, utilization <20%	1	50
		Lines available, utilization 20–70%	2	38
		Sole Bank	3	25
		Lines available, utilization >70%	4	13
		Utilization beyond limits	5	0
F5	Existence of Financial Planning & Control	Not applicable	0	16
		Good	1	50
		Moderate	2	25
		No financial planning & control	3	0
F6	Assets Quality – Investment (Diversification)	N/A (Only for Real Estate Companies)	0	16
		Well diversified across sectors & products	1	50
		Minor concentration (Sector/Product)	2	38
		High concentration in multiple sectors/products	3	19
		Very high concentration / No information	4	0
F7	Assets Quality – Investment (Asset's Risk)	N/A (Only Real Estate)	0	16
		High quality fixed income + minor diversified equity	1	50
		Well balanced, mostly listed, low volatility	2	38
		Risky investments, equity heavy	3	19

		Highest risk assets / non-listed / no information	4	0
F8	Assets Quality – Real Estate	N/A (Only for Investment Companies)	0	16
		No diversified RE portfolio	1	50
		Some concentration in risky properties (office)	2	38
		Significant concentration in office properties	3	19
		Very high concentration / No information	4	0

Quantitative Factors

✅ 1. Current Debt to Total Debt Ratio

Label	From	To	Points
CurrentDebtToTotalDebt < 0.4	0	0.4	24.7
0.4 ≤ CurrentDebtToTotalDebt < 0.79	0.4	0.79	21.9
0.79 ≤ CurrentDebtToTotalDebt < 0.92	0.79	0.92	19.2
CurrentDebtToTotalDebt ≥ 0.92	0.92	1	10.9

✅ 2. Debt Equity Ratio (DER)

Label	From	To	Points
DER < 0.17	-999	0.17	41.4
0.17 ≤ DER < 0.38	0.17	0.38	33.9
0.38 ≤ DER < 1.02	0.38	1.02	29
1.02 ≤ DER < 1.5	1.02	1.5	18.8
1.5 ≤ DER < 2.5	1.5	2.5	11.4
DER ≥ 2.5	2.5	999	3.9

✅ 3. Interest Coverage Ratio (ICR)

Label	From	To	Points
ICR < 0	-999	0	12.2
0 ≤ ICR < 1	0	1	14
1 ≤ ICR < 1.96	1	1.96	16.4
1.96 ≤ ICR < 3.3	1.96	3.3	18.1

3.3 ≤ ICR < 5.9	3.3	5.9	22
5.9 ≤ ICR < 10.1	5.9	10.1	24.6
ICR ≥ 10.1	10.1	999	26.3

✅ 4. ROA (Return on Assets)

Label	From	To	Points
ROA < -0.09	-9999	-0.09	-4.5
-0.09 ≤ ROA < 0.01	-0.09	0.01	-0.7
0.01 ≤ ROA < 0.04	0.01	0.04	9.4
0.04 ≤ ROA < 0.07	0.04	0.07	17.1
0.07 ≤ ROA < 0.13	0.07	0.13	23.4
0.13 ≤ ROA < 0.23	0.13	0.23	40.9
ROA ≥ 0.23	0.23	999	59

✅ 5. Change in Debt Equity Ratio (Δ DER / d2_DER)

Label	From	To	Points
d2_DER < -0.6	-999	-0.6	18.8
-0.6 ≤ d2_DER < 0	-0.6	0	8
0 ≤ d2_DER < 1.03	0	1.03	-5
d2_DER ≥ 1.03	1.03	999	-11

✅ 6. Change in Quick Ratio (d2_QuickRatio)

Label	From	To	Points
d2_QuickRatio < -1.04	-999	-1.04	0
-1.04 ≤ d2_QuickRatio < -0.73	-1.04	-0.73	10
-0.73 ≤ d2_QuickRatio < 0.21	-0.73	0.21	25
d2_QuickRatio ≥ 0.21	0.21	999	40

✅ 7. Change in ROA (d2_ROA)

Label	From	To	Points

d2_ROA < -0.22	-9999	-0.22	-10.5
-0.22 ≤ d2_ROA < -0.07	-0.22	-0.07	5.9
-0.07 ≤ d2_ROA < 0	-0.07	0	13.8
0 ≤ d2_ROA < 0.03	0	0.03	17.9
0.03 ≤ d2_ROA < 0.08	0.03	0.08	23.4
0.08 ≤ d2_ROA < 0.11	0.08	0.11	33.9
d2_ROA ≥ 0.11	0.11	999	58.9

✅ 8. Unrealized Gains to Net Profit

Label	From	To	Points
Unrealized Losses (<0)	-999	0	4
0	0	0.01	30
0 – 0.3	0.01	0.3	25
0.3 – 0.5	0.3	0.5	20
0.5 – 2	0.5	999	15

✅ 9. Unquoted Assets to Total Assets

Label	From	To	Points
0	0	0	30
0% – 5%	0.0000001	0.05	25
5% – 20%	0.05	0.2	18
20% – 40%	0.2	0.4	12
40% – 70%	0.4	0.7	6
≥ 70%	0.7	99999	0

✅ 10. Operating Cash / External Liabilities

Label	From	To	Points
< -1.6	-9999999	-1.6	-4.1
-1.6 to -0.4	-1.6	-0.4	-0.1
-0.4 to -0.15	-0.4	-0.15	3.9
-0.15 to 0	-0.15	0	7.9

0 – 0.5	0	0.5	11.9
0.05 – 0.15	0.5	0.15	15.9
0.15 – 0.5	0.15	0.5	19.9
0.5 – 2	0.5	2	23.9
≥ 2	2	9999999	27.9

3. Personal Networth Declaration Borrowers Grading

✅ 1. CUSTOMER FINANCIAL INFORMATION TABLE

Sr. No	Parameter	Description
1	Cash & Bank Balances	Total liquid cash and bank deposits
2	Total Current Assets	All short-term assets expected to be converted to cash within 12 months
3	Total Assets	Sum of current + long-term assets
4	Total Current Liabilities	Short-term liabilities due within 12 months
5	Total Long-Term Liabilities	Long-term financial obligations
6	Total Liabilities	Current + long-term liabilities
7	Net Worth	Shareholders' equity / owners' funds
8	Turnover	Total revenue / sales
9	Cost of Sales	Direct cost associated with generating sales
10	Gross Profit	Turnover – Cost of Sales
11	General & Administrative Expenses	Overheads and administrative expenses
12	Interest	Borrowing costs
13	Net Profit	Profit after all expenses

✅ 2. NON-FINANCIAL INFORMATION TABLE

Sr. No	Parameter	Description
1	Number of Years in Business	Duration of business operations
2	Existence of Legal Heirs	Succession planning existence & readiness

3	Management Character & Style	Governance quality and managerial behavior
4	Availability of Additional Financial Resources	Ability to raise funds during stress
5	Income Diversification	Diversity of income streams
6	Years in Relationship	Length of banking relationship
7	Accessibility	Ease of communication & collaboration
8	Credit History (Track Record)	Past repayment performance
9	Unquoted Assets	Non-listed / illiquid asset holdings

Qualitative Factor – Relative Risk Ordering - Score

✅ **MASTER TABLE — COMPANY SPECIFIC & QUALITATIVE FACTORS**

Factor ID	Factor Name	Factor Details	Relative Risk Ordering	Score
F1	Number of Years in Business	More than 10 years	1	100
		6 – 10 Years	2	75
		2 – 5 Years	3	50
		New to industry (< 2 years), but relevant experience from other fields	4	25
		No or very limited relevant experience	5	0
F2	Existence of Legal Heirs	Client's age < 60 or clear succession plan with no legal risks	1	100
		Client's age ≥ 60 and unclear succession plan, possible legal risks	2	50
		Client's age ≥ 60 and no succession plan → high legal succession risk	3	0
F3	Management Character & Style	Cautious management with conservative risk appetite	1	100
		Balanced risk-taking and moderate risk appetite	2	75
		Aggressive but with high risk appetite	3	25
		Uncontrolled risk-taking (no analysis) and very high-risk attitude	4	0

F4	Availability of Additional Financial Resources	Credit lines available across lenders (<20% utilized)	1	100
		Credit lines available (20–70% utilized) OR CBK sole lender but <20% utilization	2	75
		Credit lines available but >70% utilized OR CBK sole lender (20–70% utilized)	3	50
		CBK sole lender; only small portion of line remains unutilized (>70% used)	4	25
		Client exceeded limits with CBK or other lenders	5	0
F5	Income Diversification	Strongly diversified across countries/regions/sectors	1	100
		Diversified across multiple countries or sectors	2	75
		Slight diversification but heavy dependency on one industry	3	37
		Concentrated in one sector and one region	4	0
F6	Years in Relationship	> 5 years	1	100
		3 – 5 years	2	75
		2 – 3 years	3	50
		1 – 2 years	4	25
		New to bank (≤ 1 year)	5	0
F7	Accessibility	Professional and accessible to RM	1	100
		Business manager is accessible	2	75
		Inaccessible temporarily (travel/lack of backup)	3	50
		Infrequent contact with RM		25
		Difficult to access / avoids bank	4	0
F8	Credit History (Track Record)	No excess drawings, delays, or breaches in 3 years	1	100
		Occasional breaches but resolved within one month	2	50
		New to bank (≤ 1 year), insufficient history	3	25

		Repeatedly late payments in last 3 years	4	0
F9	Unquoted Assets	<25% unquoted assets	1	100
		25–50% unquoted assets	2	67
		50–75% unquoted assets	3	33
		75–100% unquoted assets	4	0

Quantitative Factors

✅ 1. Debt Equity Ratio (DE)

Label	From	To	Points
DE < 8%	0	0.08	100
8% ≤ DE < 16%	0.08	0.16	75
16% ≤ DE < 29%	0.16	0.29	50
29% ≤ DE < 59%	0.29	0.59	25
DE ≥ 59%	0.59	999999999	0

✅ 2. Cash / Current Liabilities (Cash/CL)

Label	From	To	Points
Cash/CL < 0.0047	0	0.004688566	0
0.0047 ≤ Cash/CL < 0.025	0.004688566	0.025	25
0.025 ≤ Cash/CL < 0.100775194	0.025	0.100775194	50
0.100775194 ≤ Cash/CL < 0.638226402	0.100775194	0.638226402	75
Cash/CL ≥ 0.638226402	0.638226402	9999999999	100

✅ 3. Interest Coverage Ratio (ICR)

Label	From	To	Points
ICR < 1.48	-99999999999	1.48159344	0
1.48 ≤ ICR < 2.97	1.48159344	2.972687772	25
2.97 ≤ ICR < 5.66	2.972687772	5.658536585	50
5.66 ≤ ICR < 11.63	5.658536585	11.625	75
ICR ≥ 11.63	11.625	999999999	100

4. EBIT / Total Current Liabilities (EBIT/TCL)

Label	From	To	Points
EBIT/TCL < 0.09	-99999999999	0.091104909	0
0.09 ≤ EBIT/TCL < 0.18	0.091104909	0.18245093	25
0.18 ≤ EBIT/TCL < 0.39	0.18245093	0.390353634	50
0.39 ≤ EBIT/TCL < 0.60	0.390353634	0.603745918	75
EBIT/TCL ≥ 0.60	0.603745918	999999999	100

5. LN(Networth)

(Natural log of Net Worth)

Label	From	To	Points
LN(Networth) < 7.12	-99999999	7.116471779	0
7.12 ≤ LN(Networth) < 8	7.116471779	8.003664679	25
8 ≤ LN(Networth) < 8.98	8.003664679	8.982886178	50
8.98 ≤ LN(Networth) < 10.12	8.982886178	10.1184078	75
LN(Networth) ≥ 10.12	10.1184078	99999999999	100

6. Growth in Net Worth (Δ Net Worth)

Label	From	To	Points
d_NW < -0.11	-99999999	-0.112212741	0
-0.11 ≤ d_NW < -0.006	-0.112212741	-0.006246189	25
-0.006 ≤ d_NW < 0.064	-0.006246189	0.064787206	50
0.064 ≤ d_NW < 0.16	0.064787206	0.162455664	75
d_NW ≥ 0.16	0.162455664	9999999999	100

4. Trading & Manufacturing Template

1. FINANCIAL INFORMATION TABLE

Sr. No	Parameter	Description
1	Revenue	Total sales/turnover for the period

2	Cost of Goods Sold	Direct cost of producing goods/services sold
3	Net Profit	Profit after all expenses and taxes
4	Total Current Assets	Liquid and short-term assets realizable within a year
5	Affiliates Due	Receivables owed by group or affiliate entities
6	Investment Assets	Investments and financial holdings
7	Total Assets	Total current + non-current assets
8	Total Current Liabilities	Obligations due within 12 months
9	Total Debt (CL + LT Liabilities)	Combined short-term and long-term debt
10	Total Bank Borrowings	All outstanding bank borrowings
11	Total Liabilities incl. Owner's Funds	Total liabilities + shareholders' funds
12	Net Worth	Shareholders' equity
13	Operating Cash	Operating cash flow generated by business

✅ 2. NON-FINANCIAL INFORMATION TABLE

Sr. No	Parameter	Description
1	Constitution and Establishment	Business type, legal status, and founding details
2	Number of Years in Business	Duration of operations indicating stability
3	Unutilized Credit Limits	Available yet unused credit lines from other banks
4	Financial Planning & Control	Quality of internal audit and risk management
5	Position in the Market	Competitive strength & market presence
6	Competition / Supply & Demand	Market competitiveness and demand cycles
7	Sensitivity to Economic Shocks	Stability under economic disruptions
8	Customer Base	Spread, quality, and dependability of customers
9	Type of Debtors / Quality of Receivables	Risk level & collectability of receivables
10	Distribution Channel	Strength of sales/distribution infrastructure
11	Price Volatility Management	Ability to manage fluctuating commodity/market prices

✅ 3. MANDATORY ADJUSTMENTS TABLE

Sr. No	Parameter	Description
1	Age of Financial Information	How recent and updated financials are
2	Quality of Financial Information	Accuracy, reliability, and audit grade
3	Historical Account Performance	Past repayment & account behavior
4	Qualification of Audit Report	Whether auditor has raised any qualifications

✅ 4. DISCRETIONARY OVER-RIDES TABLE

Class	Override Reason	Max Upgrade	Max Downgrade
GEN	Management changes	2	2
GEN	Change in Regulation	1	1
GEN	Length of Relationship – Strong/Weak	1	1
GEN	External Relationship (Strong group / troubled group)	1	1
GEN	Deposit availability / Ancillary business	1	0
GEN	Bankruptcy, Liquidation	0	3
GEN	Deterioration of other group exposures	0	2
GEN	Unresolved conflict between owners	0	2
GEN	Death of a key person	0	2
GEN	Non-existence of succession plan	0	1
FIN	Income Diversification	1	1
BUSS. PERF	Significant contract signed / loss of major contract	2	2
BUSS. PERF	Change in Market Position	2	2
BUSS. PERF	Performance vs Budget (Better/Worse)	1	1
BUSS. PERF	Reputation (Strong/Poor)	1	1
LEGAL	Ongoing legal dispute / court order	0	2
ECONOMIC	Drastic fall in capital markets	0	1
ECONOMIC	Drastic fall in oil prices	0	1
ECONOMIC	Global economic deterioration	0	2
POLITICAL	Social disturbances / uprisings	0	1

Qualitative Factor – Relative Risk Ordering - Score

MASTER TABLE — COMPANY SPECIFIC, BUSINESS SPECIFIC & SECTOR-SPECIFIC FACTORS

F1 — Constitution and Establishment

Factor ID	Factor Name	Factor Details	Relative Risk Ordering	Score
F1	Constitution & Establishment	Government / Semi-government	1	29
		Public Shareholding Companies	2	22
		Closed Shareholding Companies	3	15
		Partnership with >50% personal guarantee / Sole Proprietorship	4	7
		Other Partnership or Establishment	5	0

F2 — Number of Years in Business

Factor ID	Factor Name	Factor Details	Relative Risk Ordering	Score
F2	Number of Years in Business	More than 20 years	1	29
		10–20 years	2	22
		2–10 years	3	11
		Less than 2 years	4	0

F3 — Availability of Unutilized Credit Lines

Factor ID	Factor Name	Factor Details	Relative Risk Ordering	Score
F3	Unutilized Credit Limits / Lines	Lines available, utilization <20%	1	27
		Lines available, utilization 20–70%	2	22
		Sole bank	3	18
		Lines available, utilization >70%	4	14
		Utilization exceeded limits	5	9

F4 — Financial Planning & Internal Controls

Factor ID	Factor Name	Factor Details	Relative Risk Ordering	Score
F4	Financial Planning & Control	Not applicable	0	23
		Good	1	28
		Moderate	2	16
		No planning/control	3	5

F5 — Position in the Market

Factor ID	Factor Name	Factor Details	Relative Risk Ordering	Score
F5	Position in the Market	Market Leaders	1	29
		Strong position among peers	2	22
		Average position	3	11
		New entrants	4	0

F6 — Competition / Supply & Demand

Factor ID	Factor Name	Factor Details	Relative Risk Ordering	Score
F6	Competition / Supply & Demand	Low competition & high demand	1	28
		High competition & high demand	2	22
		Low competition & low demand	3	13
		High competition & low demand	4	5

F7 — Sensitivity to Economic Shocks

Factor ID	Factor Name	Factor Details	Relative Risk Ordering	Score
F7	Economic Sensitivity	Unlikely to be affected	1	29
		Minor impact possible	2	22
		Likely to see impact	3	11
		Highly sensitive	4	0

F8 — Customer Base

Factor ID	Factor Name	Factor Details	Relative Risk Ordering	Score
F8	Customer Base	Well-diversified and stable	1	29
		Good customer base above average	2	22
		Small & stable	3	11
		Very small & unstable	4	0

F9 — Quality of Receivables (Debtor Type)

Factor ID	Factor Name	Factor Details	Relative Risk Ordering	Score
F9	Debtor Quality	Government / Semi-government entities	1	29
		Large Corporates	2	22
		SMEs	3	11
		Individuals	4	0

F10 — Distribution Channel

Factor ID	Factor Name	Factor Details	Relative Risk Ordering	Score
F10	Distribution Channel	Effective	1	26
		Limited	2	12

F11 — Price Volatility Management

Factor ID	Factor Name	Factor Details	Relative Risk Ordering	Score
F11	Price Volatility Management	Not applicable	0	23
		Yes	1	29
		No	2	0

Quantitative Factors

✅ MASTER FINANCIAL RATIO SCORING TABLE

1. Affiliates Due to Net Worth (AffDueToNW)

Label	From	To	Points
AffDueToNW < 0.01	-9999	0.01	33
0.01 ≤ AffDueToNW < 0.1	0.01	0.1	25.6
0.1 ≤ AffDueToNW < 0.2	0.1	0.2	21
0.2 ≤ AffDueToNW < 0.66	0.2	0.66	15.5
AffDueToNW ≥ 0.66	0.66	9999	13.6

2. Current Ratio

Label	From	To	Points
CurrentRatio < 0.78	0	0.78	7.1
0.78 ≤ CurrentRatio < 0.96	0.78	0.96	9.5
0.96 ≤ CurrentRatio < 1.1	0.96	1.1	11.9
1.1 ≤ CurrentRatio < 1.47	1.1	1.47	15.7
1.47 ≤ CurrentRatio < 2.96	1.47	2.96	27.1
2.96 ≤ CurrentRatio < 5.38	2.96	5.38	34
CurrentRatio ≥ 5.38	5.38	9999	41.2

3. Debt Equity Ratio

Label	From	To	Points
DER < 0.16	-9999	0.16	41
0.16 ≤ DER < 0.42	0.16	0.42	33.9
0.42 ≤ DER < 1.06	0.42	1.06	21.5
1.06 ≤ DER < 1.48	1.06	1.48	18.9
1.48 ≤ DER < 1.93	1.48	1.93	14.5
1.93 ≤ DER < 4	1.93	4	10
DER ≥ 4	4	9999	7.4

4. Operating Revenue to External Liabilities (OpsRev/ExtLiab)

Label	From	To	Points
< -1.6	-9999	-1.6	1.8

-1.6 ≤ Ratio < -0.4	-1.6	-0.4	6.8
-0.4 ≤ Ratio < -0.15	-0.4	-0.15	11.8
-0.15 ≤ Ratio < -0.03	-0.15	-0.03	16.8
-0.03 ≤ Ratio < 0.03	-0.03	0.03	21.8
0.03 ≤ Ratio < 0.13	0.03	0.13	26.8
0.13 ≤ Ratio < 0.45	0.13	0.45	31.8
0.45 ≤ Ratio < 2.1	0.45	2.1	36.8
≥ 2.1	2.1	9999	41.8

5. Investment Assets to Total Assets (InvAssetsToTA)

Label	From	To	Points
< 0.09	0.01	0.09	31
0.09 ≤ Ratio < 0.24	0.09	0.24	19.1
0.24 ≤ Ratio < 0.64	0.24	0.64	10
≥ 0.64	0.64	1.5	6.7

6. Net Profit Margin (NPM)

Label	From	To	Points
NPM < 0	-9999	0	14.9
0 ≤ NPM < 0.06	0	0.06	18.8
0.06 ≤ NPM < 0.21	0.06	0.21	26.9
≥ 0.21	0.21	9999	35.2

7. Working Capital Turnover (WCT)

Label	From	To	Points
WCT < -0.48	-9999	-0.48	11.8
-0.48 ≤ WCT < 0	-0.48	0	14.4
0 ≤ WCT < 0.41	0	0.41	17
0.41 ≤ WCT < 1.2	0.41	1.2	23.1
1.2 ≤ WCT < 1.88	1.2	1.88	27.5
1.88 ≤ WCT < 4.52	1.88	4.52	31.8

WCT ≥ 4.52	4.52	999	33.6

8. Change in Debt Ratio (Δ Debt Ratio)

Label	From	To	Points
d_DebtRatio < -0.2	-9999	-0.2	40.4
-0.2 ≤ d_DebtRatio < -0.11	-0.2	-0.11	31.3
-0.11 ≤ d_DebtRatio < 0.33	-0.11	0.33	20.5
d_DebtRatio ≥ 0.33	0.33	9999	12.3

Final Rating Master Table

Score Range	Grade
0 – 139	8
140 – 159	7
160 – 174	6
175 – 189	5
190 – 204	4
205 – 214	3
215 – 224	2
225 and above	1

Note – Non-Performing Entity Classification Logic

In the Credit Assessment System, a provision is available to classify an entity as Non-Performing through a dedicated toggle option. This action is restricted and can only be performed by users assigned with specially designated roles with appropriate authorization rights.

Once an entity is marked as Non-Performing, the system shall override the regular scoring mechanism and assign a final grade based on the selected Asset Classification from the drop-down provided during the classification process, as per the following logic:

Asset Classification Selected	Final Grade Assigned by System
Sub-Standard	Grade 9
Doubtful	Grade 10

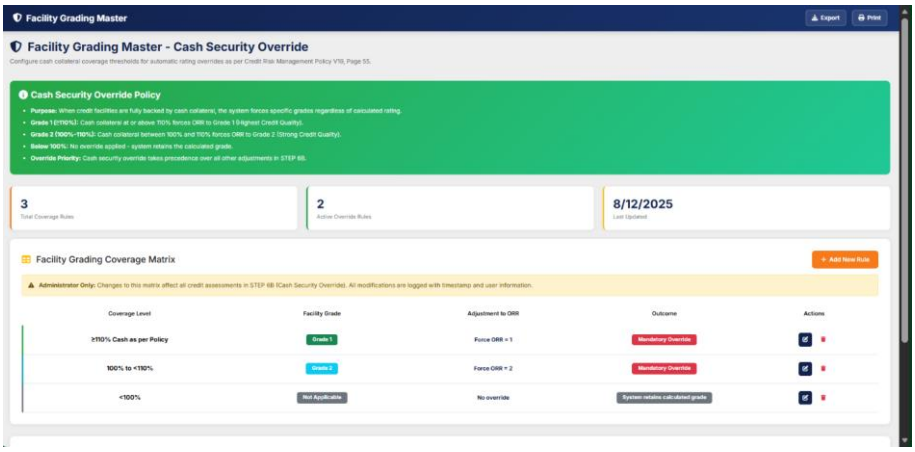
Asset Classification Selected	Final Grade Assigned by System
Loss Asset	Grade 11

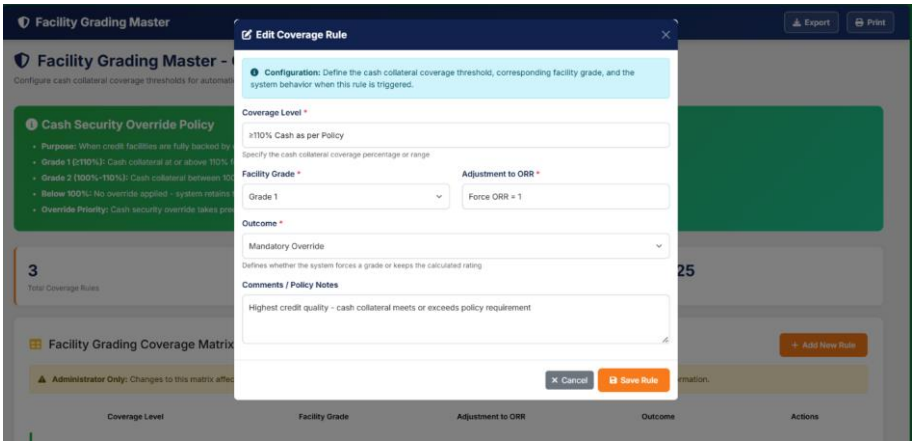
Upon assignment of any of the above grades (9, 10, or 11), the entity shall be treated as Non-Performing and excluded from standard credit score calculation, risk scoring workflows, and automated eligibility assessments.

Reference –

RE_ Credit Risk Rating Engine - Commercial Bank of Kuwait Requirements Gathering Sessions (Onsite).zip

Facility Grading Master - Cash Security Override





The **Facility Grading Master - Cash Security Override** screen enables authorized administrators to configure and maintain cash collateral coverage thresholds that trigger automatic rating overrides during credit assessment. This functionality implements the facility grading requirements outlined in the Credit Risk Management Policy V19, Page 55, Appendix 4, which assesses facility strength based on collateral and credit seniority for Loss Given Default (LGD) estimation.

Business Purpose

When credit facilities are fully backed by cash collateral, the system enforces specific grades regardless of the calculated rating to reflect the extremely low severity of potential loss. This override mechanism ensures that facilities with sufficient cash coverage receive appropriate risk grades aligned with regulatory and policy requirements.

Functional Requirements

Coverage Thresholds and Override Logic

The screen manages a coverage matrix with the following automated grade assignments:

- **Grade 1 (≥110% coverage)**: Cash collateral at or above 110% of the facility limit forces the Obligor Risk Rating (ORR) to Grade 1 (Highest Credit Quality/Extremely Low severity)
- **Grade 2 (100%-110% coverage)**: Cash collateral between 100% and 110% forces ORR to Grade 2 (Strong Credit Quality/Very Low severity)
- **Below 100% coverage**: No override applied; the system retains the originally calculated grade

Coverage Matrix Administration

The screen displays a **Facility Grading Coverage Matrix** table showing:

Column	Description
Coverage Level	Cash collateral percentage range (e.g., ≥110%, 100%-110%)
Facility Grade	Assigned grade (1-7) based on coverage
Adjustment to ORR	Override action ("Change ORR to 1" or "Change ORR to 2")
Outcome	Descriptive result of the override
Actions	Administrative functions (Edit/Delete)

The screen displays summary metrics including Total Coverage Rules, Active Override Rules, and Last Updated timestamp.

Integration Points

Credit Assessment Workflow Integration

This configuration is implemented in **STEP 6B: Facility Grading Override** of the credit assessment workflow. The override applies only when:

- User selects "Cash Security = YES" in STEP 1 (Entity Details)
- The system automatically calculates coverage as: (Cash Collateral Amount ÷ Total Credit Limit) × 100

- The entity is not classified as Non-Performing (NP), which are excluded from override eligibility

Override Precedence

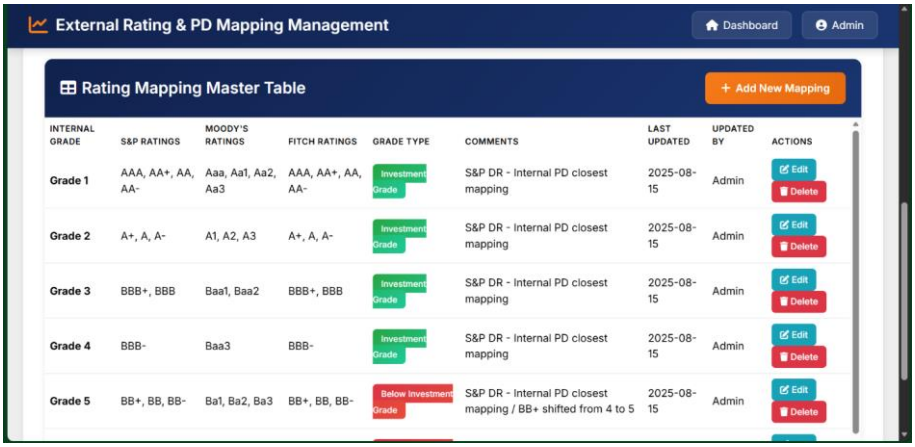
Cash security override takes final precedence over all mandatory and discretionary adjustments in the rating calculation process.

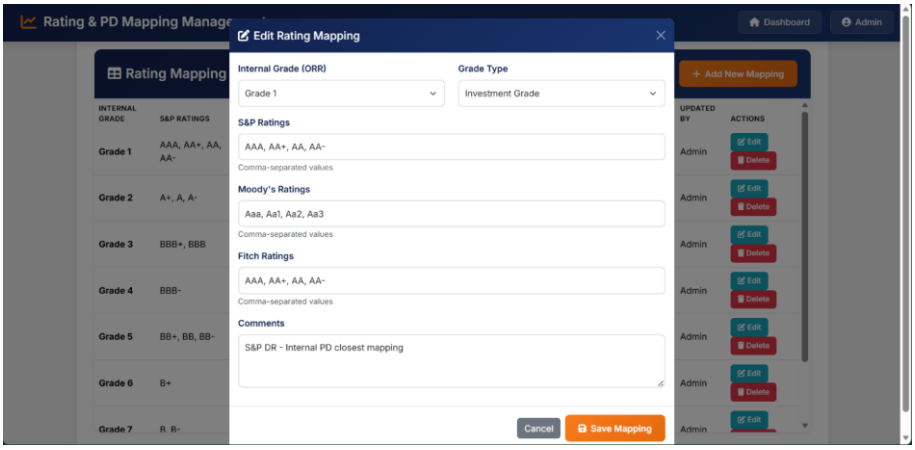
Access Control and Audit

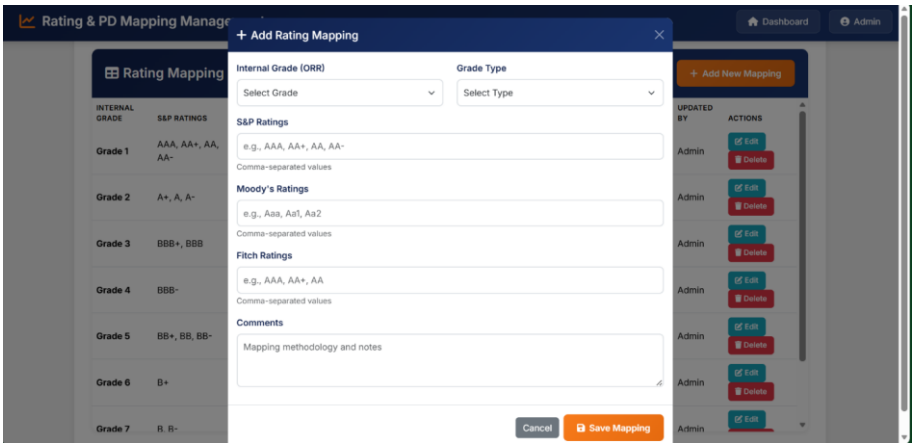
The screen is **Administrator Only**, as changes affect all credit assessments system-wide. All modifications to the coverage matrix are logged with timestamp and user information to maintain a complete audit trail.

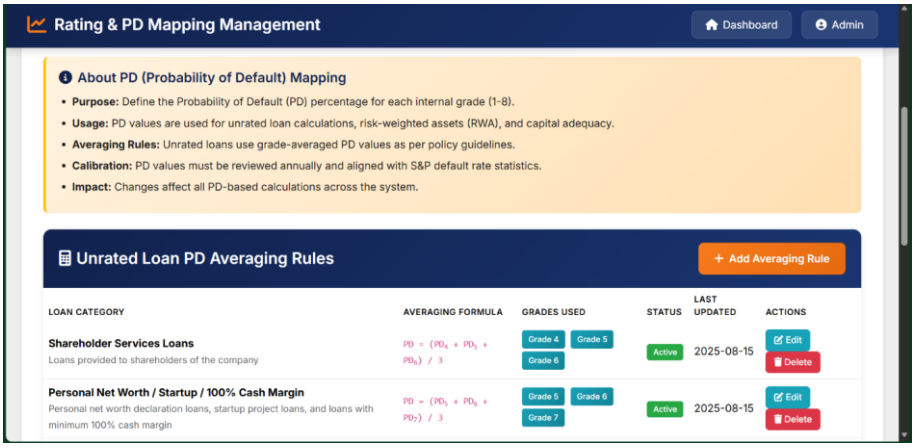
5 Overrides to Rating for cash Margin.pdf

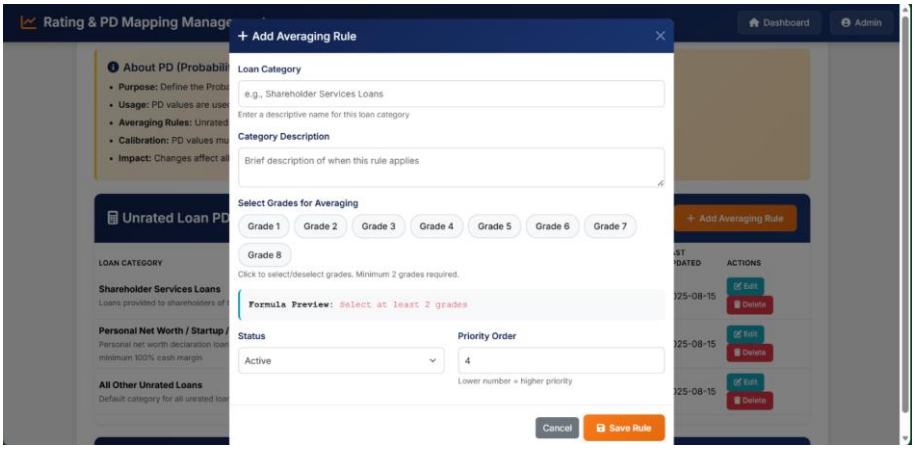
External Rating Mapping & PD Management

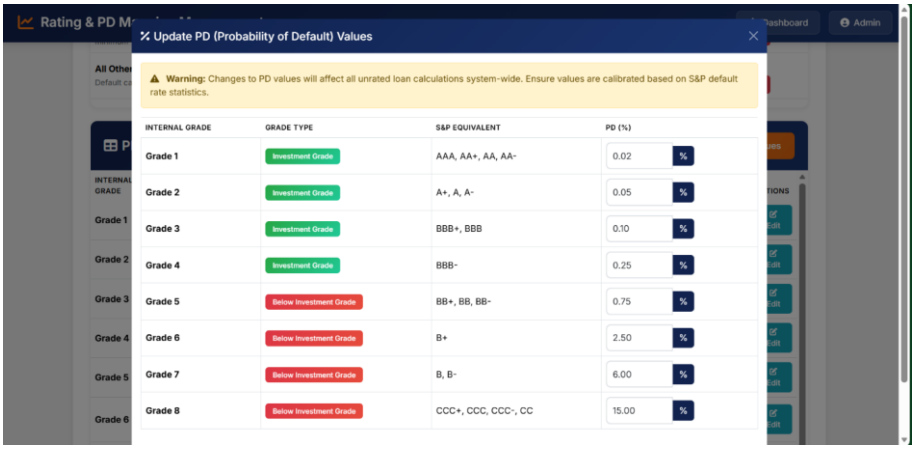







Rating & PD Mapping Management
Dashboard
Admin
About PD (Probability of Default) Mapping
Purpose: Define the Probability of Default (PD) percentage for each internal grade (1-8).
Usage: PD values are used for unrated loan calculations, risk-weighted assets (RWA), and capital adequacy.
Averaging Rules: Unrated loans use grade-averaged PD values as per policy guidelines.
Calibration: PD values must be reviewed annually and aligned with S&P default rate statistics.
Impact: Changes affect all PD-based calculations across the system.
Unrated Loan PD Averaging Rules
+ Add Averaging Rule
LOAN CATEGORY
AVERAGING FORMULA
GRADES USED
STATUS
LAST UPDATED
ACTIONS
Shareholder Services Loans
Loans provided to shareholders of the company
PD = (PD4 + PD5 + PD6) / 3
Grade 4
Grade 5
Grade 6
Active
2025-08-15
Edit
Delete
Personal Net Worth / Startup / 100% Cash Margin
Personal net worth declaration loans, startup project loans, and loans with minimum 100% cash margin
PD = (PD5 + PD6 + PD7) / 3
Grade 5
Grade 6
Grade 7
Active
2025-08-15
Edit
Delete


+ Add Averaging Rule
Loan Category
e.g., Shareholder Services Loans
Enter a descriptive name for this loan category
Category Description
Brief description of when this rule applies
Select Grades for Averaging
Grade 1
Grade 2
Grade 3
Grade 4
Grade 5
Grade 6
Grade 7
Grade 8
Click to select/deselect grades. Minimum 2 grades required.
Formula Preview: Select at least 2 grades
Status
Active
Priority Order
4
Lower number = higher priority
Cancel
Save Rule


Update PD (Probability of Default) Values
Warning: Changes to PD values will affect all unrated loan calculations system-wide. Ensure values are calibrated based on S&P default rate statistics.
INTERNAL GRADE
GRADE TYPE
S&P EQUIVALENT
PD (%)
Grade 1
Investment Grade
AAA, AA+, AA, AA-
0.02
Grade 2
Investment Grade
A+, A, A-
0.05
Grade 3
Investment Grade
BBB+, BBB
0.10
Grade 4
Investment Grade
BBB-
0.25
Grade 5
Below Investment Grade
BB+, BB, BB-
0.75
Grade 6
Below Investment Grade
B+
2.50
Grade 7
Below Investment Grade
B, B-
6.00
Grade 8
Below Investment Grade
CCC+, CCC, CCC-, CC
15.00

Overview

The **External Rating Mapping Management** screen enables authorized administrators to configure and maintain mappings between external credit agency ratings (S&P, Moody's, Fitch) and the organization's internal Obligor Risk Rating (ORR) grades. This master configuration ensures consistent translation of external credit assessments into the internal 8-grade rating scale used throughout the credit risk management framework.

Business Purpose

The mapping functionality converts external agency ratings into internal ORR grades (1-8) based on Probability of Default (PD) alignment as defined in the Credit Risk Management Policy V19, Page 79. This standardization enables the organization to leverage external credit assessments from recognized rating agencies while maintaining consistency with internal risk classification and capital allocation requirements.

Functional Requirements

Rating Grade Classification

The system categorizes internal grades into two risk tiers:

- **Investment Grade (Grades 1-4)**: Represents lower credit risk with higher quality obligors
- **Below Investment Grade (Grades 5-8)**: Represents speculative or high-risk ratings with elevated default probability

Rating Mapping Master Table

The screen displays a comprehensive **Rating Mapping Master Table** with the following structure:

Column	Description
Internal Grade	Internal ORR grade (1-8)
S&P Ratings	Mapped Standard & Poor's ratings for the grade
Moody's Ratings	Mapped Moody's ratings equivalent to S&P
Fitch Ratings	Mapped Fitch ratings equivalent to S&P
Grade Type	Classification (Investment Grade / Below Investment Grade)
Comments	Rationale and mapping methodology notes
Last Updated	Timestamp of last modification
Updated By	User who performed the last update
Actions	Administrative functions (Edit/Delete)

Standard Mapping Configuration

Based on S&P default rate analysis and PD closest mapping methodology, the standard configuration includes:

- **Grade 1**: AAA, AA+, AA, AA- (Investment Grade)
- **Grade 2**: A+, A, A- (Investment Grade)
- **Grade 3**: BBB+, BBB (Investment Grade)

- **Grade 4**: BBB- (Investment Grade)
- **Grade 5**: BB+, BB, BB- (Below Investment Grade)
- **Grade 6**: B+ (Below Investment Grade)
- **Grade 7**: B, B- (Below Investment Grade)
- **Grade 8**: CCC+, CCC, CCC-, CC (Below Investment Grade)

Integration Points

Credit Assessment Workflow

External rating mappings are utilized when borrowers have published ratings from S&P, Moody's, or Fitch. The system automatically converts the external rating to the corresponding internal ORR grade during credit assessment processing

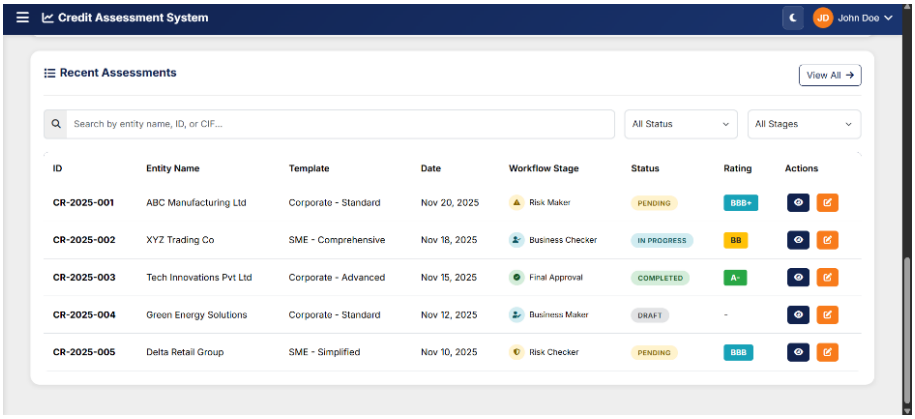
Default Probability (PD) Assignment

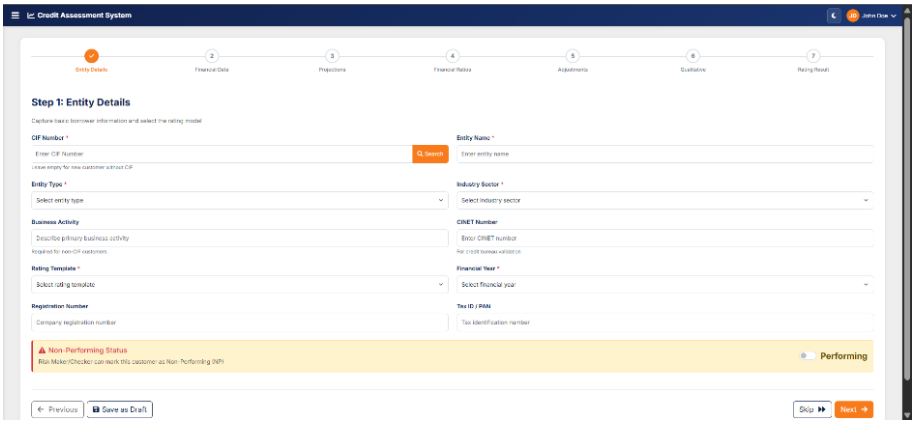
For unrated entities, the mapping table supports PD calculation through grade averaging:

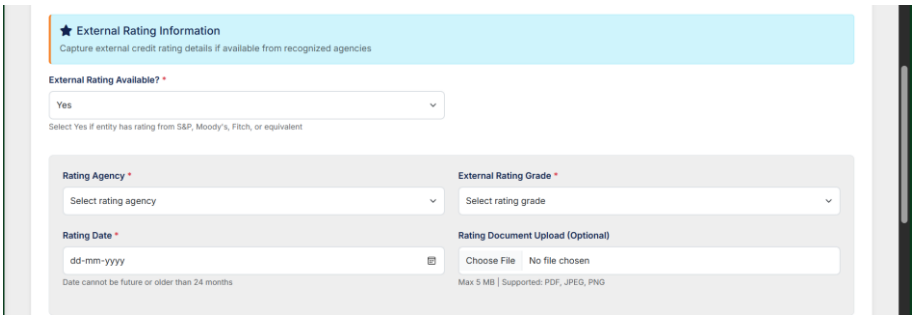
- **Shareholder services loans**: Average PD of grades 4, 5, and 6
- **Personal net worth declaration loans, startup projects, 100% cash margin loans**: Average PD of grades 5, 6, and 7
- **All other unrated loans**: Average PD of grades 6, 7, and 8

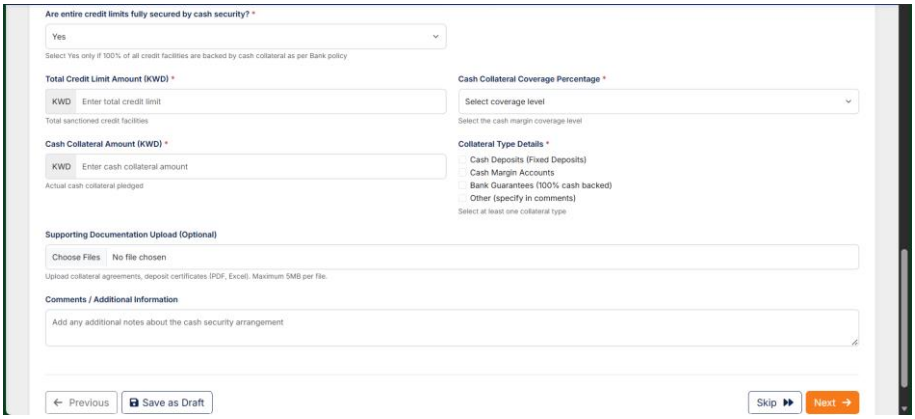
4.5. Credit Assessment

The Credit Assessment Module follows a structured, seven-stage stepper workflow designed to ensure completeness, transparency, and auditability across Business, Risk, and Approval units. Each step captures specific information, validates mandatory fields, and locks previously completed stages to maintain process integrity. The workflow supports both CIF-based and non-CIF customers and integrates automated rules such as financial ratio computation, rating model selection, and NP (Non-Performing) customer restrictions.


Credit Assessment System
JD John Doe
Recent Assessments
View All
Search by entity name, ID, or CIF...
All Status
All Stages
ID
Entity Name
Template
Date
Workflow Stage
Status
Rating
Actions
CR-2025-001
ABC Manufacturing Ltd
Corporate - Standard
Nov 20, 2025
Risk Maker
PENDING
BBB+
CR-2025-002
XYZ Trading Co
SME - Comprehensive
Nov 18, 2025
Business Checker
IN PROGRESS
BB
CR-2025-003
Tech Innovations Pvt Ltd
Corporate - Advanced
Nov 15, 2025
Final Approval
COMPLETED
A-
CR-2025-004
Green Energy Solutions
Corporate - Standard
Nov 12, 2025
Business Maker
DRAFT
-
CR-2025-005
Delta Retail Group
SME - Simplified
Nov 10, 2025
Risk Checker
PENDING
BBB


Credit Assessment System
Step 1: Entity Details
CIF Number *
Entity Name *
Entity Type *
Industry Sector *
Business Activity
CINET Number
Rating Template *
Financial Year *
Registration Number
Tax ID / PAN
Non-Performing Status
Performing
Previous
Save as Draft
Skip
Next


External Rating Information
Capture external credit rating details if available from recognized agencies
External Rating Available? *
Yes
Select Yes if entity has rating from S&P, Moody's, Fitch, or equivalent
Rating Agency *
Select rating agency
External Rating Grade *
Select rating grade
Rating Date *
dd-mm-yyyy
Date cannot be future or older than 24 months
Rating Document Upload (Optional)
Choose File
No file chosen
Max 5 MB | Supported: PDF, JPEG, PNG



STEP 1 — ENTITY DETAILS

(Incorporating External Rating Section, Facility Security Section & Mapping Logic)

Step 1 captures all foundational and regulatory information required to initiate a credit assessment. The system validates entity existence, onboarding readiness, applicable templates, and mandatory policy-driven decision fields. Completion of Step 1 locks structural data and enables financial inputs.

1. CIF Search & Entity Auto-Population

- When a valid CIF number is entered:
  - System fetches historical entity information and past credit assessment data.
  - Retrieved values include demographics, regulatory identifiers, and prior ratings.
  - Historical data is displayed in an information banner for comparison.

If no historical data is found, fields remain editable and the user continues manually.

2. Mandatory Entity & Regulatory Details

Users must complete:

- Entity Type
- Industry Sector
- CINET
- Tax Registration ID
- Registration Number
- Business Activity Classification

Entity Type and Industry Sector selections drive downstream template availability.

3. Rating Template Selection

User selects the applicable rating model template (e.g., *Trading & Manufacturing*, *Contracting & Services*, etc.).
Once Step 1 is completed:

- Template becomes locked.
- Rating calculation framework for the next Step gets initialised.

4. NP (Non-Performing) Status Controls

- Risk Maker/Checker can mark an entity as NP.
- When NP = Yes:
  - System auto-assigns Internal Rating 9 / 10 / 11 based on classification rules.
  - The customer is marked FROZEN.
  - Rating templates for quantitative/qualitative assessment are disabled.
  - Reason for NP flagging is mandatory.
- When NP is cleared by Checker, the system re-enables templates.

---

5. External Rating Information (NEW – Mandatory Decision Section)

Mandatory Primary Field

External Rating Available? (Yes/No)

- Default: No
- Mandatory: Yes

When "Yes" is selected, the following conditional mandatory fields appear.

5.1 Rating Agency (Dropdown – Mandatory)

- S&P
- Moody's
- Fitch Ratings
- Equivalent approved agencies

5.2 External Rating Grade (Dropdown – Mandatory)

Grades sourced from the client's External Rating Master: AAA, AA+, AA, AA-, A+, A, A-, BBB+, BBB, BBB-, BB+, BB, BB-, B+, B, B-, CCC+, CCC, CCC-, CC, C.

5.3 Rating Date (Mandatory)

- Cannot be a future date
- Must be ≤ 24 months old

If date exceeds 24 months → system displays warning.

5.4 Rating Document Upload (Optional)

- Allowed: PDF, JPEG, PNG
- Max size: 5 MB

5.5 External Rating Mapping Logic (Internal Grade Assignment)

Using the client's S&P Mapping Table:
(Direct extract from Credit Risk Management Policy)

4 Mapping of External Rating to...

External Grade Group	Internal ORR
AAA, AA+, AA, A	ORR 1
A+, A, A–	ORR 2
BBB+, BBB	ORR 3
BBB–	ORR 4
BB+, BB, BB–	ORR 5
B+	ORR 6
B, B–	ORR 7
CCC+, CCC, CC, C	ORR 8

System Behaviour

- Once the External Grade is selected, the system auto-maps to the corresponding Internal ORR.
- If the user chooses not to use the external rating in the final determination:
  - System displays a warning message:
    "External rating available but not applied. Please justify."

Warning justification becomes a mandatory text field.

6. Facility Security Information (NEW – Mandatory Decision Section)

(Appears immediately after External Rating Information section)

Primary Field:

Are entire credit limits fully secured by cash security? (Yes/No)

- Default: No
- Mandatory
- Help text:
  "Select Yes only if 100% of all credit facilities are backed by cash collateral as per Bank policy."

When "Yes" is selected, the following conditional fields appear.

6.1 Total Credit Limit Amount (KWD – Mandatory)

- Numeric
- Must be > 0

6.2 Cash Collateral Coverage Percentage (Mandatory)

Dropdown options:

- ≥110% (Cash as per Policy)
- 100% to <110% (Cash at 100% of Facility)
- <100% (Partial cash security – Not eligible for override)

Help text explains the selection criteria.

6.3 Cash Collateral Amount (KWD – Mandatory)

- Auto-calculated = Total Limit × Coverage% (editable per design rules)
- Validated against Total Limit.

6.4 Collateral Type (Mandatory Multi-Select)

Options:

- Cash Deposits / Fixed Deposits
- Cash Margin Accounts
- 100% Cash-backed Bank Guarantees
- Other (with free text field)

6.5 Supporting Documentation Upload (Optional)

- PDF or Excel
- Multiple files allowed

6.6 Cash Security Validation Logic

1. **If Coverage <100% AND Cash Security = Yes**
   → System throws error:
   "Cash security override requires minimum 100% coverage. Please review or select 'No'."
2. **If Collateral Amount < Total Limit**
   → Coverage cannot be marked as 100% or ≥110%.
3. **If user changes Cash Security from Yes → No after data entry**
   → Confirmation dialog:
   "Cash security override will be removed. Continue?"

7. Completion Rules for Step 1

Step 1 can only be submitted if:

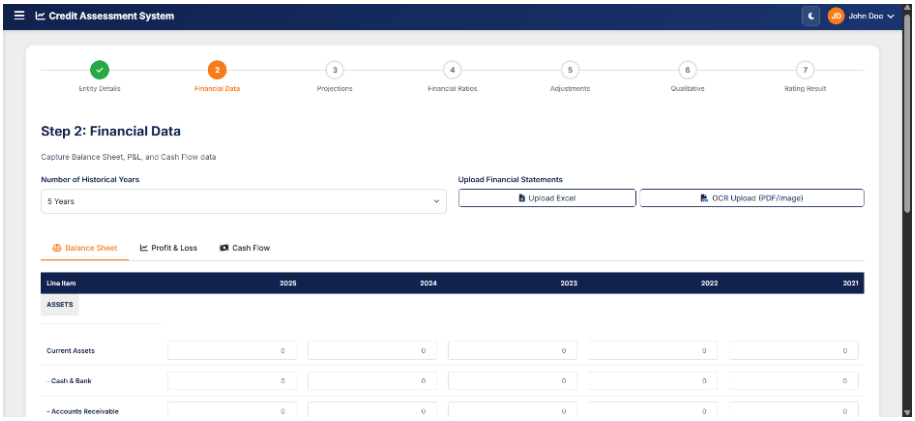
- All mandatory entity fields are completed.
- External Rating conditional mandatory fields are validated when applicable.
- Cash Security conditional fields are validated when applicable.

Upon submission:

- Financial Input Section (Step 2) becomes active.

Client Additions –

1. Auto-Fetch Customer Information via CIF
    - When CIF is entered, system must auto-fetch:
        - Entity Type
        - Industry Sector
    - Loaded data must appear pre-filled and editable.
2. Business Activity Field
    - Add a new field **Business Activity** to support customers without CIF.
3. CINET / Ci-Net Number
    - Add input field: **CINET Number**
    - Used for:
        - Validation of assessment
        - Future EOD file ingestion for bureau data
4. Historical Auto-Population of Existing Customer Data
    - For returning customers, system must auto-load all previously captured:
        - Entity information
        - Financial statements
        - Qualitative answers
        - Past rating results
    - Pre-filled values must remain editable.



Step 2 – Financial Data

This step captures raw financial statements across multiple historical periods (3, 5, 10, 15, 20, 30 years).
Features include:

- **Excel Upload** and **OCR PDF/Image Upload** for automated ingestion of Balance Sheet, P&L, and Cash Flow data.
- Dedicated tabs for:
  - **Balance Sheet**
  - **Profit & Loss Statement**
  - **Cash Flow Statement**
- Auto-calculated subtotals such as Current Assets, Gross Profit, etc.
- Inline data entry cells with validation.
- Financial year columns adjust dynamically based on year selection in Step 1.

Once saved, financial data becomes the system's base for projections and ratio computations.

Client Additions –

Support Full Financial Statement Structure

- UI must support complete statements:
  - Balance Sheet
  - Income Statement
  - Cash Flow
  - Financial Ratios
  - Projections Sheet

Alignment With Bank's Excel Template

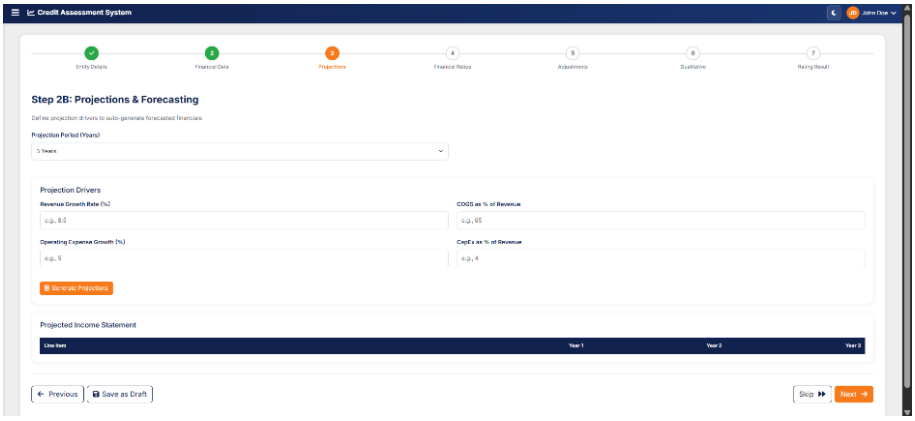
- All rows/columns must match the bank's format exactly.

Excel Upload / OCR Extraction Enhancements

- Excel/OCR must:
  - Identify year columns
  - Identify financial line items
  - Auto-fill values year-wise
  - Allow manual correction

Dynamic Financial Years

- Replace fixed 5-year view with **dynamic year selector** (1–30 years).
- UI must expand/shrink columns accordingly.



Step 3 – Projection & Forecasting

This stage enables forward-looking estimations required for rating models.

- Users enter projected figures for revenue, margins, cash flows, and key assets/liabilities.
- System may auto-suggest values based on historical trends.
- Projections are used to validate sustainability, capacity, and future PD (Probability of Default) curves.

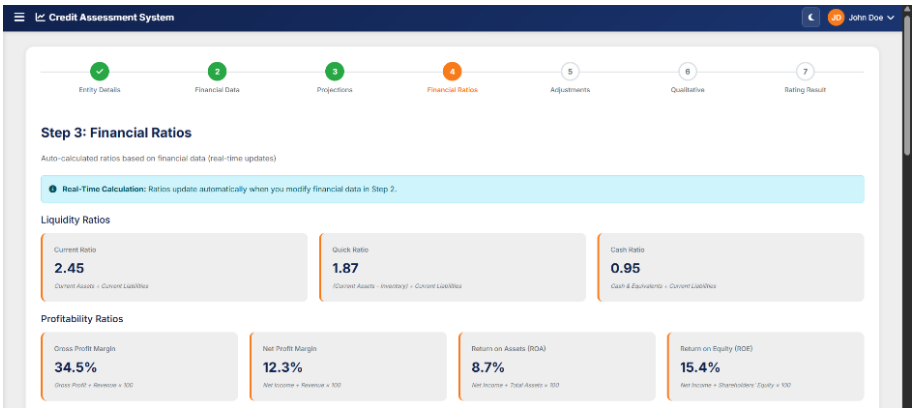
Client Additions –

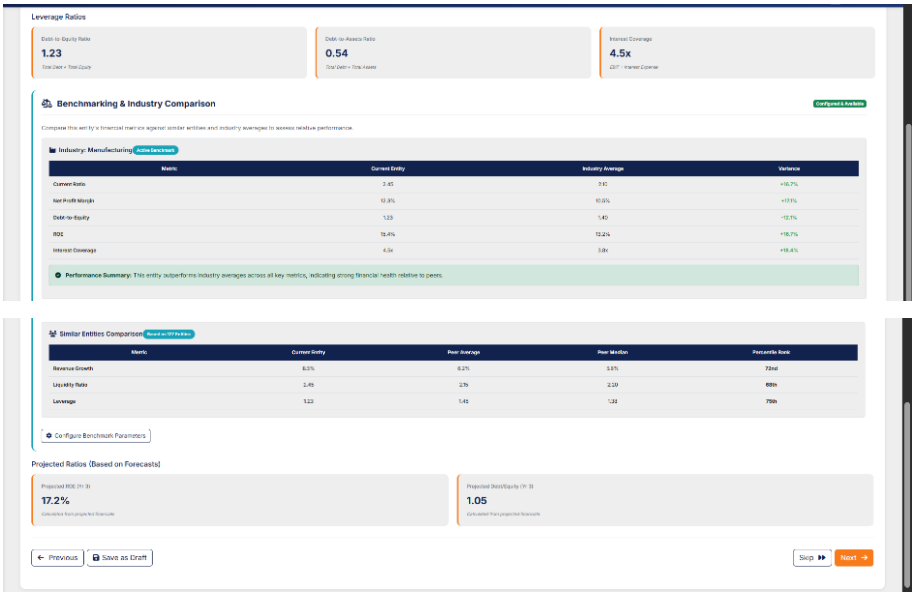
NEW SUBSECTION: STEP 2B – PROJECTIONS MODULE

Insert after Step 2 or create a new **Step 2B**.

4.5.x Projections & Forecasting

1. **Projection Input Screen**
   - Capture projection drivers:
     - Revenue growth %
     - Operating expense %
     - Other configurable drivers
2. **Auto-Generated Forecast Statements**
   - System must auto-generate:
     - Projected Balance Sheet
     - Projected Income Statement
     - Projected Cash Flow (if required)
3. **Integration With Scoring**
   - Projections must influence:
     - Credit Score
     - Derived ratios
     - Final rating
4. **Bank-Configurable Projection Rules**
   - Growth rules & mapping must be fully configurable per bank.
5. **Projections & Forecasting**
   - Projection Input Screen
   - Auto-Generated Forecast Statements
   - Bank-Configurable Projection Rules
   - Historical Qualitative Data Retention





STEP 4: Financial Ratio Computations

Using inputs from Steps 2 & 3, the system automatically computes critical ratios, including but not limited to:

- Liquidity Ratios (Current Ratio, Quick Ratio)
- Leverage Ratios (Debt/Equity, Debt/EBITDA)
- Profitability Ratios (PAT Margin, ROE, ROA)
- Coverage Ratios (Interest Coverage)

The interface displays ratios in dedicated cards that highlight:

- Value
- Formula
- Trends
- Flags for red/amber thresholds

These ratios form the quantitative backbone of the rating model.

Client Additions –

Dynamic Ratio Calculation

- Ratios must auto-compute based on:
    - Imported data
    - Edited data

- Projected financials

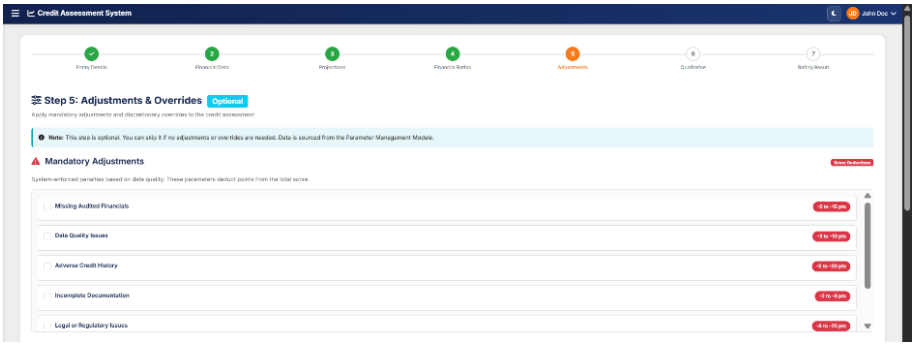
Real-Time Updates

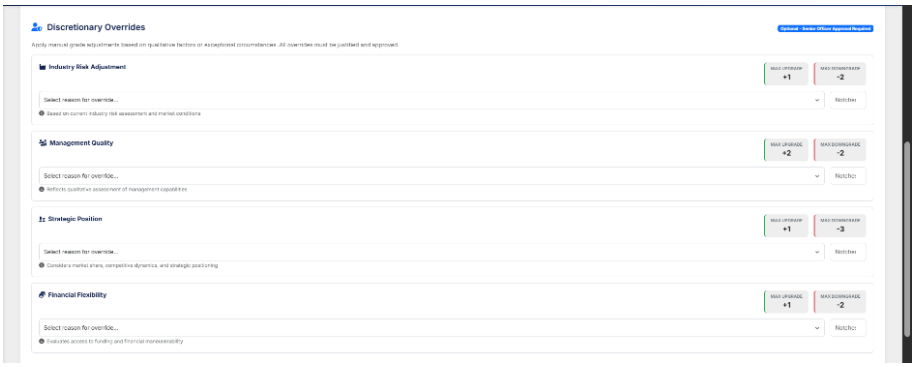
- Editing any financial input must instantly update ratios.

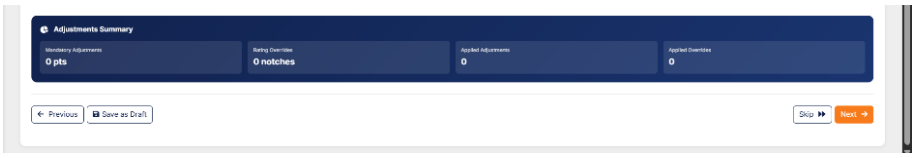
Client Additions –

Historical Comparison

- User must be able to:
  - Open previous rating results in popup
  - Compare current vs previous ratings side-by-side







STEP 5: Adjustments

This step allows controlled adjustments subject to maker-checker workflows.

- Bank-defined adjustment modules (e.g., extraordinary income, one-off expenses).
- Each adjustment displays:
  - Description
  - Deduction Percentage or Value
  - Selection Checkboxes
- Selecting an adjustment recalculates the score instantly.
- System enforces adjustment limits (maximum upgrade/downgrade allowed per regulatory policy).

All adjustments are audit-logged with user, timestamp, and reason.

NEW SUBSECTION: MANUAL ADJUSTMENT LAYER

Insert after Rating Result or before Final Submission.

Manual Adjustment Layer

- Only accessible to authorized users (Senior Credit Officer, etc.).
- User can override computed score.
- System must capture:
  - Adjusted value
  - Reason for adjustment
  - User
  - Timestamp
- All overrides must be included in Audit Trail.

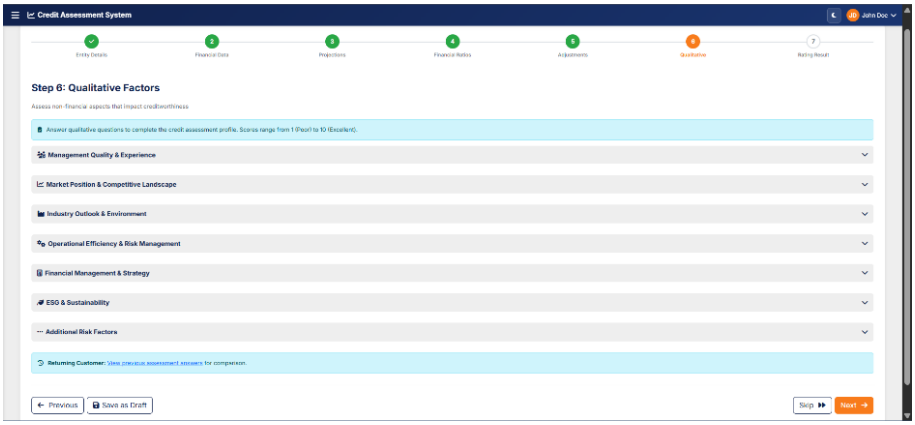
NEW SUBSECTION: DECISION SNAPSHOT

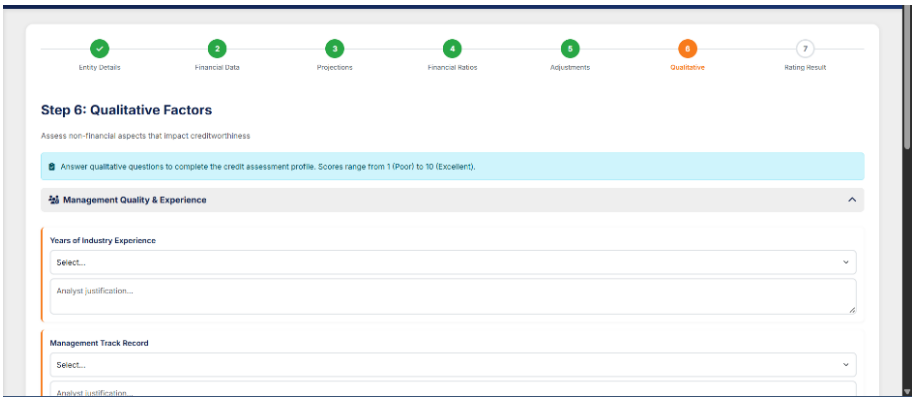
Insert after Manual Adjustment.

Decision Snapshot

At final submission, store a complete snapshot including:

- All financial inputs
- All ratios
- All projections
- All qualitative scores
- Scoring parameters used
- Adjustment logs





STEP 6: Qualitative Assessment

This section captures non-financial factors that influence borrower creditworthiness.

- Each category (Management, Governance, Market Position, Operations, Reputation, etc.) is broken into granular questions.
- Questions support scoring using dropdowns or radio selections.
- Every question is designed with pre-defined scoring weights as per rating methodology.
- Qualitative score merges with quantitative score to compute final borrower grade.

Collapsible panels provide a clean UI for navigation and reduce cognitive load.

Client Additions –

Grouped Questions Support

- Questions must be organized in configurable groups.

Configurable Question Logic

- Admin must configure:
  - Questions
  - Groups
  - Scoring rules
  - Weightages

Miscellaneous Question Subsection

- Add a separate **Miscellaneous Questions** area before final score.

Historical Qualitative Data Retention

- System must retain qualitative answers across assessments and show history.

Step 6B: Facility Grading Override (Cash Security Adjustment)

Apply facility-level rating overrides based on cash collateral coverage as per Bank's Facility Grading Policy

Override Logic - Cash Security Coverage

This step evaluates if the entity's credit limits are fully secured by cash collateral. If applicable, the system will automatically override the calculated rating grade based on the coverage level as per **Credit Risk Management Policy V19, Page 55**.

Cash Security Status

Cash Security Available:	YES
Total Credit Limit Amount:	KWD 1,500,000.00
Cash Collateral Amount:	KWD 1,650,000.00
Cash Coverage Percentage:	110%

CASH COLLATERAL COVERAGE

110%

Cash as per Policy (≥110%)

Cash Security Coverage Matrix

Coverage Level	Facility Grade	Adjustment to ORR	Final Action
≥110% (Cash as per Policy)	Grade 1	Change ORR to 1	Force Final Grade = 1
100% to <110% (Cash at 100%)	Grade 2	Change ORR to 2	Force Final Grade = 2
<100% (Partial Security)	Not applicable	No override	Use calculated grade

Rating Grade Adjustment

CALCULATED GRADE (PRE-OVERRIDE)
5
From STEP 5

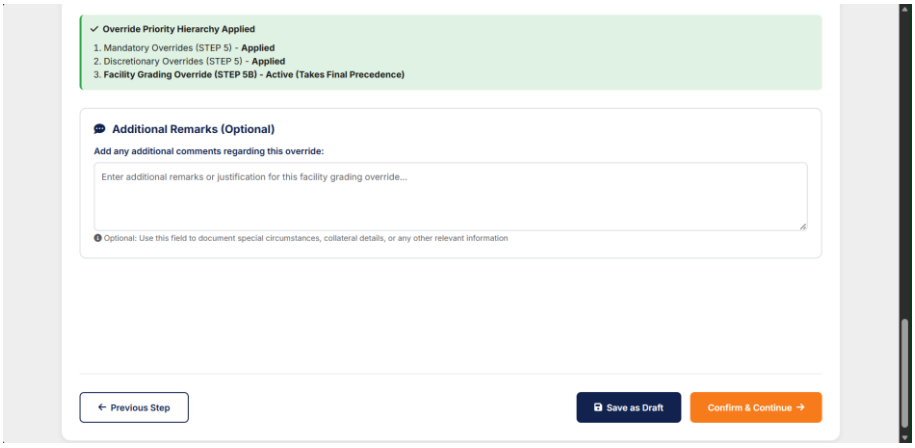
→

FINAL GRADE (POST OVERRIDE)
1
Cash Override Applied

Grade 1 Applied

Facility Grade 1 applied: Cash collateral as per policy (≥110%). Final rating grade changed to 1.

Facility Grade Assigned:	Grade 1
Override Justification:	Entire credit limits fully secured by cash as per Bank's Facility Grading Policy
Policy Reference:	Credit Risk Management Policy V19, Page 55



STEP 6B — FACILITY GRADING OVERRIDE (CASH SECURITY OVERRIDE)

Step 6B is triggered **only when Step 1 indicates Cash Security = Yes**.

The objective is to override the calculated internal rating based on the customer's **cash collateral strength**,

1. Policy-Driven Facility Grades

Coverage Level	Facility Grade	Adjustment to ORR	Outcome
≥110% Cash as per Policy	Grade 1	Force ORR = 1	Mandatory Override
100% to <110%	Grade 2	Force ORR = 2	Mandatory Override
<100%	Not Applicable	No override	System retains calculated grade

This matrix is directly reflected in the Step 6B UI and system logic.

2. Pre-Override vs Post-Override Rating Logic

The system compares:

- Calculated Rating Grade (from Previous Steps)
- Override Grade (from Step 6B Cash Security Evaluation)

Override precedence:

1. Financial Factors (Steps 2 & 4)
2. Mandatory Overrides (Step 5)
3. Discretionary Overrides (Step 5)
4. Qualitative Factors (Step 6)
5. Cash Security Override (Step 6B) – THIS TAKES FINAL PRIORITY

3. Conditions Where Step 5B Is NOT Applicable

1. **If entity is NP (Internal Rating 9/10/11)**
   Cash security override is blocked:

"Not applicable for NP borrowers; NP rating remains final."

2. **If coverage <100%**
   → Override not allowed.
3. **If Cash Security = No in Step 1**
   → Step 5B is skipped entirely.

4. External Rating Interaction

If:

- External Rating exists, and
- Cash Security Override exists

→ **Cash Security Override takes priority**.

UI shows a combined warning indicating final grade selection.
Example, if External Rating = ORR 3 and Cash Security Override = Grade 1:

Final assigned grade = **1**
(as per hierarchy)

Step 6C: External Rating Selection & Override

Select between system-calculated rating or externally mapped rating as per Credit Risk Management Policy V19

External Rating Override Logic

When an entity has published credit ratings from recognized agencies (S&P, Moody's, Fitch), you can choose to override the system-calculated rating with the externally mapped grade. **The selected rating cannot exceed (be better than) the external rating grade.** This ensures regulatory compliance and conservative risk assessment.

Entity External Rating Status

External Rating Available:	YES
Entity Name:	ABC Corporation Ltd.
Rating Agency:	S&P Global Ratings
External Rating:	BBB+
Mapped Internal Grade:	Grade 3
Rating Classification:	Investment Grade
Rating Date:	15 Nov 2024

EXTERNAL RATING MAPPED GRADE

3

Investment Grade (BBB+)

External Rating to Internal Grade Mapping Matrix

Reference: Credit Risk Management Policy V19, Page 79 - External Rating Mapping based on S&P Default Rate Analysis and PD Closest Mapping Methodology

Internal Grade	S&P Ratings	Moody's Ratings	Fitch Ratings	Grade Classification	Risk Level
1	AAA, AA+, AA, AA-	Aaa, Aa1, Aa2, Aa3	AAA, AA+, AA, AA-	Investment	Minimal
2	A+, A, A-	A1, A2, A3	A+, A, A-	Investment	Low
3	BBB+, BBB	Baa1, Baa2	BBB+, BBB	Investment	Moderate
4	BBB-	Baa3	BBB-	Investment	Adequate
5	BB+, BB, BB-	Ba1, Ba2, Ba3	BB+, BB, BB-	Below Inv.	Elevated

Select Final Rating Grade

Choose between system-calculated rating or external rating. **You cannot select a grade better (lower) than the external rating grade.**

SYSTEM CALCULATED RATING

5

Source: Internal credit assessment model
Calculation: Based on financial ratios, qualitative factors, and risk parameters
Status: Valid selection

System Assessment

EXTERNAL RATING (MAPPED)

3

Agency: S&P Global Ratings
Rating: BBB+
Classification: Investment Grade

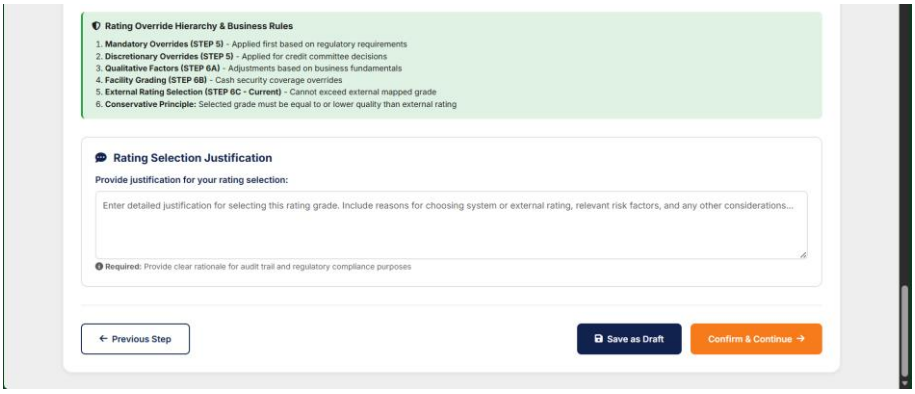
Recommended

External rating selected. Conservative approach applied.

SYSTEM CALCULATED
5
Internal Model

↔

SELECTED GRADE
3
External Rating



The External Rating Selection & Override screen (Step 6C) enables authorized credit assessment users to make the final rating determination when an entity possesses published credit ratings from recognized external agencies (S&P Global Ratings, Moody's Investor Service, or Fitch Ratings). This screen provides a decision interface where users can select between the internally calculated Obligor Risk Rating (ORR) grade or the externally mapped grade, subject to regulatory constraints and conservative credit risk principles.

The screen serves as a critical control point in the credit rating workflow, ensuring that external credit assessments from internationally recognized rating agencies are appropriately considered while maintaining alignment with the organization's internal risk classification framework and Basel compliance requirements.

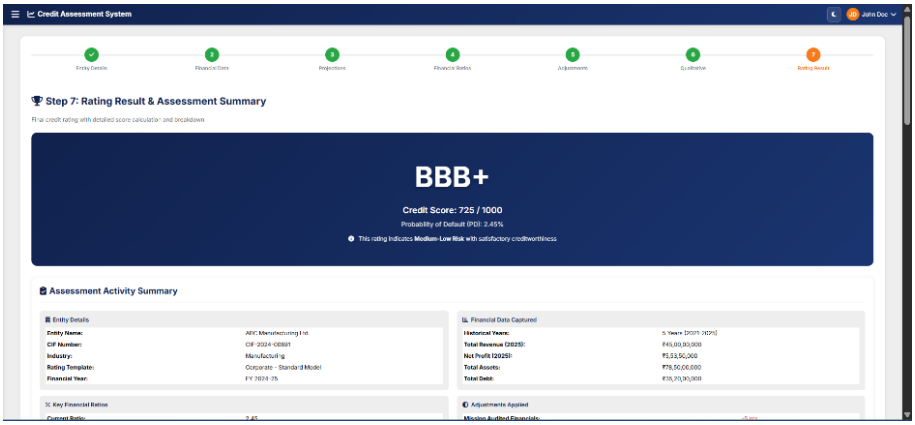
Conservative Principle (Primary Constraint)

Statement: Selected internal grade CANNOT be better (numerically lower) than the externally mapped grade.

Examples:

- ✅ **Valid**: External Grade = 3, System Grade = 5, User can select either
- ✅ **Valid**: External Grade = 3, System Grade = 3, User can select either
- ❌ **Invalid**: External Grade = 5, System Grade = 3, User CANNOT select system grade

Rationale: Ensures conservative risk assessment; external ratings from recognized agencies provide floor for internal ratings to prevent over-optimistic assessments.



STEP 7: Rating Result

The final step consolidates all quantitative and qualitative scores.

Displayed elements include:

- **Final Rating Grade (e.g., A, BBB+, BB)**
- **Score (Numeric)**
- **PD % Value**
- **Breakdown of Weightage Components**
- **Applied Adjustments Summary**
- **Qualitative & Quantitative Contribution Chart**

For NP customers (Step 1 override), the system shows:

- Locked rating of 9 / 10 / 11
- Frozen customer badge
- Warning message indicating future templates remain frozen until status is changed

Final submission triggers the maker-checker workflow and records a complete audit trail.

Overall Workflow Behaviour

Aspect	Description
Linear Progression	User can move forward but cannot skip mandatory steps.
Maker-Checker Compliance	Each stage logged and submitted for review based on user role.

Auto-Validation	Mandatory fields and ratios validated automatically before progressing.
Template-Driven	Rating template selection determines weightages, qualitative sections, ratio mapping.
Frozen NP Behaviour	When NP flag is ON, rating calculation switches to NP rating logic and all templates are locked.
Auditability	Every action (data entry, adjustment, override, NP flag) is logged.

Client Additions

Rating Output Printing Requirement

The system shall provide the capability to **generate and print the rating output for each borrower** at both the **Business Checker** and **Risk Checker** stages.

This functionality must be available **prior to the Final Risk Approver's rating freeze action**, enabling Business and Risk Checkers to review, validate, and retain rating outputs for assessment and verification purposes.

The printed rating output shall follow the format and layout as specified in **Attachment 1** and must reflect the latest calculated rating at the time of printing.

Output – **PDF or XLS**

Attachment 1 is stated below as an illustration –

Obligor Risk Rating Output Document serves as the official, system-generated rating certificate for every completed borrower assessment, even before its freezing once the final score is generated. This document must follow the standardized structure provided by the client in Attachment 3 and must be generated consistently for all rating templates (Contracting, Trading, Investment, PNW, etc.).

Final Rating Master Table (CONTRACTING & SERVICE TEMPLATE)

Score Range	Grade
0 – 139	8
140 – 159	7
160 – 174	6
175 – 189	5
190 – 204	4
205 – 214	3
215 – 224	2
225 and above	1

Final Rating Master Table (INVESTMENT REAL ESTATE & FINANCE TEMPLATE)

Score	Grades
0	8
140	7
160	6
175	5
190	4
205	3
215	2
225	1

Final Rating Master Table (PERSONAL NETWORTH DECLARATION BORROWERS GRADING TEMPLATE)

Score Greater than or equal to	Score Less than	PNWD GRADE	CORP GRADE
18.89	63.35	5	7
63.35	84.21	4	6
84.21	91.92	3	5
91.92	100.00	2	4
100.00	100.00	1	2

Final Rating Master Table (Trading & Manufacturing TEMPLATE)

Score	Grades
0	8
140	7
160	6
175	5
190	4
205	3
215	2
225	1

Note -

Final Rating Grades must be numerical (1–11)	Internal rating scale should use only numerical grades

Reference –

3 Obligor Risk Rating Output.docx
Contracting and Services Template 27-
Investment Real Estate & Finance 27-0
PERSONAL NETWORTH DECLARA
Trading & Manufacturing 27-05-

Contracting & Services

	DATE	0/Jan/00 RMD Credit Review
CUSTOMER NAME	0	
CUSTOMER CB	0	
CUSTOMER CIF	0	
ORR CATEGORY	CBD-Corp	

Qualitative (50%)

Factor Name	Value	Score
Constitution and Establishment	Public Shareholding Companies	22
Number of Years in Business	More than 20 years	29
Availability of un-utitilized Credit Limits/Lines (with other Lenders)	Credit lines with other lendors are available (Utilization 20-70%)	22
Existence of financial planning and Control (Risk Management & Internal Audit)	Good	27
Position in the Market	Strong position in the market amongst peers	22
Govt./ private sector contracting	> 50% of the contract with Govt./Public Sector and balance with highly reputed Private sector/MNC with high net worth in relation to the value of contracts	15
Sensitivity to Economic Shocks/Stresses	Some minor impact from economic shocks and stresses	22
Contractor or Subcontractor Grade	Not Applicable (Only for Services Companies)	23
Past track record (service delivery)	Good track record - Majority of contracts completed within contract tenors but could involve some cost and time overruns.	21
Competition & Demand	High Competition and High Demand	22
Availability of qualified and experienced resources, infrastructure & Management Capability	Well Qualified	33
Total Non-Financial Score		257

Financial Sector (50%)

Factor Name	Value	Score
Affiliates due to Net Worth	#DIV/0!	23
Current Ratio	#DIV/0!	23
Debt to Equity Ratio	#DIV/0!	23
Opearting Revenue to External Liabilities	#DIV/0!	23
Inv Assets To Total Assets	#DIV/0!	23
Net Profit Margin	#DIV/0!	23
Working Capital Turnover	#DIV/0!	23
Change in DebtRatio	#DIV/0!	23
Total Financial Score	NO FINANCIALS	0

NOTE : IF THERE ARE NO FINANCIALS, THE SUM OF THE FINANCIAL SCORE IS TAKEN AS ZERO; IGNORE INDIVIDUAL NEUTRAL SCORES)

INITIALSCORE	
Total Score	128
Initial Grade	**8**

Mandatory Adjustments		
Factor Name	Value	Grade
Age of Financial Information	0m - 12m	0
Quality of Financial Information	Financials audited by Highly Reputable Auditor	0
Historical Account Performance	No Past Dues or Cheque Bounces	0
Qualification of Audit Report	UnQualified Opinion Report	0
Grade		0
Downgrade Notch		0

Adjusted Grade	**8**

Discretionary Overrides (Refer to the table in G53) - Select from drop down list below (Reasons & Values)	
Override Reason	Value
Account Conduct - Persistent ever-greening (> 2 years) of revolving loans without any repayment	0
ECONOMIC * - Drastic fall in Capital markets	0
ECONOMIC * - Deteriorating Global Economic sentiments (eg. 2008 Credit Crisis kind of scenario)	0
# of Notches	0

Final Grade	**8**

HIGH-LEVEL INTER-DEPARTMENT WORKFLOW

A. CBD / IBD WORKFLOW (Business Unit)

This unit performs the **pre-risk business checks**, consisting of:

1. Business Maker (X123)

- Creates the case
- Enters all customer/entity details
- Uploads documents
- Saves drafts or submits to checker

Transition ⟶ Submits the case to **Business Checker**

2. Business Checker (X123)

- Reviews data entered by Maker
- Can **approve** or **return for corrections**
- ~~Cannot modify actual data (remarks only)~~ "Business Checker can review and modify data points entered by the Business Maker before approving."

Two possible paths:

- **Return** ⟶ Goes back to Business Maker for corrections
- **Submit Forward** ⟶ Sends case to **Risk Verifier (RMD)**

This transition to RMD triggers a **system notification**.

Commented [UP5]: Modifications should be allowed at this stage

Commented [PS6R5]: This comment has been acknowledged and appropriately addressed in Version 1.1 of the BRD. Necessary provisions have been included to allow modifications at this stage as requested.

B. RISK MANAGEMENT DEPARTMENT (RMD) WORKFLOW

3. Risk Maker (X123)

- Reviews the case sent from CBD/IBD
- **Risk Maker / Risk Checker can mark a customer as Non-Performing.**
- **When marked NP, the system automatically assigns a rating of 9, 10, or 11.**
- **All future rating templates for that CIF remain frozen until the status changes back to "Performing".**
- Fills Risk Parameters & qualitative risk details
- Uploads risk documents
- Can save draft
- Submits to Risk Checker

Transition → Risk Checker

4. Risk Checker (X123)

- Validates the risk assessment performed by the Risk Maker
- **Risk Maker / Risk Checker can mark a customer as Non-Performing.**
- **When marked NP, the system automatically assigns a rating of 9, 10, or 11.**
- **All future rating templates for that CIF remain frozen until the status changes back to "Performing".**
- Adds remarks
- ~~Approves or returns for risk level rework~~ **"Risk Checker is allowed to modify data points before approval."**

If approved:

Transition → Final Approver **"Rating report generation will occur after the approval stage, as the approval process is already completed prior to report generation."**

5. Final Approver (X123)

- Performs final credit-level approval
- Confirms end-to-end completion from Business & Risk
- Once approved, the entire assessment becomes **FROZEN**
- No further edits allowed

End State → Assessment Frozen + Final Rating Report Enabled

(MESSAGE FLOWS)

1. Notification (CBD/IBD → RMD)

Triggered when Business Checker forwards the case to Risk Verifier:

- **Risk team receives workflow notification**
- **Assessment enters Risk Draft state**

2. Submission Flow (RMD → CBD/IBD for tracking)

Once Risk Approval completes, the submission progresses to Final Approver:

- **Final approval notification**
- **System locks record post-approval**

Risk Management Department (RMD) Workflow

3. **Risk Maker (X123)**
    - **Can edit data points entered by business users.**

Commented [UP7]: Modifications should be allowed at this stage

Commented [PS8R7]: This comment has been reviewed and incorporated in Version 1.1 of the BRD. It is now explicitly stated that the Risk Checker is allowed to modify data points prior to approval.

Commented [UP9]: Rating Report generation should be available at this stage

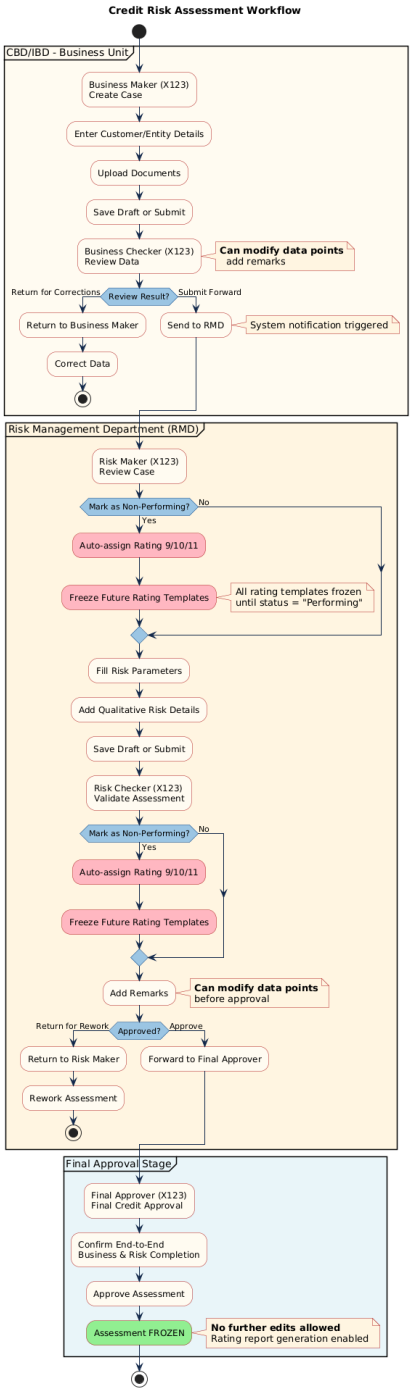
Commented [PS10R9]: This comment has been reviewed and incorporated in Version 1.1 of the BRD. Rating report generation will occur after the approval stage, as the approval process is already completed prior to report generation.

Commented [UP11]: A feature needs to be added at Risk maker-checker level to stamp a client as "non-performing" with assigned rating of 9, 10 or 11, freezing subsequent rating using the templates until the client's stamp is changed to "performing".

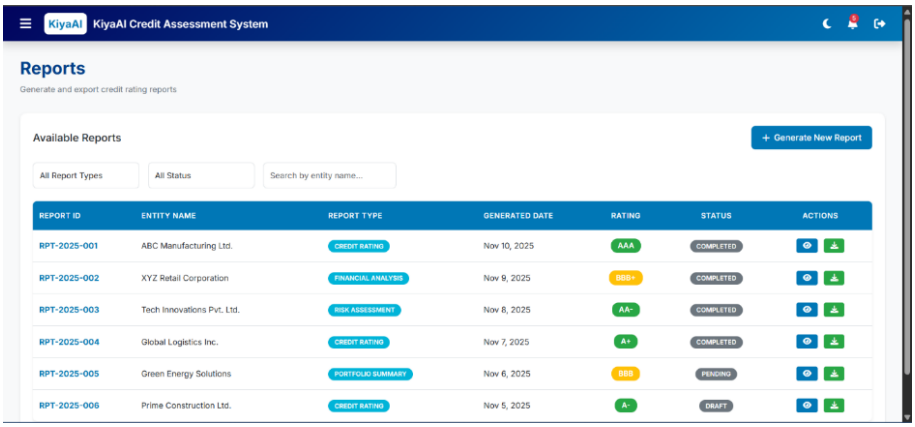
Commented [PS12R11]: This requirement has been reviewed and incorporated in Version 1.1 of the BRD. A feature has been added at the Risk Maker/Risk Checker level enabling them to mark a customer as Non-Performing. When a customer is marked NP, the system will automatically assign a rating of 9, 10, or 11, and all subsequent rating templates for that CIF will remain frozen until the status is changed back to "Performing".

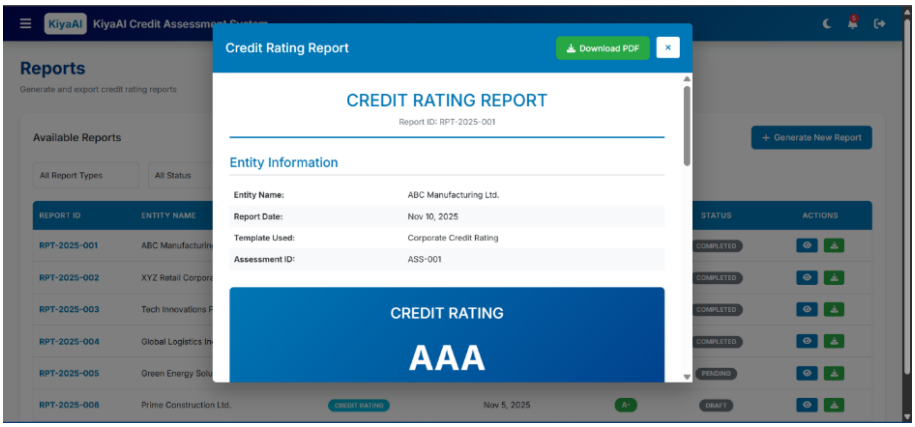
Commented [PS13R11]: Please provide Auto-assignment Criteria when marked as NP, this will be required to be configured in System

4. Risk Checker (X123)
    - Can modify data points.
    - Option to return to Risk Maker.
5. Final Approver (X123)
    - Can return the application to any Risk user for changes or make changes directly.


Credit Risk Assessment Workflow
CBD/IBD - Business Unit
Business Maker (X123)
Create Case
Enter Customer/Entity Details
Upload Documents
Save Draft or Submit
Business Checker (X123)
Review Data
Can modify data points
add remarks
Return for Corrections
Review Result?
Submit Forward
Return to Business Maker
Send to RMD
System notification triggered
Correct Data
Risk Management Department (RMD)
Risk Maker (X123)
Review Case
Mark as Non-Performing?
No
Yes
Auto-assign Rating 9/10/11
Freeze Future Rating Templates
All rating templates frozen
until status = "Performing"
Fill Risk Parameters
Add Qualitative Risk Details
Save Draft or Submit
Risk Checker (X123)
Validate Assessment
Mark as Non-Performing?
No
Yes
Auto-assign Rating 9/10/11
Freeze Future Rating Templates
Add Remarks
Can modify data points
before approval
Return for Rework
Approved?
Approve
Return to Risk Maker
Forward to Final Approver
Rework Assessment
Final Approval Stage
Final Approver (X123)
Final Credit Approval
Confirm End-to-End
Business & Risk Completion
Approve Assessment
Assessment FROZEN
No further edits allowed
Rating report generation enabled

4.6. Reports





The Reports module allows users to **generate, download, and review credit assessment reports**. It provides standardized document formats based on templates, offering transparency and auditability of rating results.

The Reports screen includes:

A. Report List Table

Columns:

- Report Name
- Description
- Report Type (PDF/Template-Based)
- Last Generated
- Actions (Generate, Download, View)

B. Report Generation Filters

For applicable reports:

- Date Range
- Status
- Template
- Entity Name
- Financial Year
  These filters refine the dataset before generating output.

C. Output Format

Reports generated in:

- PDF
- Excel (if defined)
- System-defined Template Output

Types of Reports

Common reports include:

- **Assessment Summary Report**
- **Parameter Score Report**
- **Final Rating Report**
- **Portfolio Overview Report**
- **Assessment Status Report**

Report Generation Process

- User selects the report type.
- Applies filters based on available input parameters.
- System fetches relevant data set.
- Backend prepares the report using predefined template.
- User downloads or previews the output.

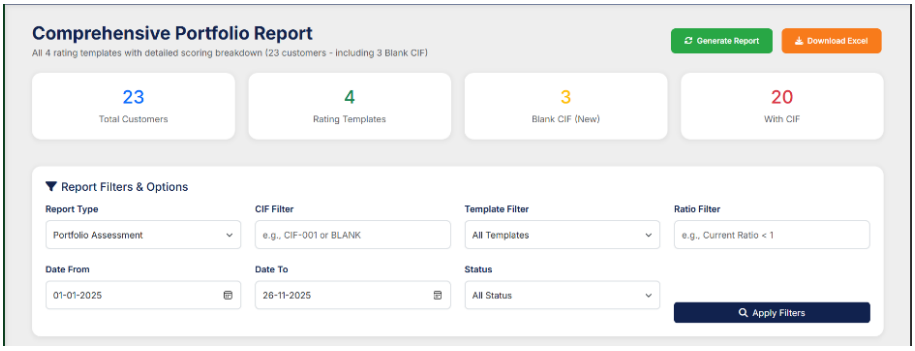
Report Template Management

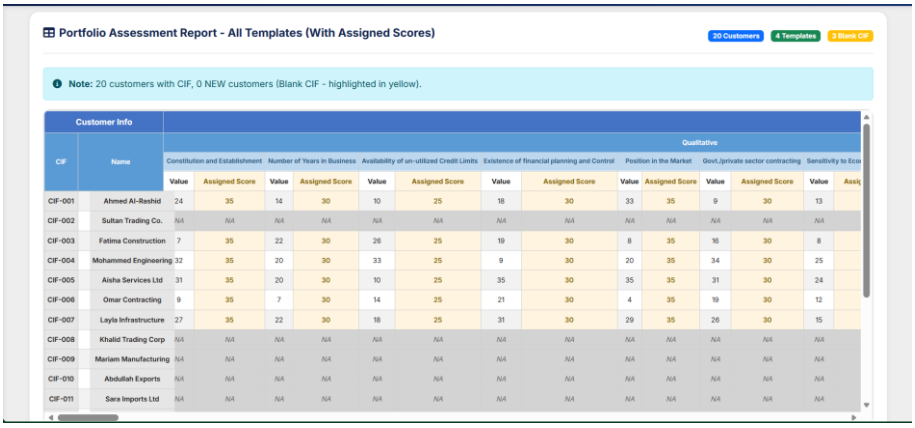
- System supports configuration of:
  - Report Layout
  - Header/Footer
  - Branding

- Section Arrangement
- Admin module controls available templates (future scope if not yet implemented).

Report –

Portfolio-Level Assessment Report





Customer Info		Qualitative													
CIF	Name	Constitution and Establishment		Number of Years in Business		Availability of un-utilized Credit Limits		Existence of financial planning and Control		Position in the Market		Govt./private sector contracting		Sensitivity to Eco	
		Value	Assigned Score	Value	Assigned Score	Value	Assigned Score	Value	Assigned Score	Value	Assigned Score	Value	Assigned Score	Value	Assi
CIF-001	Ahmed Al-Rashid	24	35	14	30	10	25	18	30	33	35	9	30	13	
CIF-002	Sultan Trading Co.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CIF-003	Fatima Construction	7	35	22	30	26	25	19	30	8	35	16	30	8	
CIF-004	Mohammed Engineering	32	35	20	30	33	25	9	30	20	35	34	30	25	
CIF-005	Aisha Services Ltd	31	35	20	30	10	25	35	30	35	35	31	30	24	
CIF-006	Omar Contracting	9	35	7	30	14	25	21	30	4	35	19	30	12	
CIF-007	Layla Infrastructure	27	35	22	30	18	25	31	30	29	35	26	30	15	
CIF-008	Khalid Trading Corp	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CIF-009	Mariam Manufacturing	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CIF-010	Abdullah Exports	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
CIF-011	Sara Imports Ltd	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

This report represents a Customer-Level Assessment under the *Contracting and Services* credit scoring model.

The ***Portfolio Assessment Report*** provides a consolidated view of all customer assessments across all templates. Each customer is evaluated based on multiple quantitative and qualitative parameters.

For every parameter, the report now shows two details:

- **Value i.e. (Input Value)** – The actual data or metric captured for the customer (e.g., number of years in business, credit limit availability, market position, etc.).
- **Assigned Score** – The score given based on the value, according to the defined scoring rules in the assessment template.

This combined view helps users understand both the customer Calculated Score information and the derived assessment score used for portfolio evaluation. It also highlights customers without CIF numbers in yellow for quick identification.

Note –

The first four columns of the report are fixed and must always appear in the following order:

Sr. No.	Column Name	Description
1	Assessment Date	The date on which the rating assessment was performed.
2	CIF Number	Unique Customer Identification File number.
3	Borrower Name	Name of the applicant/borrower being assessed.
4	Rating Template Type	Indicates whether the assessment used the Contracting / Trading / Investment / Personal Net Worth template.

These columns must remain static for all template types and appear before any parameter-level information.

For every financial, business/qualitative, and risk parameter configured in the selected rating template, the report will generate two columns per parameter:

1. **Input Value Column – The raw value or qualitative response entered during the assessment.**
2. **Score Column – The numerical score assigned based on the scoring matrix.**

The dual-column structure ensures full transparency between input data and scoring output.

☐ **Only parameters applicable to the selected template must appear.**

☐ **Parameters not used in a particular template must display "NA" in both input and score columns.**

Example –

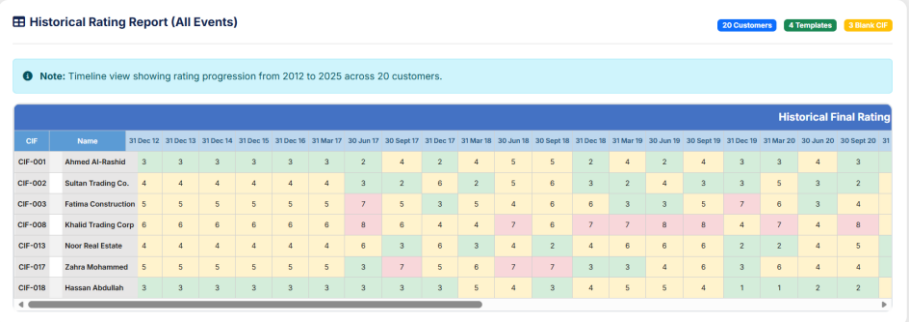
				Qualitative Parameters			
				Affiliates due to Net Worth		Current Ratio	
Date	CIF	Name	Rating Template Type	Input Value	Score	Input Value	Score

12-11-2025	564738	Abdullah Al-Mutairi	Contracting	1.25 Cr	18	1.45	22.5
12-11-2025	884512	Fahad Al-Sabah	Trading	NA	NA	NA	NA
13-11-2025	776431	Jassem Al-Bader	Contracting	3.40 Cr	25	1.88	30
14-11-2025	992341	Lulwa Al-Harbi	Investment	NA	NA	NA	NA
15-11-2025	112563	Shaikha Al-Otaibi	Personal Net Worth	NA	NA	NA	NA

After all parameter-level columns, the following rating computation columns must appear in the order defined below:		
Sr. No.	Computation Column	Description
1	Initial Score	Sum of all parameter scores before any adjustments.
2	Initial Rating Grade	Numerical grade (1–11) derived from the Initial Score using the rating grade matrix.
3	Mandatory Override – Input Details	Displays the trigger values (e.g., NPA flag, negative net worth) that resulted in a mandatory override.
4	Mandatory Override – Adjusted Grade	Grade after applying mandatory override rules.
5	Discretionary Override – Input Details	Displays the comments/reasons provided by the assessor for discretionary override.
6	Final Grade	Final computed rating grade (1–11) after applying all overrides.

Historical Rating Report (Quarterly Rating Report)

The Historical Rating Report provides a quarterly view of customer evaluations, capturing rating changes over time. Customers are assessed every three months, and the most recent rating is automatically updated and displayed in the system for each evaluation cycle.



Historical Rating Report (All Events)

20 Customers | 4 Templates | 3 Blank CIF

Note: Timeline view showing rating progression from 2012 to 2025 across 20 customers.

		Historical Final Rating																						
CIF	Name	31 Dec 12	31 Dec 13	31 Dec 14	31 Dec 15	31 Dec 16	31 Mar 17	30 Jun 17	30 Sept 17	31 Dec 17	31 Mar 18	30 Jun 18	30 Sept 18	31 Dec 18	31 Mar 19	30 Jun 19	30 Sept 19	31 Dec 19	31 Mar 20	30 Jun 20	30 Sept 20	31
CIF-001	Ahmed Al-Rashid	3	3	3	3	3	3	2	4	2	4	5	5	2	4	2	4	3	3	4	3	
CIF-002	Sultan Trading Co.	4	4	4	4	4	4	3	2	6	2	5	6	3	2	4	3	3	5	3	2	
CIF-003	Fatima Construction	5	5	5	5	5	5	7	5	3	5	4	6	6	3	3	5	7	6	3	4	
CIF-008	Khalid Trading Corp	6	6	6	6	6	6	8	6	4	4	7	6	7	7	8	8	4	7	4	8	
CIF-013	Noor Real Estate	4	4	4	4	4	4	6	3	6	3	4	2	4	6	6	6	2	2	4	5	
CIF-017	Zahra Mohammed	5	5	5	5	5	5	3	7	5	6	7	7	3	3	4	6	3	6	4	4	
CIF-018	Hassan Abdullah	3	3	3	3	3	3	3	3	3	5	4	3	4	5	5	4	1	1	2	2	

Note –

The Quarterly Rating History Report provides a chronological, quarter-by-quarter matrix view of historical borrower rating grades for regulatory reporting, portfolio monitoring, and rating migration analysis.

Fixed Columns (First Two Columns)

Column	Description
CIF Number	Unique borrower identification used as a row anchor.
Borrower Name	Name of the borrower associated with the CIF.

These columns remain constant for all report outputs.

Following the two fixed columns, the report must dynamically generate one column for each quarter-end date within the user-selected period.
Quarter column headers must be formatted using **quarter-end dates (YYYY-MM-DD)**, for example:

- 2023-03-31
- 2023-06-30
- 2023-09-30
- 2023-12-31

If the user selects a time range from **2012 to 2025**, the system must automatically generate all quarter-end dates from **Q1 2012 through Q4 2025**, resulting in a matrix potentially spanning dozens of columns.

Sample Table Format (Dummy Illustration)

CIF	Borrower Name	2023-03-31	2023-06-30	2023-09-30	2023-12-31
778912	Abdullah Al-Mutairi	6	5	5	7
559034	Fahad Al-Sabah	4	4	3	3
992341	Lulwa Al-Harbi	7	7	6	6
112563	Shaikha Al-Otaibi	5	6	5	5

Historical Rating Comparison Report

Historical Rating Comparison Report

23 Customers | 4 Templates | 3 Blank CIF

Note: 20 customers have assigned CIF. 3 customers are NEW to the bank and under assessment (Blank CIF - highlighted in yellow). 2 customers (Ahmed Al-Rashid, Sultan Trading Co.) are assessed across multiple templates.

CIF	Name	Template	Rating		Score		Mandatory Adj		Override	
			Previous	Current	Previous	Current	Previous	Current	Previous	Current
BLANK	New Applicant - Green Valley Construction	Contracting & Services	N/A	AAA	N/A	297	N/A	-70 (7 notches)	0	0
BLANK	New Applicant - Future Trading LLC	Trading & Manufacturing	N/A	AAA	N/A	243	N/A	-83 (8 notches)	0	0
BLANK	New Applicant - Sarah Investment Group	Investment Real Estate & Finance	N/A	AAA	N/A	226	N/A	-50 (5 notches)	0	0
CIF-001	Ahmed Al-Rashid	Contracting & Services	N/A	AAA	N/A	334	N/A	-44 (4 notches)	0	0
CIF-001	Ahmed Al-Rashid	Trading & Manufacturing	N/A	AAA	N/A	290	N/A	-44 (4 notches)	0	0
CIF-002	Sultan Trading Co.	Trading & Manufacturing	N/A	AAA	N/A	321	N/A	-53 (5 notches)	0	0
CIF-002	Sultan Trading Co.	Investment Real Estate & Finance	N/A	AAA	N/A	282	N/A	-54 (5 notches)	0	0
CIF-003	Fatima Construction	Contracting & Services	N/A	AAA	N/A	327	N/A	-29 (3 notches)	0	0
CIF-004	Mohammed Engineering	Contracting & Services	N/A	AAA	N/A	369	N/A	-33 (3 notches)	0	0
CIF-005	Aisha Services Ltd	Contracting & Services	N/A	AAA	N/A	256	N/A	-26 (3 notches)	0	0
CIF-006	Omar Contracting	Contracting & Services	N/A	AAA	N/A	309	N/A	-40 (4 notches)	0	0
CIF-007	Layla Infrastructure	Contracting & Services	N/A	AAA	N/A	271	N/A	-42 (4 notches)	0	0
CIF-008	Khalid Trading Corp	Trading & Manufacturing	N/A	AAA	N/A	245	N/A	-75 (7 notches)	0	0

Blank CIF Report

Blank CIF Report (New Customers Under Assessment)

23 Customers | 4 Templates | 3 Blank CIF

Note: 20 customers have assigned CIF. 3 customers are NEW to the bank and under assessment (Blank CIF - highlighted in yellow). 2 customers (Ahmed Al-Rashid, Sultan Trading Co.) are assessed across multiple templates.

Rating Date	2025-11-20
Borrower Name	New Applicant - Green Valley Construction
CIF	(BLANK - Under Assessment)
Status	New Customer - Awaiting CIF Assignment
Templates	Contracting & Services
Rating Details	**Contracting & Services:** Rating AAA, Score 297
CIF Update History	2025-11-26T05:52:05.711Z: contracting - Rating AAA (Blank CIF) 2025-11-26T05:52:05.730Z: trading - Rating AAA (Blank CIF) 2025-11-26T05:52:05.731Z: realEstate - Rating AAA (Blank CIF)
Rating Date	2025-11-22
Borrower Name	New Applicant - Future Trading LLC
CIF	(BLANK - Under Assessment)
Status	New Customer - Awaiting CIF Assignment

IFRS9 Latest Rating Report

IFRS9 Latest Rating Report

23 Customers | 4 Templates | 3 Blank CIF

Note: 20 customers have assigned CIF. 3 customers are NEW to the bank and under assessment (Blank CIF - highlighted in yellow). 2 customers (Ahmed Al-Rashid, Sultan Trading Co.) are assessed across multiple templates.

CIF	Borrower Name	Template	Latest Date	Latest Rating	Latest Score	Status
BLANK	New Applicant - Green Valley Construction	Contracting & Services	2025-11-20	AAA	297	BLANK CIF
BLANK	New Applicant - Future Trading LLC	Trading & Manufacturing	2025-11-22	AAA	243	BLANK CIF
BLANK	New Applicant - Sarah Investment Group	Investment Real Estate & Finance	2025-11-25	AAA	226	BLANK CIF
CIF-001	Ahmed Al-Rashid	Contracting & Services	2025-11-26	AAA	334	Active
CIF-001	Ahmed Al-Rashid	Trading & Manufacturing	2025-11-26	AAA	290	Active
CIF-002	Sultan Trading Co.	Trading & Manufacturing	2025-11-26	AAA	321	Active
CIF-002	Sultan Trading Co.	Investment Real Estate & Finance	2025-11-26	AAA	282	Active
CIF-003	Fatima Construction	Contracting & Services	2025-11-26	AAA	327	Active
CIF-004	Mohammed Engineering	Contracting & Services	2025-11-26	AAA	369	Active
CIF-005	Aisha Services Ltd	Contracting & Services	2025-11-26	AAA	256	Active
CIF-006	Omar Contracting	Contracting & Services	2025-11-26	AAA	309	Active
CIF-007	Layla Infrastructure	Contracting & Services	2025-11-26	AAA	271	Active
CIF-008	Khalid Trading Corp	Trading & Manufacturing	2025-11-26	AAA	245	Active

Each row corresponds to one customer (CIF) and shows the scores assigned across all qualitative, quantitative, and mandatory adjustment parameters defined in the model.

1. Customer Information

- CIF – Customer Identification File number (unique customer ID)
- Name – Customer name

These identify the customer for whom the assessment is performed.

2. Qualitative Parameters (Company & Business Factors)

The first set of columns captures non-financial, qualitative factors that influence customer risk. Examples:

- Constitution & Establishment – Type of entity (Govt, Public Co., Partnership, etc.)
- Number of Years in Business
- Credit Line Utilization with Other Lenders
- Financial Planning / Internal Controls
- Market Position
- Sector Contracting (Govt./Private Sector)
- Sensitivity to Economic Shocks
- Contractor Grade
- Past Track Record
- Competition & Demand
- Availability of Qualified Resources

Each factor shows a score based on predefined risk weight tables.

Commented [HMK14]: a)The report also should include the name of the borrower alongwith CIF, more importantly, actual FINANCIAL RATIOS along with the scores for quantitative part and scores for qualitative part, score before mandatory adjustment, rating before mandatory adjustment, mandatory adjustment parameter and the respective downgrade notch, rating after mandatory adjustment, type of overrides applied, final rating after overrides, for each rating template.

b) The rating history of borrowers should ideally be stored in the system and report generation should include historical rating details as well if the selected period of the report includes the period where multiple rating is done for the same borrower.

c) Since the borrower identity is CIF based, for new borrowers there will not be any CIFs and the reports will have blank CIFs. Ideally, there should be a report of blank CIFs with rating date, name, and other relevant details, etc. which can be a reference for manual updation of CIFs and name as per ICBS at a later stage once CIF is defined in iCBS. There should be logs for all these updates.

d) If a borrower is rated 5 in June 2023, 6 in June 2024 and 7 in June 2025, and in Dec 2025 if the borrower defaults, there should be a mechanism where the defaults is earmarked in the system, either as D or some number, ideally 9/10/11. One way is to have a separate field in the rating template, " borrower defaulted"; and when the default event happens, the concerned CRM officer shou ...

Commented [PS15R14]: a) Borrower details, financial ratios, scores, adjustments, overrides, final rating
Response:
This requirement has been incorporated. The report now includes borrower name, CIF, actual financial ratios, qualitative and quantitative scores, score before mandatory adjustment, rating before adjustment, mandatory adjustment parameters with downgrade notches, and the final rating after overrides for every template. Please refer to the attached screens. An HTML prototype for the report module will also be shared.
b) Rating history and multi-period rating visibility
Response:
Implemented. The system now stores the complete rating history and includes all rating events in the report whenever the selected period contains multiple ratings for the same borrower. Refer to attached screens for the updated display. An HTML prototype for the report module will also be shared.
c) Blank CIF handling and report for new borrowers
Response:
Implemented. A dedicated "Blank CIF Report" has been added, showing rating date, borrower name, rating details, and blank CIFs, along with logs for later CIF updates. Please refer to the attached screens. An HTML prototype for the report module will also be shared.
d) Default rating workflow (D / 9 / 10 / 11), chronological reporting & default-specific filtering
Response:
The Status Filter includes "Defaulted" as an option; selecting this filter displays all default cases for the ...

3. Quantitative Parameters (Financial Ratios)

The green columns reflect financial ratio scoring, including:

- Affiliate Due to Net Worth
- Current Ratio
- Debt-Equity Ratio
- Operating Revenue / External Liabilities
- Investment Assets to Total Assets
- Net Profit Margin
- Working Capital Turnover
- Change in Debt Ratio

These values are calculated using customer's financial statements and mapped to the scoring ranges you provided earlier.

In this screenshot, financial numbers appear as NA, meaning:

- Financials were not available OR
- Customer belongs to a purely qualitative model OR
- This is sample dummy data

4. Miscellaneous Factors

These additional risk elements include:

- Account Conduct – Evergreen accounts, repayment behavior
- Economic Shock Factors – Sensitivity to market downturns, oil price crash, etc.
- # of Notches – Adjustment for overrides (manual upgrades/downgrades)

These influence the overall score when applicable.

5. Mandatory Adjustments

Mandatory risk modifiers include:

- Age of Financial Information
- Quality of Financial Information
- Historical Account Performance
- Qualification of Audit Report

These ensure that low-quality or outdated financials penalize the final outcome.

6. Final Score

The final column provides the total aggregated score after:

Qualitative score

Quantitative score

Miscellaneous

Mandatory Adjustments

In the example:

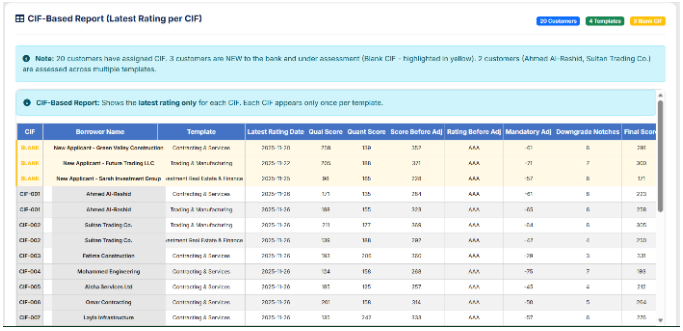
- CIF 001 → Final Score = 128
- CIF 002 → Final Score = 233

Commented [UP16]: This report should have two types:
1) CIF based – the latest output for all CIFs (one row for each CIF)
2) Interval based – all entries made to the system between the chosen dates (may have more than one rows for any CIF i.e. three rows for a CIF if the customer has been rated thrice during the chosen time interval)

Commented [PS17R16]: 1.The CIF-based report returns the **latest rating record per CIF per template** by selecting the most recent entry from the rating history; it supports CIF and template filters and displays latest date, qual/quant scores, mandatory adjustments, downgrade notches and final rating. Refer to the attached screens; an HTML prototype for the report module has been provided.

2.The Interval-based report returns **all rating entries** between the selected Date From and Date To (multiple rows per CIF when a customer has been rated more than once in the period). Results are sorted by CIF and date and include entry counts and unique-CIF metrics. Refer to the attached screens; an HTML prototype for the report module has been provided.

CIF Based Report



CIF-Based Report (Latest Rating per CIF)

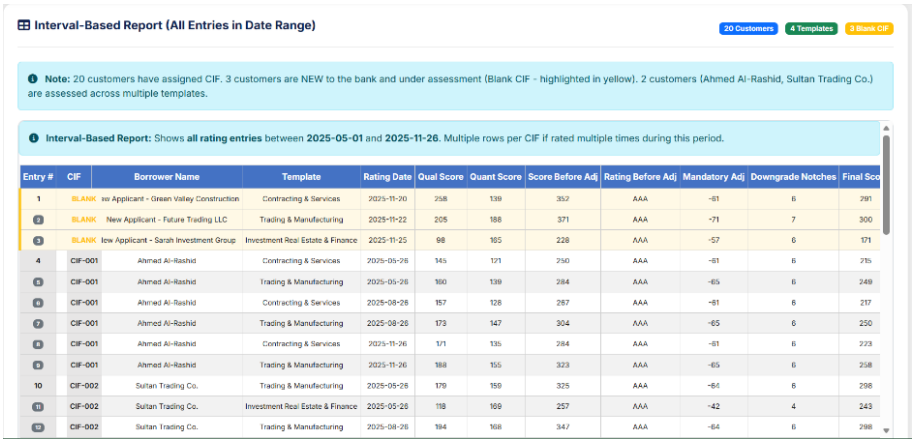
20 Customers | 4 Templates | 3 Blank CIF

Note: 20 customers have assigned CIF. 3 customers are NEW to the bank and under assessment (Blank CIF - highlighted in yellow). 2 customers (Ahmed Al-Rashid, Sultan Trading Co.) are assessed across multiple templates.

CIF-Based Report: Shows the **latest rating only** for each CIF. Each CIF appears only once per template.

CIF	Borrower Name	Template	Latest Rating Date	Qual Score	Quant Score	Score Before Adj	Rating Before Adj	Mandatory Adj	Downgrade Notches	Final Scor
BLANK	New Applicant - Green Valley Construction	Contracting & Services	2025-11-20	258	139	352	AAA	-61	6	291
BLANK	New Applicant - Future Trading LLC	Trading & Manufacturing	2025-11-22	205	166	371	AAA	-71	7	300
BLANK	New Applicant - Sarah Investment Group	estment Real Estate & Finance	2025-11-25	98	165	228	AAA	-57	6	171
CIF-001	Ahmed Al-Rashid	Contracting & Services	2025-11-26	171	135	284	AAA	-61	6	223
CIF-001	Ahmed Al-Rashid	Trading & Manufacturing	2025-11-26	188	155	323	AAA	-65	6	258
CIF-002	Sultan Trading Co.	Trading & Manufacturing	2025-11-26	179	177	356	AAA	-64	6	305
CIF-002	Sultan Trading Co.	estment Real Estate & Finance	2025-11-26	136	166	302	AAA	-47	4	259
CIF-003	Fatima Construction	Contracting & Services	2025-11-26	183	210	393	AAA	-39	3	351
CIF-004	Mohammed Engineering	Contracting & Services	2025-11-26	124	158	268	AAA	-75	7	186
CIF-005	Aisha Services Ltd	Contracting & Services	2025-11-26	185	185	357	AAA	-45	4	312
CIF-006	Omar Contracting	Contracting & Services	2025-11-26	201	156	314	AAA	-56	5	254
CIF-007	Layla Infrastructure	Contracting & Services	2025-11-26	191	142	333	AAA	-57	6	276

Interval Based Report



Interval-Based Report (All Entries in Date Range)

20 Customers | 4 Templates | 3 Blank CIF

Note: 20 customers have assigned CIF. 3 customers are NEW to the bank and under assessment (Blank CIF - highlighted in yellow). 2 customers (Ahmed Al-Rashid, Sultan Trading Co.) are assessed across multiple templates.

Interval-Based Report: Shows **all rating entries** between **2025-05-01** and **2025-11-26**. Multiple rows per CIF if rated multiple times during this period.

Entry #	CIF	Borrower Name	Template	Rating Date	Qual Score	Quant Score	Score Before Adj	Rating Before Adj	Mandatory Adj	Downgrade Notches	Final Sco
1	BLANK	ew Applicant - Green Valley Construction	Contracting & Services	2025-11-20	258	139	352	AAA	-61	6	291
2	BLANK	New Applicant - Future Trading LLC	Trading & Manufacturing	2025-11-22	205	188	371	AAA	-71	7	300
3	BLANK	lew Applicant - Sarah Investment Group	Investment Real Estate & Finance	2025-11-25	98	165	228	AAA	-57	6	171
4	CIF-001	Ahmed Al-Rashid	Contracting & Services	2025-05-26	145	171	250	AAA	-61	6	215
5	CIF-001	Ahmed Al-Rashid	Trading & Manufacturing	2025-05-26	160	139	284	AAA	-65	6	249
6	CIF-001	Ahmed Al-Rashid	Contracting & Services	2025-08-26	157	128	287	AAA	-61	6	217
7	CIF-001	Ahmed Al-Rashid	Trading & Manufacturing	2025-08-26	173	147	304	AAA	-65	6	250
8	CIF-001	Ahmed Al-Rashid	Contracting & Services	2025-11-26	171	135	284	AAA	-61	6	223
9	CIF-001	Ahmed Al-Rashid	Trading & Manufacturing	2025-11-26	188	155	323	AAA	-65	6	258
10	CIF-002	Sultan Trading Co.	Trading & Manufacturing	2025-05-26	179	159	325	AAA	-64	6	298
11	CIF-002	Sultan Trading Co.	Investment Real Estate & Finance	2025-05-26	118	169	257	AAA	-42	4	243
12	CIF-002	Sultan Trading Co.	Trading & Manufacturing	2025-08-26	194	168	347	AAA	-64	6	298

Client Additions -

Sample reports will be provided for all customers across all models with their respective scores.

Consolidated List of Client Requirements for the Reporting Module

1. Detailed Report Requirements

- The report must include the borrower's **Name** and **CIF**.
- The report must display **actual financial ratios**, **quantitative scores**, and **qualitative scores** for each rating template.
- The report must show **Score Before Mandatory Adjustment** and **Rating Before Mandatory Adjustment**.
- The report must capture and display the **Mandatory Adjustment Parameter** and the respective **Downgrade Notch**.
- The report must show the **Rating After Mandatory Adjustment**.
- The report must include the **Type of Overrides Applied** (if any).
- The report must provide the **Final Rating after Overrides** for each rating template.

2. Historical Rating Requirements

- The system shall store the **entire rating history** of each borrower.
- When a report is generated for a selected date range, **all historical rating events** must be included if multiple ratings exist for the same borrower within that interval.

3. Blank CIF Reporting

- For borrowers without CIFs, the system must generate a **Blank CIF Report** showing:
  - Rating date
  - Borrower name
  - CIF (blank)
  - Other rating details
- The system must maintain **logs for all CIF updates**, to allow later alignment with iCBS once CIFs are assigned.

4. Default Rating Workflow

- The system must support marking a borrower as **Defaulted** using a dedicated field ("Borrower Defaulted").
- When default is marked, the system must create a **new rating event** with rating **D** or **9/10/11**, and **deactivate** all other rating parameters.
- Reports generated for any selected period must show the **full rating chronology**, e.g., 5 → 6 → 7 → D, with all corresponding details.

5. CIF-Based & Interval-Based Reports

- The system must support a **CIF-Based Report**, showing **the latest rating** for each CIF (one row per CIF).
- The system must support an **Interval-Based Report**, showing **all rating entries** within the chosen date range (multiple rows per CIF if applicable).

6. Periodic Historical Portfolio Report

- The system must support a **Periodic Historical Final Score & Rating Report**, displaying:

Commented [UP18]: Another report format already shared – periodic historical final score and rating for entire portfolio over a chosen time interval

CIF Dec 2022 Score Dec 2022 Rating March 2023 Score March 2023 Rating June 2023 Score June 2023 Rating
One row for each CIF

Commented [PS19R18]: The system now supports a periodic historical report that displays final scores and final ratings for each CIF across selected time points within the chosen interval. The report generates one row per CIF and includes all rating events chronologically. Refer to attached screens; an HTML prototype for the report module will also be shared.
Pls check attached Screen shots

Commented [JFM20]: A report also should provide LATEST ratings for all customers AS ON A SPECIFIC PERIOD (this is for IFRS9 RATING EXERCISE).

For eg.

➔User will input '31 Dec 2024'.
➔Click 'generate report'.
➔System should generate *latest ratings for all customers* as of the specified date.

Required fields:

1.CIF
2.Customer Name
3.Rating Template
4.Score
5.Rating
6.Rating date

Report should be downloadable to excel/csv/pdf

Commented [PS21R20]: The report module now supports generating the latest rating for each customer "as on" a user-selected date (e.g., 31 Dec 2024). The system retrieves the most recent rating record on or before the specified date and displays CIF, Customer Name, Rating Template, Score, Rating, and Rating Date. The output is available for download in Excel/CSV/PDF formats. Refer to attached screens; an HTML prototype for the report module will also be shared.
Please refer to the Screen-shot attached

- Score and Rating at each selected time interval (e.g., Dec 2022, Mar 2023, Jun 2023)
- One row per CIF with multiple time-point columns.

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7. IFRS9 "As On Date" Latest Rating Report

- The system must generate a report showing **Latest Rating As On a Specific Date** (e.g., 31 Dec 2024).

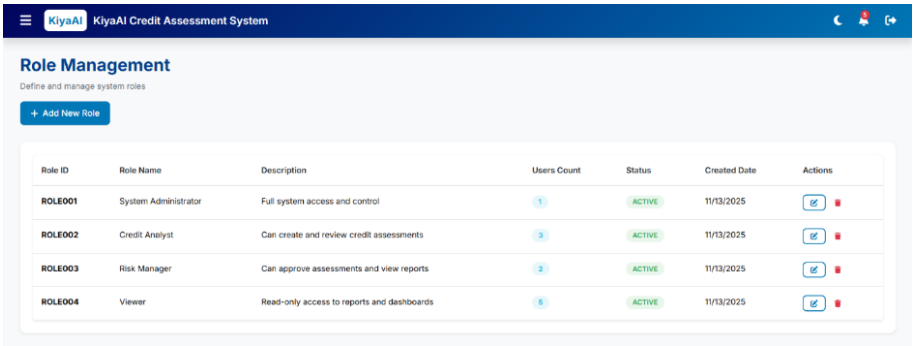
Required fields:

- CIF
- Customer Name
- Rating Template
- Score
- Rating
- Rating Date

The report must be **downloadable in Excel/PDF** formats.

4.7. Administration

4.7.1. Role Management



The Roles module enables administrators to create and manage **user roles** within the application. Each role defines a set of permissions that control access to modules, screens, and actions across the system.

It forms the foundation of RBAC (Role-Based Access Control).

The Role Management screen displays:

A. Roles List Table

Includes:

- Role ID
- Role Name
- Role Type (System / Custom)
- Description
- Status (Active / Inactive)
- Actions (Edit, Activate/Deactivate)

B. Add/Edit Role Modal

Fields:

- Role Name
- Description
- Role Status
- Permissions Assignment (linked with RBAC module)
- Save / Cancel buttons

FUNCTIONAL DETAILS

Create Role

- Admin enters:
  - Role Name (e.g., Analyst, Reviewer, Admin)
  - Description
  - Status
- Saves role to system.
- Default roles may be predefined (e.g., System Admin).

Edit Role

- Admin can update:
  - Name
  - Description
  - Status
- Permissions edited via the RBAC module.

Role Status Management

- **Active** roles available for assignment.
- **Inactive** roles cannot be assigned.
- Audit logs maintained for status changes.

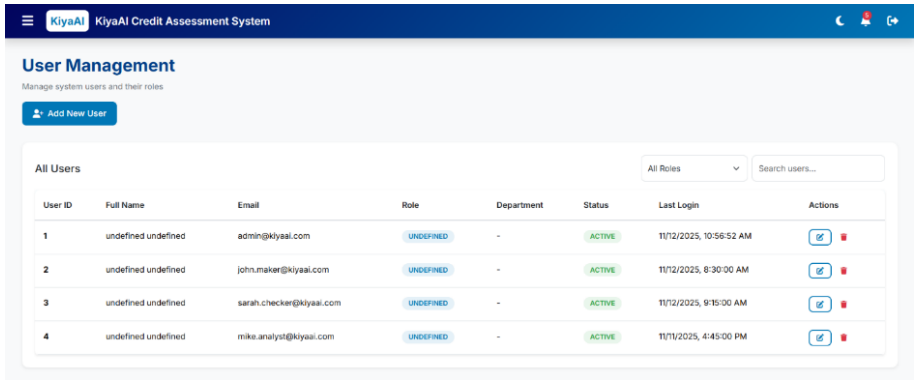
Permissions Integration

- Role definition alone does not grant access.
- Permissions must be linked in **RBAC Module**.
- Each role maps to modules, screens, or actions.

Validation Rules

- Role name must be unique.
- Cannot deactivate role if users are actively assigned (unless allowed by business).

4.7.2. User Management



The User Management module enables administrators to create, update, and maintain user accounts for the KiyaAI Credit Assessment System.
It defines user identity, assigned roles, access levels, and operational status.

This module ensures secure and controlled access of users across the system.

The User Management screen includes:

A. User List Table

Columns:

- User ID
- Name
- Email
- Role
- Status (Active / Inactive / Locked)
- Last Login
- Actions (Edit, Activate/Deactivate, Reset Password)

B. Add/Edit User Form/Modal

Fields:

- Full Name
- Email Address
- Phone Number (optional)
- Role Assignment (dropdown)
- User Type (ADS / Manual Login)
- Status

- Optional: Department / Location
- Save / Cancel

C. Optional Actions

- **Reset Password** (Manual login users)
- **Unlock User** (after failed attempts lockout)
- **Deactivate Account**

FUNCTIONAL DETAILS

Create User

- Admin enters user details.
- Selects **Role** from Role Management module.
- Selects login type:
  - **ADS User** → Authenticated through Active Directory
  - **Manual User** → Password generated and sent via email
- Saves user into system.

Edit User

- Admin updates user details:
  - Name
  - Email
  - Role
  - Status
- Critical fields like email may be restricted depending on business rules.

User Status Management

Statuses include:

- **Active** → User can log in
- **Inactive** → User blocked from login
- **Locked** → System-locked due to failed attempts

Admin can:

- Unlock user
- Activate / Deactivate account

Password & Authentication Handling

For **Manual Login Users**:

- Admin can reset password
- User receives system-generated credentials
- User must change password on first login (optional requirement)

For **ADS Users**:

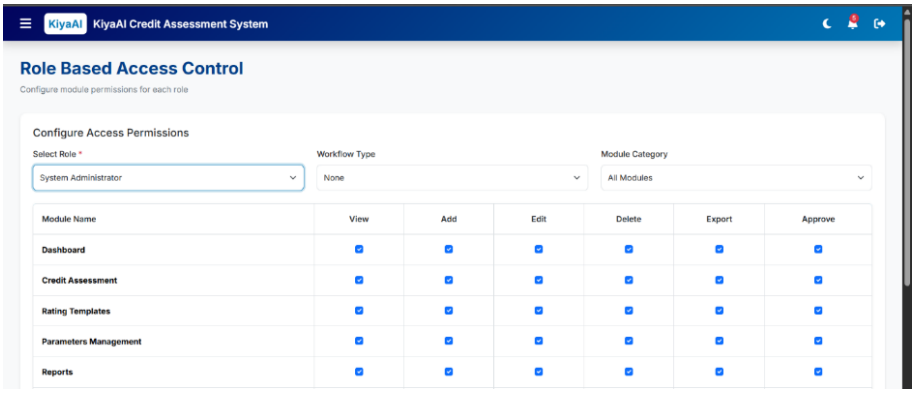
- Password managed in Active Directory
- No reset option inside system

Audit Trail Integration

System logs:

- User creation
- Updates
- Role changes
- Status changes
- Login attempts
- Failed login events

4.7.3. RBAC (Role-Based Access Control)



The RBAC (Role-Based Access Control) module defines **permissions and access rights** for each role in the system.
It determines what every role can **view**, **edit**, **create**, **approve**, or **delete** across modules.

RBAC ensures users only access features relevant to their responsibilities.

The RBAC screen includes:

A. Role Selection Panel

- Dropdown listing all active roles
- Selecting a role loads its current permissions

B. Permissions Matrix

Displayed in a table/grouped list:

- Modules (Dashboard, Assessment, Templates, Parameters, Reports, Admin, etc.)
- Submodules and screens
- Action-level controls, such as:
    - View
    - Create
    - Edit
    - Approve
    - Delete
    - Download Reports
    - Manage Workflow

Each permission uses toggle switches or checkboxes.

C. Save Permissions

- Button to persist changes for the selected role.

FUNCTIONAL DETAILS

Permission Assignment

For each role, admin can enable/disable access to:

- Entire modules
- Specific screens
- Field-level or action-level permissions (if configured)

Example:

- Analyst → View + Edit Assessments
- Reviewer → View + Approve Assessments
- Admin → Full Access

Permission Types

Common permission categories:

- **Module Access** (visibility in sidebar)
- **Screen Access**
- **Create/Edit/Delete**
- **Approval Rights**
- **Report Generation**
- **Admin-Level Controls**

Enforcement Mechanism

- Permissions are stored against each role.
- At login:
    - System loads user's role and permission set
    - Sidebar and screens dynamically adjust
- Actions blocked by API if unauthorized.

Integration with User Management

- Users inherit permissions from assigned roles.
- Role change automatically updates user access.

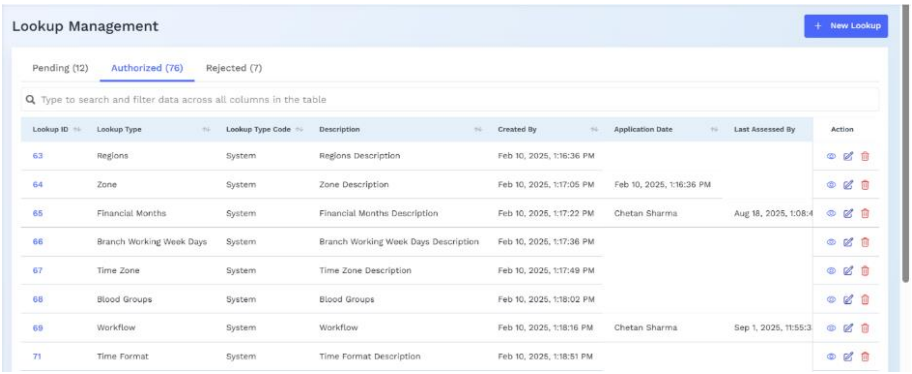
Audit Tracking

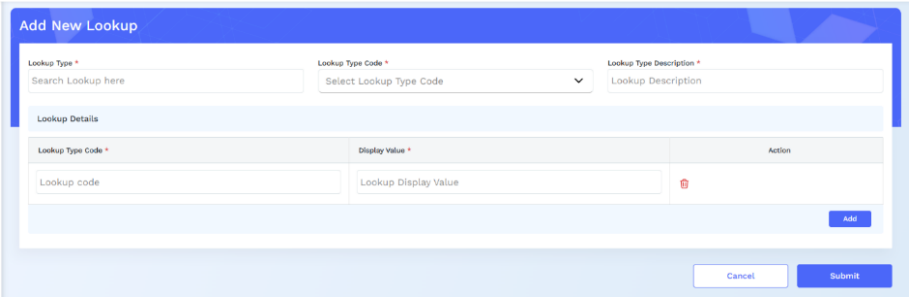
System logs:

- Permission modifications
- Modified by
- Timestamp

4.8. Masters

4.8.1. Lookup Management





The Lookup Management module allows administrators to maintain all **static and reusable dropdown values** used across the system.
These lookups ensure consistency in data entry and support configurable options across multiple modules (Assessment, Templates, Parameters, Reports, etc.).

The Lookup Management screen includes:

A. Lookup Category List

Examples:

- Industry Category
- Entity Type
- Business Risk Options
- Qualitative Score Options
- Assessment Status
- Document Types
- Rating Grades
- Financial Ratio Types

B. Lookup Value Table

Columns:

- Lookup ID
- Lookup Name
- Display Value
- Status (Active/Inactive)
- Actions (Edit/Delete)

C. Add/Edit Lookup Modal

Fields:

- Category
- Lookup Name
- Display Value
- Description (optional)
- Status
- Save/Cancel buttons

FUNCTIONAL DETAILS

Create Lookup

- Admin selects a category or creates a new category.
- Adds lookup name and display value.
- Saves to system for immediate availability.

Edit Lookup

- Modify existing lookup:

  - Name
  - Display value
  - Status
- Deactivated lookups stop appearing in dropdowns.

Lookup Categories

Each category groups related values. Examples:

- **Industry Sector** for Entity Details
- **Template Categories** for Rating Templates
- **Qualitative Options** for Parameters
- **Assessment Status Types** for workflow

System Usage

Lookups populate:

- Dropdowns
- Filter lists
- Auto-complete inputs
- Validation reference data

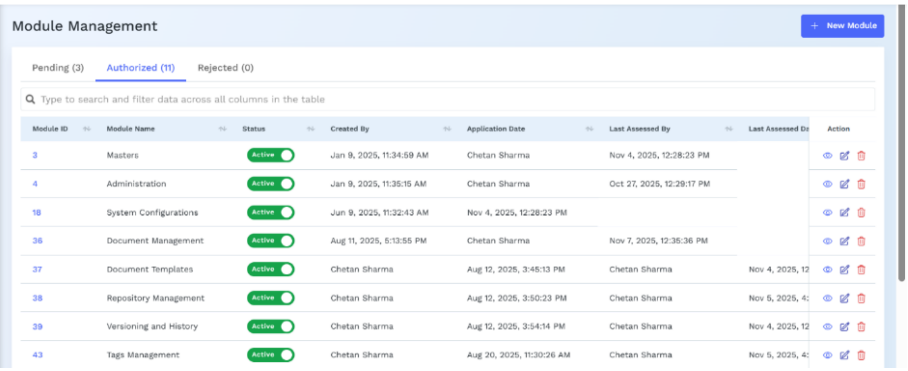
Changes reflect across modules instantly.

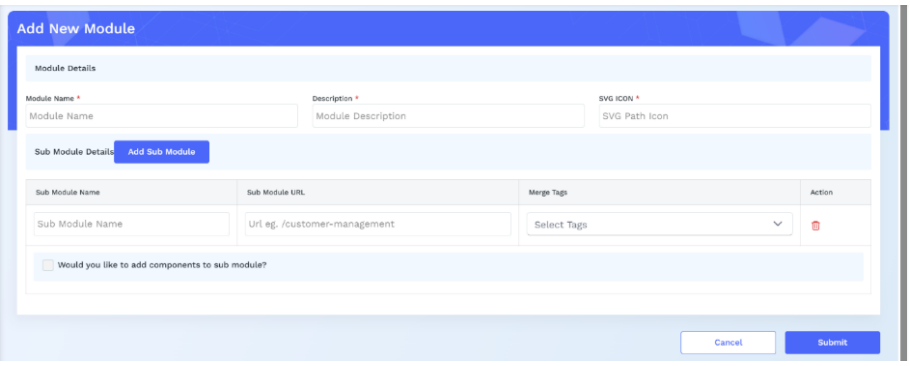
Validation Rules

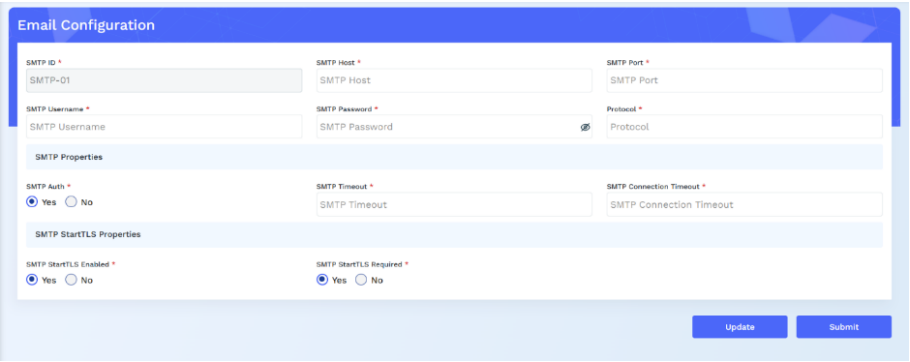
- Lookup name must be unique within its category.
- Category cannot be deleted if values exist.
- Inactive values cannot be assigned in new records.

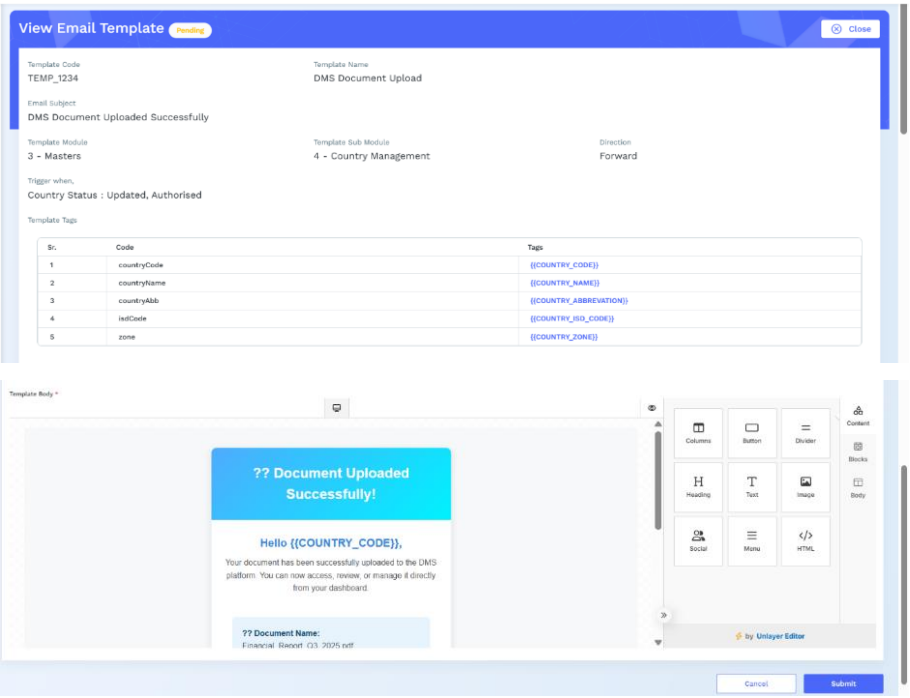
4.9. System Configuration

The System Configuration module allows administrators to manage global system settings that impact communication, module visibility, and operational behavior.
It includes configuration of **Email Server**, **Email Templates**, and **Module Management**.


Module Management
+ New Module
Pending (3)
Authorized (11)
Rejected (0)
Type to search and filter data across all columns in the table
Module ID
Module Name
Status
Created By
Application Date
Last Assessed By
Last Assessed Da
Action
3 Masters Active Jan 9, 2025, 11:34:59 AM Chetan Sharma Nov 4, 2025, 12:28:23 PM
4 Administration Active Jan 9, 2025, 11:35:15 AM Chetan Sharma Oct 27, 2025, 12:29:17 PM
18 System Configurations Active Jun 9, 2025, 11:32:43 AM Nov 4, 2025, 12:28:23 PM
36 Document Management Active Aug 11, 2025, 5:13:55 PM Chetan Sharma Nov 7, 2025, 12:35:36 PM
37 Document Templates Active Chetan Sharma Aug 12, 2025, 3:45:13 PM Chetan Sharma Nov 4, 2025, 12
38 Repository Management Active Chetan Sharma Aug 12, 2025, 3:50:23 PM Chetan Sharma Nov 5, 2025, 4:
39 Versioning and History Active Chetan Sharma Aug 12, 2025, 3:54:14 PM Chetan Sharma Nov 4, 2025, 12
43 Tags Management Active Chetan Sharma Aug 20, 2025, 11:30:26 AM Chetan Sharma Nov 5, 2025, 4:


Add New Module
Module Details
Module Name *
Module Name
Description *
Module Description
SVG ICON *
SVG Path Icon
Sub Module Details
Add Sub Module
Sub Module Name
Sub Module URL
Merge Tags
Action
Sub Module Name
Url eg. /customer-management
Select Tags
Would you like to add components to sub module?
Cancel
Submit


Email Configuration
SMTP ID *
SMTP-01
SMTP Host *
SMTP Host
SMTP Port *
SMTP Port
SMTP Username *
SMTP Username
SMTP Password *
SMTP Password
Protocol *
Protocol
SMTP Properties
SMTP Auth *
Yes
No
SMTP Timeout *
SMTP Timeout
SMTP Connection Timeout *
SMTP Connection Timeout
SMTP StartTLS Properties
SMTP StartTLS Enabled *
Yes
No
SMTP StartTLS Required *
Yes
No
Update
Submit



A. Email Configuration

Fields:

- SMTP Server
- Port
- Sender Email (From Address)
- Username
- Password / App Key
- SSL/TLS Enable Toggle

Email Configuration

- Admin enters SMTP details required for system notifications.
- “Test Email” validates configuration.
- Used for:
    - User creation emails
    - Password reset
    - Assessment alerts

- Report delivery (if applicable)

Validation:

- Mandatory fields must be valid before save.

B. Email Templates

Columns:

- Template Name
- Subject
- Type (Password Reset, Notification, Assessment Report, Alerts)
- Actions (Edit/Preview)

Add/Edit Template Modal:

- Template Name
- Subject Line
- Body (Rich Text Editor)
- Dynamic Variables (e.g., {{UserName}}, {{AssessmentId}})
- Admin manages system-generated email formats.
- Templates support placeholders for dynamic data.
- Typical templates:
  - User Onboarding
  - Password Reset
  - Assessment Completed
  - Approval Notifications

Editing:

- Admin updates subject and body via rich text editor.
- Preview option before save.

C. Module Management

- Toggle-based list of modules:
  - Dashboard
  - Credit Assessment
  - Templates
  - Parameters

- Reports
- Audit
- Admin Modules

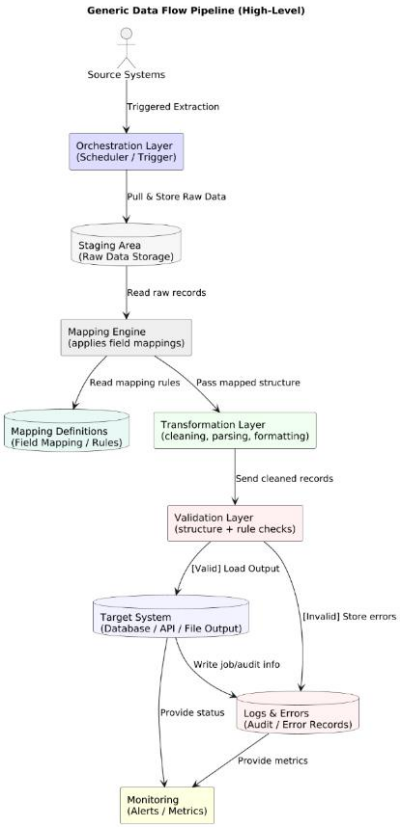
- Admin can **enable/disable** modules for all users or selected roles (if extended).

Controls which modules appear in the sidebar.

Disabling a module hides it from all users (unless role-based override is configured).

Helps manage phased rollouts or features under development.

5. Data Ingestion



High-Level Stepwise Summary

1. Extract

Data is pulled from source systems (DB, API, files) based on a trigger or schedule.

2. Stage

Raw data is stored temporarily without changes, to keep an untouched copy.

3. Map

A mapping engine reads mapping definitions and aligns source fields to target fields.

4. Transform

Mapped data is cleaned, formatted, and converted into the required structure.

5. Validate

Data is checked for correctness, mandatory fields, formats, and business rules.

6. Load

Valid data is loaded into the target system (database, file, API, etc.).

7. Log & Error Handling

Invalid data and process errors are recorded for debugging or reprocessing.

8. Monitor

System monitors job status, performance, and alerts on failures or anomalies.

Financial Data Ingestion & Auto-Population

The Credit Assessment System requires complete and accurate financial information to calculate ratios, scores, and the final borrower rating.
Since the Core Banking System (CBS) does not store detailed financial statements, the system supports **three user-friendly methods** to bring audited financial data into the rating workflow:

1. **Excel Upload (Primary & Preferred Method)**
2. **OCR Upload (PDF/Image Recognition)**
3. **Manual Entry (Fallback Method & NEW Customers)**

Regardless of the method used, the system automatically fills the financial forms, computes all ratios using predefined formulas, and calculates the final rating in real-time.

A. What Data Comes From CBS

When the user enters a CIF, the system automatically fetches the following CBS information:

- Customer Name
- Entity Type
- Industry / Sector
- CINET number
- Customer Status (Active, Closed, etc.)
- Loan Accounts (Account ID, Type, Sanctioned Limit, Outstanding, Overdues)
- Collateral Details (if available)

CBS does NOT provide: Revenue, Assets, Liabilities, EBITDA, Inventory, Profit, Borrowings break up, etc.
These must come from Excel/OCR or manual entry.

CBS data is used only to identify the customer and show current exposure.

B. Staging Area Approach

Because CBS is owned by another vendor, all CBS data first comes into a **secure staging area** before being used.

Functionally, the staging area works like a **mailbox**:

1. CBS places customer and loan data in the staging folder.
2. The credit system picks the files from staging.
3. System fills customer details automatically in Step-1 of the Assessment.

The staging area ensures:

- Clean separation between CBS and our system
- Full audit trails
- Simple, secure data exchange
- No need for CBS vendor changes

C. Excel Upload – Primary Method for Financial Statements

This is the main method used by the bank because Excel provides the cleanest audited values.

Step-by-Step Functional Flow

1. User uploads the bank's standard Excel template.
2. System checks:
    - Is format correct?
    - Are all required fields present?
    - Are the numbers valid?
3. System reads every financial value from the Excel:
    - Revenue
    - COGS
    - EBITDA
    - Net Profit
    - Current Assets / Liabilities
    - Inventory
    - Receivables / Payables
    - Short-term & Long-term Borrowings
    - Total Assets / Liabilities
    - Equity
    - Interest Expense
4. System automatically fills all these values into:

- Balance Sheet Section
- Profit & Loss Section
- Cash Flow Section (if available)

5. User does NOT need to type anything manually.
6. All fields remain editable so the analyst can correct or adjust values.

D. OCR Upload – If Excel Is Not Available

If the user uploads a **PDF or scanned image** of financial statements:

1. The OCR engine reads values directly from the PDF.
2. Extracted values appear on screen for review.
3. User can correct any mistakes.
4. Once confirmed, the system treats it the same as Excel upload.

OCR ensures the bank can still proceed with assessments even if the customer only gives a PDF.

E. Manual Entry – Fallback Method

If no Excel or PDF is available:

1. User manually enters financial values.
2. System immediately calculates ratios & scoring.
3. All inputs remain editable.

This ensures assessments can continue without delay.

F. Auto-Population of Assessment Form

Once financial data is received through Excel, OCR, or manual entry, the system:

1. Automatically fills:

- Balance Sheet
- P&L Statement
- Cash Flow Statement
- Financial Projections (if enabled)
- All parameter values used in the rating template

2. No retyping required

Every financial input field is pre-filled.

3. Every field remains editable

If the analyst changes any number:

- All ratios update instantly
- All scores recalculate automatically
- Final rating adjusts in real time

G. Ratio Calculation – Explanation

The system uses standard banking formulas.
Examples:

Current Ratio

= Current Assets ÷ Current Liabilities

Quick Ratio

= (Current Assets – Inventory) ÷ Current Liabilities

Debt/Equity Ratio

= Total Debt ÷ Shareholder Equity

Interest Coverage Ratio

= EBITDA ÷ Interest Expense

Working Capital Cycle

= Receivable Days + Inventory Days – Payable Days

All these values are calculated **automatically** by the system.

No user calculation is required.

H. Scoring & Final Rating – Simple Explanation

1. Each ratio has a scoring rule based on bank thresholds.
   Example:
   - Current Ratio > 2.0 ⟶ Score: 4
   - Current Ratio < 1.0 ⟶ Score: 1
2. Each parameter has weightage defined in the Rating Template.
   Example:
   - Current Ratio Weight = 5%
   - Profitability Weight = 10%
3. System applies the weightage to each score.
4. Total weighted score is calculated.
5. Final Score maps to rating grade (A+, A, BBB, BB, etc.)

This calculation is **fully automated**.

I. Editable Inputs & Audit Trail

Editable Inputs

- All imported values (Excel/OCR)
- All manually entered values
- All projected values

Non-Editable Inputs

- System-calculated ratios
- System-calculated weighted scores
- Final rating grade (unless adjusted in "Manual Adjustment Layer")

J. End-to-End Example (Functional)

1. User enters CIF → system fetches customer info from CBS.
2. User uploads Excel for FY 2023.
3. System reads all 50+ financial fields.
4. System fills the entire financial form automatically.
5. System calculates:
    - 15+ ratios
    - Section scores
    - Weighted contributions
    - Final credit rating
6. User edits one value (e.g., Inventory).
7. System instantly recalculates ratios, scores, and rating.
8. User submits assessment for approval.
9. System stores a complete snapshot for audit.

K. Why This Approach Works for the Bank (Business Benefits)

- No dependency on CBS for financials
- No manual calculations needed
- Faster assessment turnaround
- Cleaner, standardized financial data
- All ratios & ratings fully automated
- Supports Maker–Checker–Approver workflow

- Full audit trail for compliance
- Supports both new and existing customers
- Supports projections & forecasting
- Works even when only PDFs exist (OCR fallback)

MASTER FINANCIAL RATIO TABLE

Ratio Name	Formula	Required Fields	Category	Bank Requires Yes/No
Current Ratio	Current Assets / Current Liabilities	Current Assets, Current Liabilities	Liquidity	
Quick Ratio	(CA – Inventory) / CL	Current Assets, Inventory, Current Liabilities	Liquidity	
Cash Ratio	Cash & Equivalents / CL	Cash & Cash Equivalents, Current Liabilities	Liquidity	
Working Capital	CA – CL	Current Assets, Current Liabilities	Liquidity	
Working Capital Ratio	WC / Total Assets	Current Assets, Current Liabilities, Total Assets	Liquidity	
Debt to Equity	Total Debt / Equity	Short-Term Borrowings, Long-Term Borrowings, Equity	Leverage	
Total Liabilities to Total Assets (TLTA)	Total Liabilities / Total Assets	Total Liabilities, Total Assets	Leverage	
Debt/EBITDA	Total Debt / EBITDA	Short-Term Borrowings, Long-Term Borrowings, EBITDA	Leverage	
Debt/Capital	Total Debt / (Debt + Equity)	Total Debt, Equity	Leverage	
Interest-Bearing Debt Ratio	Interest-Bearing Debt / Total Assets	Interest-Bearing Debt, Total Assets	Leverage	
Interest Coverage Ratio (ICR)	EBITDA / Interest Expense	EBITDA, Interest Expense	Leverage	

Commented [UP22]: Report module should have functionality to generate report based on one or more of these ratios,
for example portfolio of borrowers having current ratio < 1.00 and/or debt to equity ratio <3 (this is only for example)

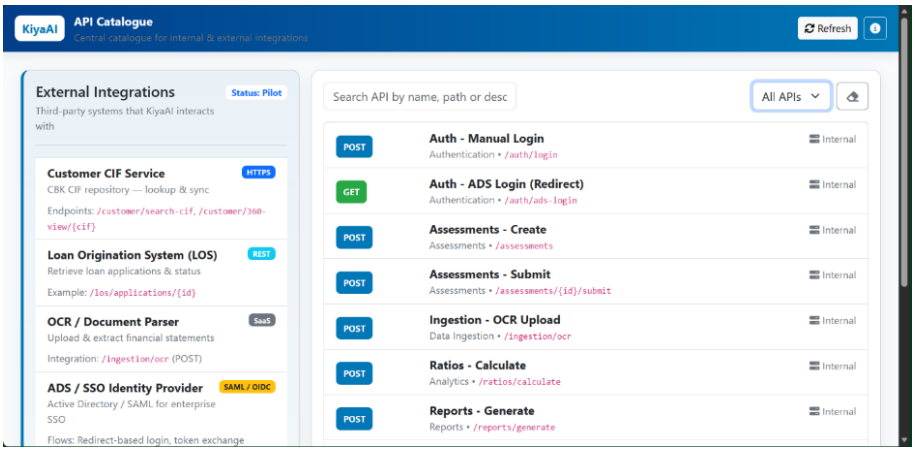
Commented [PS23R22]: To finalize the implementation of the ratio-based reporting functionality, we request you to please share the **list of ratio combinations and threshold conditions** that you would like to use for generating portfolio reports.
Kindly specify:
- The **ratios** to be included (e.g., Current Ratio, Debt-to-Equity, DSCR, etc.)
- The **cut-off values / thresholds** for each ratio
- The **logical conditions** to be applied (e.g., AND / OR combinations)

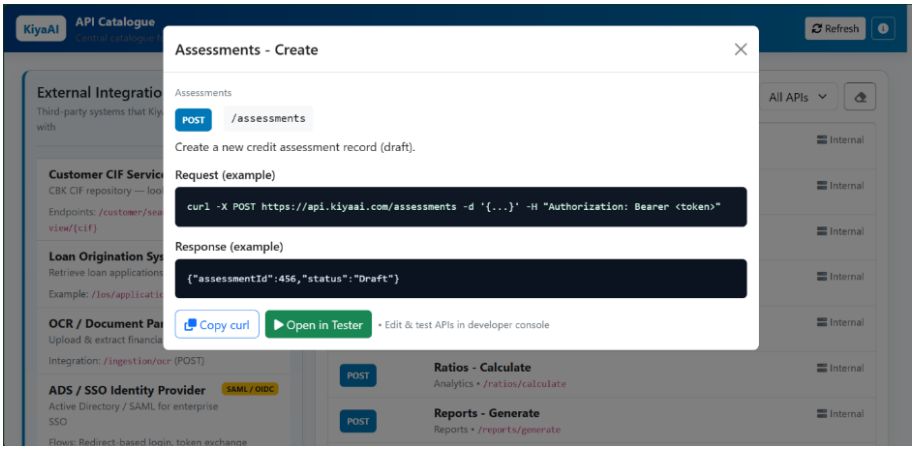
Fixed Charge Coverage Ratio (FCCR)	(EBITDA – CAPEX) / (Interest + Principal Due)	EBITDA, CAPEX, Interest Expense, Principal Due	Leverage	
LT Debt to Capitalization	LT Borrowings / (LT Borrowings + Equity)	LT Borrowings, Equity	Leverage	
Gross Profit Margin	(Revenue – COGS) / Revenue	Revenue, COGS	Profitability	
EBITDA Margin	EBITDA / Revenue	EBITDA, Revenue	Profitability	
Operating Margin (EBIT Margin)	EBIT / Revenue	EBIT, Revenue	Profitability	
Net Profit Margin	NPAT / Revenue	NPAT, Revenue	Profitability	
ROA	NPAT / Total Assets	NPAT, Total Assets	Profitability	
ROE	NPAT / Equity	NPAT, Equity	Profitability	
ROCE	EBIT / (Total Assets – CL)	EBIT, Total Assets, Current Liabilities	Profitability	
ROIC	NOPAT / Invested Capital	NOPAT, Invested Capital	Profitability	
Asset Turnover	Revenue / Total Assets	Revenue, Total Assets	Profitability	
Inventory Turnover	COGS / Inventory	COGS, Inventory	Efficiency	
Receivables Turnover	Revenue / AR	Revenue, Accounts Receivable	Efficiency	
Payables Turnover	COGS / AP	COGS, Accounts Payable	Efficiency	
Receivable Days	(AR / Revenue) × 365	Accounts Receivable, Revenue	Efficiency	
Inventory Days	(Inventory / COGS) × 365	Inventory, COGS	Efficiency	
Payable Days	(AP / COGS) × 365	Accounts Payable, COGS	Efficiency	
Working Capital Cycle	Rec Days + Inv Days – Pay Days	AR, Inventory, AP, Revenue, COGS	Efficiency	
Fixed Asset Turnover	Revenue / Net Fixed Assets	Revenue, Net Fixed Assets	Efficiency	
Capital Employed Turnover	Revenue / Capital Employed	Revenue, Capital Employed	Efficiency	
CFO to Debt	CFO / Total Debt	CFO, Total Debt	Cash Flow	

Cash Conversion Ratio	CFO / EBITDA	CFO, EBITDA	Cash Flow	
Free Cash Flow	CFO – CAPEX	CFO, CAPEX	Cash Flow	
FCF to Debt Service	FCF / (Interest + Principal)	FCF, Interest Expense, Principal Due	Cash Flow	
DSCR	(EBITDA – Taxes – WC Changes) / (Interest + Principal)	EBITDA, Taxes, WC Changes, Interest, Principal Due	Cash Flow	
Operating Cash Flow Ratio	CFO / Current Liabilities	CFO, Current Liabilities	Cash Flow	
Equity Ratio	Equity / Total Assets	Equity, Total Assets	Capital Structure	
Debt Ratio	Total Debt / Total Assets	Total Debt, Total Assets	Capital Structure	
Financial Leverage Index	ROE / ROA	ROE, ROA	Capital Structure	
Contract Profitability Ratio	Contract Profit / Contract Revenue	Contract Profit, Contract Revenue	Contracting	
Cost to Complete (%)	Remaining Cost / Total Estimated Cost	Remaining Cost, Total Estimated Cost	Contracting	
Billing Efficiency	Billed Amount / Work Completed	Billed Amount, Work Completed	Contracting	
Order Book to Revenue	Order Book / Revenue	Order Book, Revenue	Contracting	
Advance Utilization	Unutilized Advances / Total Advances	Unutilized Advances, Total Advances	Contracting	
Lender's Case DSCR	CFA / Debt Service	Cash Flow Available, Debt Service	Project Finance	
Interest Reserve Coverage	Interest Reserve / Interest Requirement	Interest Reserve, Interest Requirement	Project Finance	
Bank Turnover Ratio	Bank Turnover / Sales	Bank Turnover, Revenue	SME/MSME	
GST Turnover Ratio	GST Turnover / Audited Turnover	GST Turnover, Audited Turnover	SME/MSME	
Promoter Contribution Ratio	Promoter Contribution / Project Cost	Promoter Contribution, Project Cost	SME/MSME	

Net Working Capital Gap	WC Requirement – NWC	WC Requirement, Net Working Capital	SME/MSME	
Revenue Growth %	(CY Revenue – PY Revenue) / PY Revenue	Current Year Revenue, Previous Year Revenue	Growth	
Profit Growth %	(CY NPAT – PY NPAT) / PY NPAT	NPAT CY, NPAT PY	Growth	
EBITDA Growth %	(CY EBITDA – PY EBITDA) / PY EBITDA	EBITDA CY, EBITDA PY	Growth	
Asset Growth %	(Assets CY – Assets PY) / Assets PY	Total Assets CY, Total Assets PY	Growth	
Security Coverage Ratio	Realizable Security Value / Outstanding Exposure	Realizable Security Value, Outstanding Exposure	Risk	
Loan-to-Value (LTV)	Loan Amount / Asset Value	Loan Amount, Asset Value	Risk	
DP Utilization	Outstanding / Drawing Power	Outstanding, Drawing Power	Risk	
Limit Utilization	Avg Utilization / Sanction Limit	Average Utilization, Sanction Limit	Risk	

6. API Catalogue





The API Catalog defines all backend services that the KiyaAI Credit Assessment System exposes or consumes.
These APIs are used by the frontend, admin modules, workflow engine, data ingestion components, and external systems where integration is required.

APIs ensure that all modules interact consistently and securely through REST-based communication.

The API Catalogue dashboard consists of the following sections:

A. External APIs Panel

This section lists all **third-party or client-owned systems** integrated with the solution. Each external API displays:

- API/System Name
- Integration Type (REST, SOAP, SAML, OIDC, SMTP, etc.)
- Base URL / Endpoint Pattern
- Purpose (e.g., CIF Search, Document Parsing, SSO Authentication)
- Example Endpoints

The catalogue highlights:

- Endpoint Paths
- Supported HTTP Methods
- Functional Purpose
- Input Requirements
- Output Structure
- Authentication/Headers
- Dependencies
- External System Mapping

7. Deployment Mechanism

The system supports modern deployment methodologies that ensure reliable and repeatable releases.

A. Deployment Architecture

- **3-Tier Architecture**
  1. **Frontend (Angular)**
  2. **Backend (Spring Boot)**
  3. **Database (MS-SQL/Oracle)**

B. Deployment Models Supported

- **On-Premises Deployment (Preferred by CBK)**
- **Cloud Deployment (Optional)**
  - Private cloud / Containerized
  - Docker + Kubernetes-enabled (optional)

INFRASTRUCTURE REQUIREMENTS

A. Hardware Requirements

(Indicative, can be adjusted based on load)

Layer	Specification	Recommendation
Frontend Server		
Backend Server		
Database Server		
File Storage		

B. Operating Systems

- **Windows Server** – Recommended for ADS integrations

C. Network & Connectivity

- HTTPS enabled
- SSL certificate (internal or public CA)
- Secure VPN/IP Whitelisting for external integrations
- Firewall rules for API communication

8. Software Pre-requisites

Will be shared by the KiyaAI Team during the Deployment Phase.

8.1. ENVIRONMENT SETUP

The solution will run across 3–4 environments:

Environment	Purpose
DEV	Developer testing
TEST / QA	Internal testing + automation
UAT	Client validation (CBK)
PRODUCTION	Live environment

Each environment mirrors production as closely as possible.

9. Project Documentation

The Project Documentation section lists all key documents that support the development, implementation, and ongoing use of the **KiyaAI Credit Assessment System**. These documents ensure that stakeholders—from business users to technical teams—have the necessary clarity for system understanding, maintenance, and onboarding.

A. Functional Specification Document (FSD)

Purpose

The FSD provides a **detailed functional description** of every module, workflow, and business rule defined in the BRD.
It translates business requirements into actionable functional behaviours for development teams.

Contents

- Module-level functional descriptions
- Field-by-field specifications
- User interactions and system responses
- Workflow logic (including maker–checker, approvals, and validations)
- Error messages and exception handling
- Business rules, scoring logic, ratio formulas
- Integration specifications with CIF/LOS/OCR/ADS
- UI wireframes (if applicable)

B. User Manual

Purpose

The User Manual guides end-users in operating the system effectively. It includes navigation flows, screenshots, and instructions for daily activities.

Contents

- Login instructions (Manual + ADS)
- Using the Dashboard
- Creating and managing assessments
- Uploading financial statements (OCR/Excel)
- Ratio interpretation
- Viewing and generating reports
- Template and parameter management

- Admin activities (User, Roles, RBAC, Lookups)
- Troubleshooting and FAQs

Audience

- Analysts
- Reviewers
- Administrators
- Risk & Credit Teams
- Business Users

C. Deployment Guide

Purpose

The Deployment Guide provides step-by-step instructions for setting up and deploying the system in different environments.

Contents

- Prerequisites
- Required software and tools
- Server configuration steps
- Database setup (Oracle schemas, tables, seeds)
- Environment variable configuration
- Email and OCR configuration
- How to deploy frontend & backend builds
- Log configuration and monitoring setup
- Rollback strategies
- Post-deployment validation checklist

Audience

- IT Infrastructure Teams
- DevOps Teams
- System Administrators

———*END OF THE DOCUMENT*———