

## Collaborative Ability Evaluation and Data Collection Plan

### 1. Collaborative Ability Evaluation Method

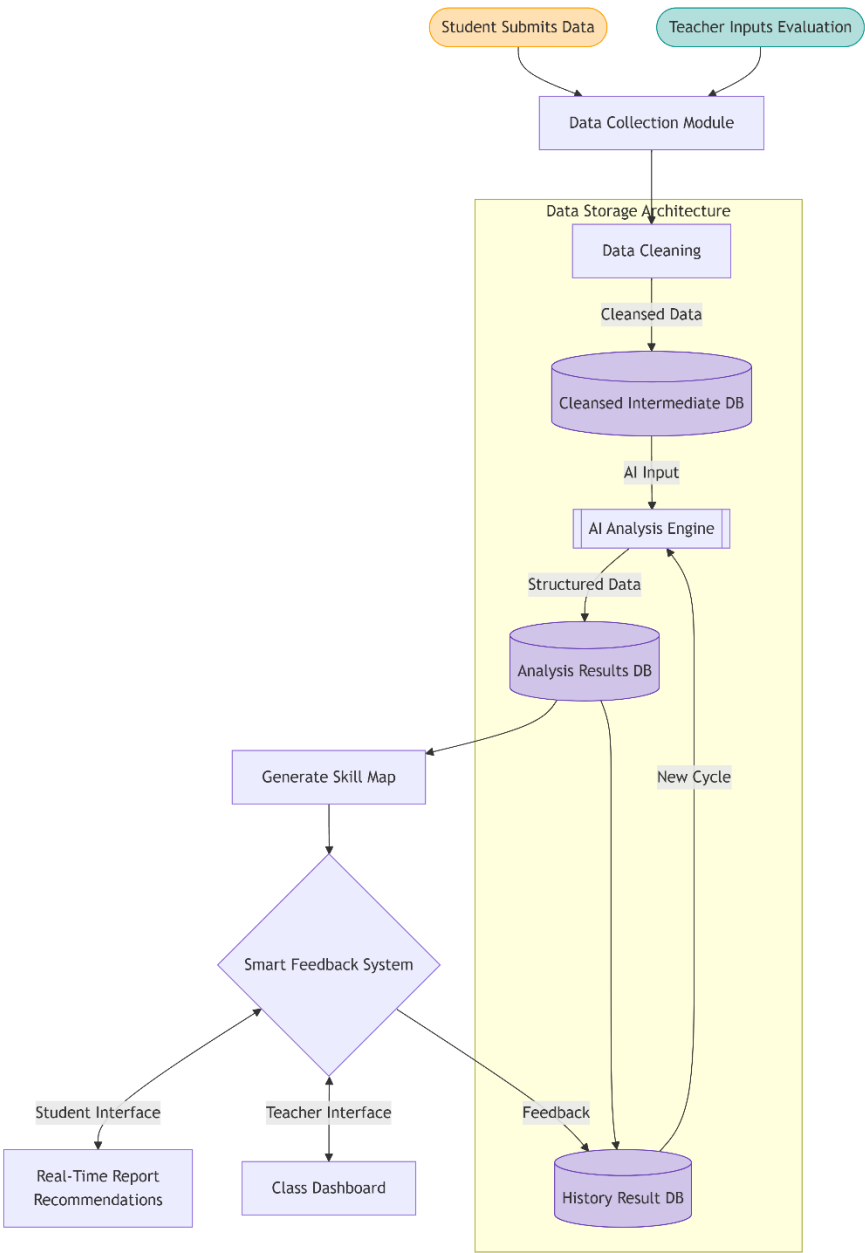
#### 1.1 Collaborative Ability Evaluation Dimensions

Evaluation Dimension	Definition	Quantitative Metrics	Data Sources	Collection Method
<b>Task Contribution</b>	Frequency of students taking initiative to assign or assume specific roles	1. Task Allocation Ratio (%) 2. Task Completion Timeliness (%) 3. Key Outcome Relevance (%)	Group Task Allocation Table, Project Deliverables (e.g., documents/code), Peer Evaluation Files	Students fill out allocation table, submit project reports at each stage
<b>Communication Engagement</b>	Efficiency in proposing suggestions, resolving disagreements, and driving group decisions	1. Effective Speaking Frequency (times/stage) 2. Active Questioning Frequency (times/stage)	Online Collaboration Platform Logs, Meeting Summaries	Manual upload of platform logs
<b>Conflict Resolution Ability</b>	Performance in resolving conflicts and coordinating differing opinions, measured through conflict records and resolution outcomes	1. Conflict Negotiation Frequency (times/stage) 2. Solution Adoption Rate (%)	Online Collaboration Platform Logs, Meeting Summaries, Teacher Observation Notes	Students submit meeting summaries, teachers provide brief evaluations
<b>Team Coordination Ability</b>	Behavior of completing assigned tasks on time and proactively helping peers solve problems	1. Role Switching Frequency (times/task) 2. Task Dependency Coordination Success Rate (%)	Online Collaboration Platform Logs, Meeting Summaries, Task Management Tools	Manual upload of platform logs

## 1.2 Core File Collection List

File Type	Specific Format	Collection Method	Data Processing Purpose
<b>1. Initial Group Task Allocation Table</b>	Electronic spreadsheet (Excel/Google Sheets) or structured text, including: - Task allocation - Responsible person and assistants - Planned deadline	Group leader submits to course platform or designated email	Calculate Task Allocation Ratio, Task Completion Timeliness
<b>2. Individual Submission Files</b>	- Individual reports (PDF/DOCX) - Code/design files (GitHub links)	Upload via course system or code repository synchronization	Analyze Individual Contribution and Team Outcome Relevance
<b>3. Periodic Group Reports</b>	- Mid-term report (PPT/PDF) - Final presentation materials - Meeting minutes (DOCX)	Submit to system in stages as required by the course	Track Project Progress Consistency, Problem-Solving Trajectory
<b>4. Teacher Evaluation Files</b>	- Evaluation form (including task completion, collaboration ability, etc.) - Written comments (for team and individuals)	Teachers input via system or upload documents	Provide Human Validation Baseline for AI model training and result calibration
<b>5. Group Communication Records</b>	- Online discussion logs - Meeting summaries	Students submit manually or system automatically captures (e.g., via collaboration tool APIs)	Calculate Effective Communication Frequency, Conflict Resolution Efficiency

2. Data Collection Process Design



3. Data Table Design

3.1 Group Task Allocation Table (Filled by Students)

Task Name	Responsible Person	Assistants	Planned Start Time	Planned Deadline	Actual Completion Time	Remarks
Requirements	Zhang San	Li Si	2023-	2023-10-	2023-10-05	Completed prototype

Analysis			10-01	05		design
Code Development	Li Si	Wang Wu	2023-10-06	2023-10-12	2023-10-11	Core modules tested

### 3.2 Peer Evaluation Form

Evaluation Item	Evaluation Criteria (1-5)	Student A Score	Student B Score	Student C Score	Written Feedback (Anonymous)
<b>Communication Ability</b>	Actively shares information and expresses ideas clearly	4	5	3	"Strong coding skills but slow feedback"
<b>Collaboration Attitude</b>	Respects others' opinions and actively participates	5	4	2	"Communicates actively but occasionally off-topic"
<b>Responsibility</b>	Completes tasks on time and takes initiative	3	5	4	-

#### Data Processing:

**Peer Score** = (Total score - Lowest score - Highest score) / (Number of evaluators - 2) \* (Exclude outliers)\*

### 3.3 Teacher Evaluation Form

#### 3.3.1 Periodic Evaluation Form

Evaluation Type	Evaluation Item	Group Score (1-5)	Zhang San	Li Si	Wang Wu	Comments
<b>Group Overall</b>	Requirements Completeness	4	-	-	-	Covers core scenarios but lacks edge cases
<b>Individual Evaluation</b>	Logical Rigor	-	5	4	3	Zhang San's document structure is clear
<b>Individual Evaluation</b>	Collaboration Contribution	-	3	5	2	Li Si actively coordinates disagreements

3.3.2 Group Overall Evaluation Form

Evaluation Type	Evaluation Item	Group Score (1-5)	Zhang San	Li Si	Wang Wu	Comments
Group Overall	Requirements Completeness	4	-	-	-	Covers core scenarios but lacks edge cases
Individual Evaluation	Logical Rigor	-	5	4	3	Zhang San's document structure is clear
Individual Evaluation	Collaboration Contribution	-	3	5	2	Li Si actively coordinates disagreements

4. Group Discussion Record Table

4.1 Meeting Summary

Discussion Time	Participants	Discussion Topic	Key Decisions	Follow-up Tasks
2023-10-03 14:00	Zhang San, Li Si, Wang Wu	Requirement Prioritization	Complete MVP version first	Zhang San revises requirement documentation
2023-10-10 10:30	Li Si, Wang Wu	Test Case Design	Add 30% test cases via manual testing	Li Si develops test scripts

4.2 Speaking Records Details (Per Meeting)

Discussion Topic	Speaker	Number of Speeches	Total Speaking Duration	Key Points Summary
Requirement Prioritization	Zhang San	2	5 minutes	Prioritize core functionality development
Requirement Prioritization	Li Si	3	8 minutes	Emphasize test coverage
Requirement Prioritization	Wang Wu	1	2 minutes	Support Zhang San's proposal

(As an alternative, read the group discussion chat logs directly for data analysis.)