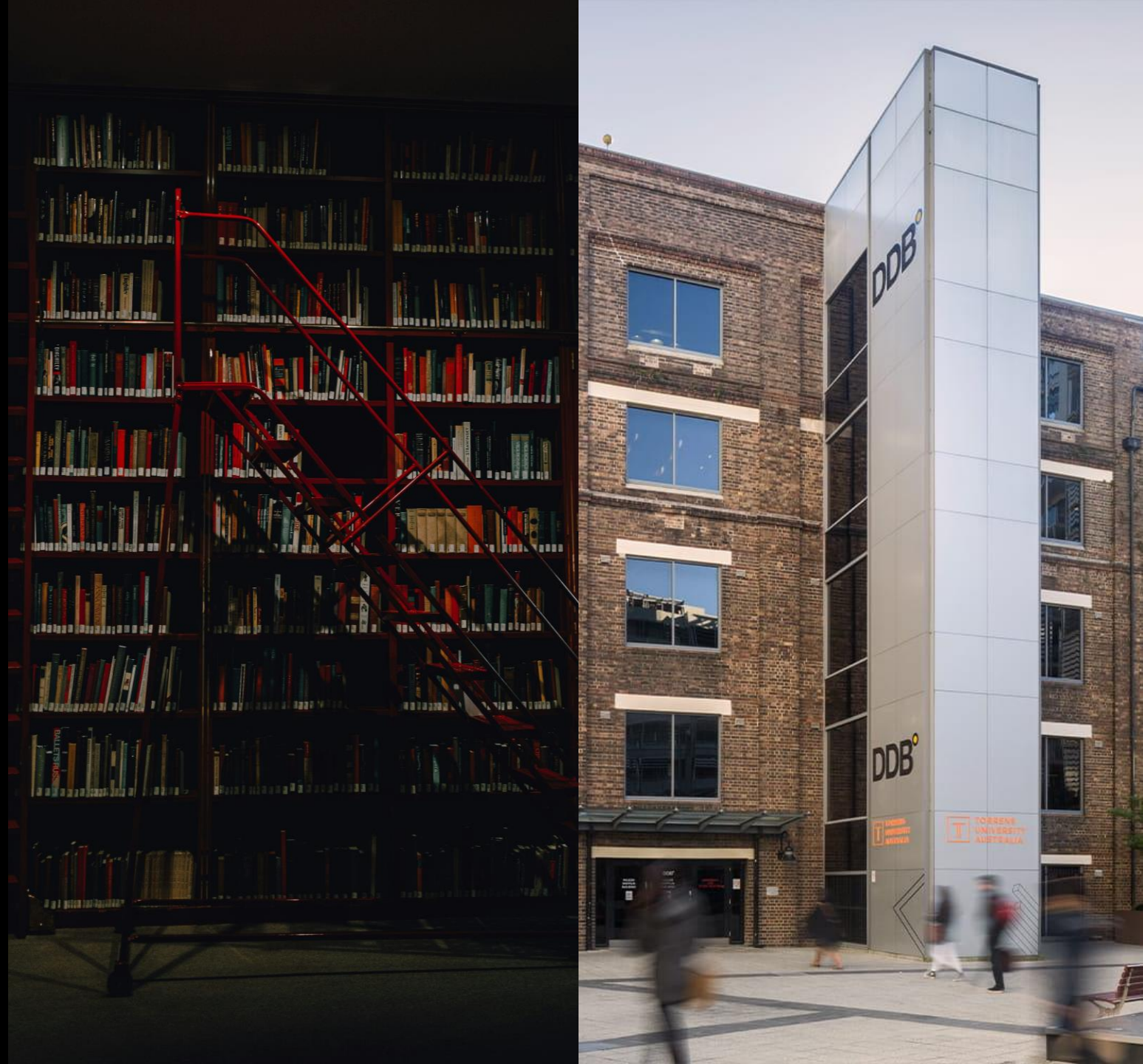

TTRACK

ACADEMIC PROGRESS TRACKER

Smartly matcher between

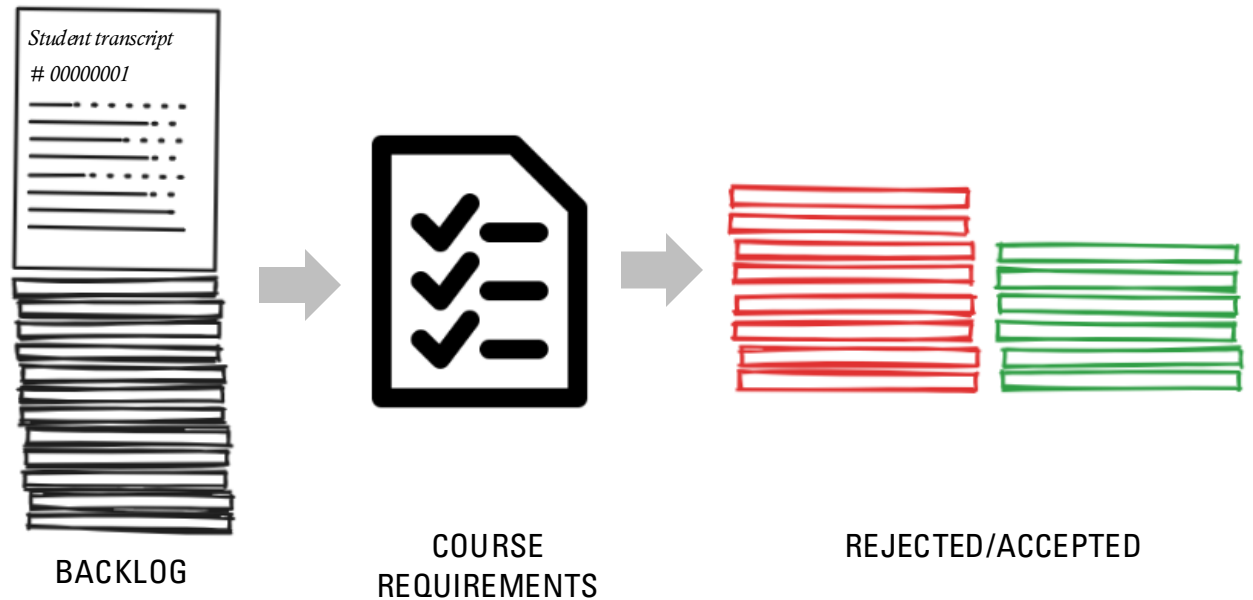
Student Curriculums **X** Course Requirements





PROBLEM STATEMENT

Advisors and Students lack real-time clarity on degree progress.



Transcript checks are manual, slow, error-prone and lead to academic uncertainty.

PROPOSED SOLUTION



TTrack – Degree Tracker

Login

Input

Results

Student Records

 **TTrack – Torrens Degree Tracker** 

Built by students for academic advisors at Torrens University Australia.
Guided by Dr. Atif Qureshi – Software Development Management, 2025

Transcript

Upload Transcript

Try with Sample Data

Download the Template

Curriculum

Upload Curriculum

Try with Sample Data

Download the Template

Process Data

Transcript Table

	Year	Semester	Subject Code	Subject Name	Credit Points	
1	2023	1	SEP401	Software ...	10	Di
2	2023	2	SDM404	Software ...	10	Cr
3	2024	1	REM502	Research ...	10	H
4	2024	2	Elective 1	Elective Subject	10	C

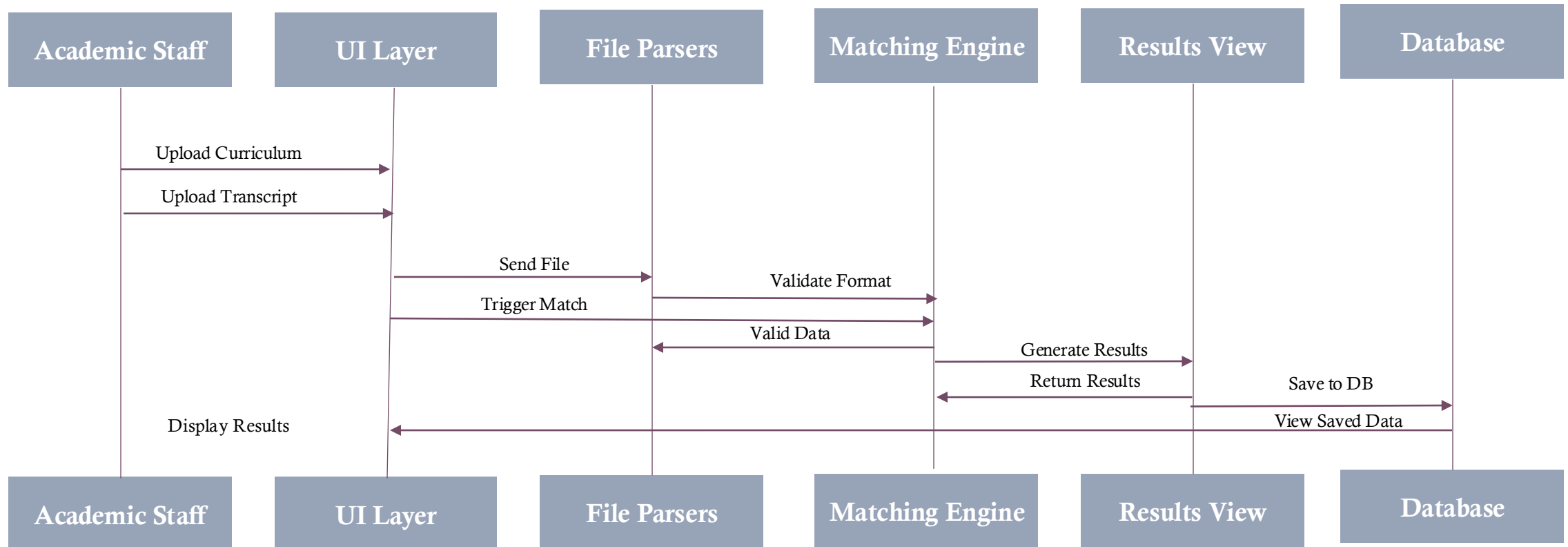
Curriculum Table

	Year	Semester	Subject Code	Subject Name	Type
1	1	1	SEP401	Software ...	Core
2	1	1	HCD302	Human Centre...	Core
3	1	2	SBD403	Secure by Design	Core
4	1	2	SDM404	Software ...	Core

FROM +30 MINUTES TO A FEW SECONDS!

We automated academic tracking by matching student transcripts to curriculums with precision & clarity, powered by *intelligent data processing*.

SYSTEM ARCHITECTURE



Our modular, event-driven architecture follows SOLID principles:

— UI, logic and data isolated for testability, scalability and future cloud integrations.

KEY FEATURES

Upload.

Match.

Visualize.

Export.


From matching engine to
elective suggestions...


TTrack delivers actionable
academic insights.


TTrack - Degree Tracker

Login Input **Results** Student Records

Student: Luis
University: Torrens

Degree Progress  30%

 Save This Data to Database

 Download Processed Data to CSV

Subject Matching Results

	Subject Code	Subject Name	Type	Status
0	SEP401	Software Engineering Principles	Core	✓ Done

Progress Summary

	Type	✓ Done	✗ Missing	Total
0	AI Specialisation	0	4	4

Suggested Electives

	Subject Code	Subject Name	Type	Status
12	ELECTIVE 2	Elective Subject	Elective	✗ Missing

TESTING AND VALIDATION



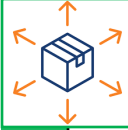


Pytest-covered modules, edge case validation and live usability testing were used to ensure quality across transcript structures and curriculum formats.

```
===== test session starts =====
platform darwin -- Python 3.10.12, pytest-8.2.0, pluggy-1.5.0 -- /Users/luisfaria/.pyenv/versions/3.10.12/bin/python3.10
cachedir: .pytest_cache
PyQt5 5.15.11 -- Qt runtime 5.15.17 -- Qt compiled 5.15.14
django: version: 5.1.2
rootdir: /Users/luisfaria/Desktop/sEngineer/masters_SWEAI/T1-Software-Development-Management/projects/TTrack_v1
configfile: pytest.ini
testpaths: tests
plugins: asyncio-0.24.0, qt-4.4.0, docker-tools-3.1.3, celery-1.1.3, cov-4.1.0, django-4.9.0, anyio-3.7.1, Faker-30.8.2, mock-3.14
asyncio: mode=strict, default_loop_scope=None
collected 17 items

tests/test_curriculum_matching.py::TestCurriculumMatching::test_normalize_subject_codes PASSED [ 5%]
tests/test_curriculum_matching.py::TestCurriculumMatching::test_match_transcript_complete PASSED [ 11%]
tests/test_curriculum_matching.py::TestCurriculumMatching::test_generate_progress_summary PASSED [ 17%]
tests/test_curriculum_matching.py::TestCurriculumMatching::test_suggest_electives PASSED [ 23%]
tests/test_curriculum_matching.py::TestCurriculumMatching::test_empty_transcript PASSED [ 29%]
tests/test_file_handling.py::TestExcelLoading::test_load_valid_excel PASSED [ 35%]
tests/test_file_handling.py::TestExcelLoading::test_load_nonexistent_file PASSED [ 41%]
tests/test_file_handling.py::TestExcelLoading::test_load_invalid_excel PASSED [ 47%]
tests/test_file_handling.py::TestThemeDetection::test_is_dark_mode PASSED [ 52%]
tests/test_integration.py::TestApplicationIntegration::test_application_startup PASSED [ 58%]
tests/test_integration.py::TestApplicationIntegration::test_end_to_end_workflow PASSED [ 64%]
tests/test_main_window.py::TestMainWindow::test_window_initialization PASSED [ 70%]
tests/test_main_window.py::TestMainWindow::test_theme_switch PASSED [ 76%]
tests/test_main_window.py::test_application_startup PASSED [ 82%]
tests/test_ui_tabs.py::TestInputTab::test_input_tab_initialization PASSED [ 88%]
tests/test_ui_tabs.py::TestInputTab::test_file_loading PASSED [ 94%]
tests/test_ui_tabs.py::TestResultsTabs::test_results_tab_initialization PASSED [100%]

----- coverage: platform darwin, python 3.10.12-final-0 -----
Name                               Stmts  Miss  Cover   Missing
-----
gui/main_window.py                  53      5    91%   53, 58, 109-113
gui/utils.py                        17      0   100%
main.py                             15      8    47%   9-11, 14-18
resolvers/engine.py                 27      3    89%   44, 48, 56
tests/__init__.py                   1      0   100%
tests/conftest.py                   19      1    95%   41
tests/test_curriculum_matching.py    50      2    96%   103, 108
tests/test_file_handling.py          50      9    82%   85-99
tests/test_integration.py            63      6    90%   44, 96-102
tests/test_main_window.py            44      8    82%   17, 49-52, 56, 80, 84
tests/test_ui_tabs.py                51      0   100%
ui/helpers.py                       53     33    38%   9, 17, 22-26, 32-71
ui/tab_input.py                     155     40    74%   220-253, 266-297
ui/tab_results.py                    58      0   100%
utils/data_processor.py              59     34    42%   39, 44, 46, 51, 53, 56-59, 68-112
utils/tab_controller.py              28      3    89%   52-54
utils/theme_manager.py               29      3    90%   40, 209-210
TOTAL                               772    155    80%
```

OUTCOMES... FUTURE WORK

 PyQt5 + pandas integration	 Supabase BaaS Integration	 Distribution & Engine 2.0	 AI Enhancement	 Enterprise Scale
v1.0.0 <ul style="list-style-type: none">• PyQt5 + pandas integration• Light/dark mode support• File upload and preview with pandas• Matching engine: transcript x curriculum• Build scripts for Windows and macOS• Pytest setup	v2.0.0 <ul style="list-style-type: none">• Electron version for testing• Database backend using PostgreSQL• User Authentication: Login/Register• Layered Architecture• Cloud Sync: Fallback and encryption• Pytest 2.0	v3.0.0 <ul style="list-style-type: none">• Layered Architecture• Cloud Sync: Fallback and encryption• Matching Engine 2.0• Pytest 2.0	v4.0.0 <ul style="list-style-type: none">• API integration: uni ecosystem• Semantic matching: NLP based• Predictive analytics: forecasting• Recommendation engine• Machine Learning	v5.0.0 <ul style="list-style-type: none">• Multi-tenant architecture institution-wide• Advanced analytics with BI dashboards• Integration APIs• Web application• Mobile application



DEMO INSTRUCTIONS

In this live demo, we will:

1. Create an account and login
2. Upload a transcript
3. Match it to a curriculum
4. Explore results
5. Export insights
5. Save in database and locally
6. Retrieve saved data

THANK YOU!

Shout Out to the Open-Source Community!

TTrack is built on top of these awesome libraries:



supabase



pytest

SCAN TO SHARE YOUR THOUGHTS!

