Assessment Timetable Scheduler

Development Blog

Dublin City University

COMSCI3

Student: Jingyuan Wu | Supervisor: Darragh O'Brien

Overview

This blog documents my week-by-week progress on the 3th Year Project from January to February 2026. I am working alone on this project. Each entry covers what I worked on, what went wrong, and what I learned.

Project: Assessment Timetable Scheduler — a desktop GUI application that schedules DCU 3th-year project presentations using Google OR-Tools constraint programming.

Week 1 — 25 November 2025

I read the project brief again and looked at OR-Tools examples.

Design decision:
I chose Google OR-Tools because it supports constraint programming and our lectures mentioned it.

I wrote a small test script. It had syntax errors and I didn't understand solver status.

This week was mostly learning.

Week 2 — 5 January 2026

I started the data model.

At first I stored students inside project objects. It was messy.

Design decision:
I changed to flat entities with ID references after reading supervisor feedback. This made JSON easier to save and load.

I wrote slice1 solver. It worked for small test data.

Week 3 — 16 January 2026

I worked on lecturer availability.

This was difficult because I needed extra variables for AND constraints.

I found examples on StackOverflow.

Big bug this week: supervisor constraint was reversed.

Testing:
I added a unit test after fixing it.

Week 4 — 23 January 2026

I started the GUI.

Design decision:
I chose Tkinter because it is simple and does not need extra install on DCU lab computers.

The availability grid had wrong click positions after scrolling. I fixed it using canvas coordinates.

Week 5 — 6 February 2026

I connected GUI to solver.

First timetable worked.

GUI froze while solving.

Design decision:
I kept solver simple without threading because project time was limited.

I also added CSV export.

Week 6 — 13 February 2026

I did more testing.

Found bugs:

- deleting lecturer did not update grid
- CSV column name typo
- infeasible data not detected

I added 15+ unit tests.

I asked one classmate to try the program. They were confused about supervisor setting, so I improved instructions.

Week 7 — 20 February 2026 (Final Week)

Final week.

I cleaned code, wrote README and user guide.

I tested with a DCU-style dataset.

Future improvement ideas:

- better GUI
- faster solver for large classes
- more user testing