

MCI project **First Milestone Report**

Team number: 7

Project Title: System to Synchronize External Schedules with Shift Management Platform

Milestone 1	Activities	Planned Outputs	Achieved Outputs
Restate the milestone from your Draft plan .	Restate the key activities from your draft plan.	Restate the planned outputs from your draft work plan.	Outline the actual outputs compared to what was projected (or type "same as planned")
In milestone 1, we planned to build a user interface that could display the Microsoft Teams Shifts data, and the user interface could detect any changes from the Microsoft Teams Shifts.	Follow the tutorial to practice using Microsoft Graph API	Following Microsoft tutorial, displaying calendar data on a web application	Same as planned
	Fetch authentication tokens on Microsoft Teams	Generate the tokens that can be used to call Microsoft Graph	Generated the tokens that include access to Microsoft Teams Shifts API
	Design and implement a user interface using Python	<ul style="list-style-type: none"> - Show corresponding date of the Shifts - Search button for users - Return searching result - Display Microsoft Teams Shifts data 	Same as planned
	Build a timetable to display the Microsoft Teams Shifts data	<ul style="list-style-type: none"> - Users should be able to see Microsoft Teams Shifts data on our web - Any modifications on Microsoft Teams Shifts should reflect on our web 	Built a timetable on our web page to display data. Changes can be displayed on the table when the user refreshes the page
	Register our application with the Microsoft identity platform - Microsoft Azure	Not mentioned in the draft plan	Registered our application on Azure and successfully got the application (client) ID and client secret. To do these, we created Microsoft developer accounts.
	Not mentioned in the draft plan	Not mentioned in the draft plan	Move from desk app to the web-based platform. We built a website for our system, including sign-in, authentication, Shifts display, calendar display, and new event functions.

Team reflection on progress

Provide some comments below regarding the completion of this milestone specifically around:

1. How is the project progressing?
2. Are there any differences between projected and actual outputs/outcomes?

1. How is the project progressing?

Overall, this milestone was progressing in line with our plans. This project is a joint-team project. The system has split into two parts. Our team duty is to work with the Microsoft Teams Shifts API and sync data from the source. To ensure consistency, we standardized the programming language like Python with team 8, and we were about to create a database before milestone planning. After we went through the basics (Django and Microsoft graph API), we realized that we could bypass the database and simply compare the source data that team 8 will provide. So we changed our design and started working on the Microsoft Graph API. All the members have finished their tasks and solved problems on time. The project progressed smoothly, and we successfully built our web to display the data from Microsoft Teams Shift before milestone 1.

- We encountered many difficulties in implementing the function of getting user's shifts, including reading JSON. It took us longer to finish this than we expected and delayed our progress, but we got it done before milestone 1.
- We built a web page as our interface. Reworking the Interface slightly delayed our progress, but we successfully finished it before milestone 1.
- The implementation of the login and logout system was completed earlier than we expected since Microsoft provides plenty of libraries for us, such as Microsoft Authentication Library (MSAL), for handling sign-in and access token flows.

We need to improve:

- Our development speed is a bit slow, and we need to increase the efficiency of development.
- The knowledge of Django and JSON. Lack of such knowledge slowed down our progress.

2. Are there any differences between projected and actual outputs/outcomes?

- Regarding the UI, we originally intended to write a user interface using Python's built-in methods for our client to search and get the data from the Microsoft Teams. However, during development, we found that users still needed to launch a browser to log in to their Microsoft account and grant permissions, which means that they should start a browser anyway. Besides, we found that the web interface was much better than the Python interface in terms of quality, user experience, and development efficiency. Therefore, we changed to use web pages as the interface rather than Python built-in UI.

Team reflection on managing problems

Have you encountered any problems to date?
If so, how have you managed them?

In the first develop iteration, we had encountered several problems as below:

- Problem: Difficulty in communicating with team 8. This project is a joint-team project. Some of the team 8 members are not in Adelaide, times difference is challenging, and it caused us to delay our development processing.
- Solution: We set up an online chat group on Facebook messenger to communicate with other teams more directly, which shortens the time as we need to make decisions.
- Problem: We were not familiar with API functions, JSON, and Django. As we have no experience in using API, we were hardly going to start our first step to construct our system.
- Solution: We completed an official tutorial on MS Graph, spent more time reading MS Graph API documents, and learned JSON and Django on W3school.
- Problem: The modified student account does not work as expected, and Microsoft Graph's authentication failed. Based on the user requirements, we are supposed to use our student account to sign in to the MS Teams, and the target data is stored on it. But we can not get access to register our app on Azure, and we also can not get resources in our uni.
- Solution: We created temporary developer accounts for each team member, and created our MS Team, so that we could continue to develop our API.

Supervisor assessment

Please, rate your team (1) effort, (2) project progress and (3) their self-reflection for milestone 1
Rating scale 1-10 as per standard marking scheme, ie 5 is a Pass and 7 is a credit.
Add some comments to explain your rating

Effort:

Progress:

Reflection: