

ResBot



Kevin Wright, Justin Prince, Vraj Patel



What is ResBot?

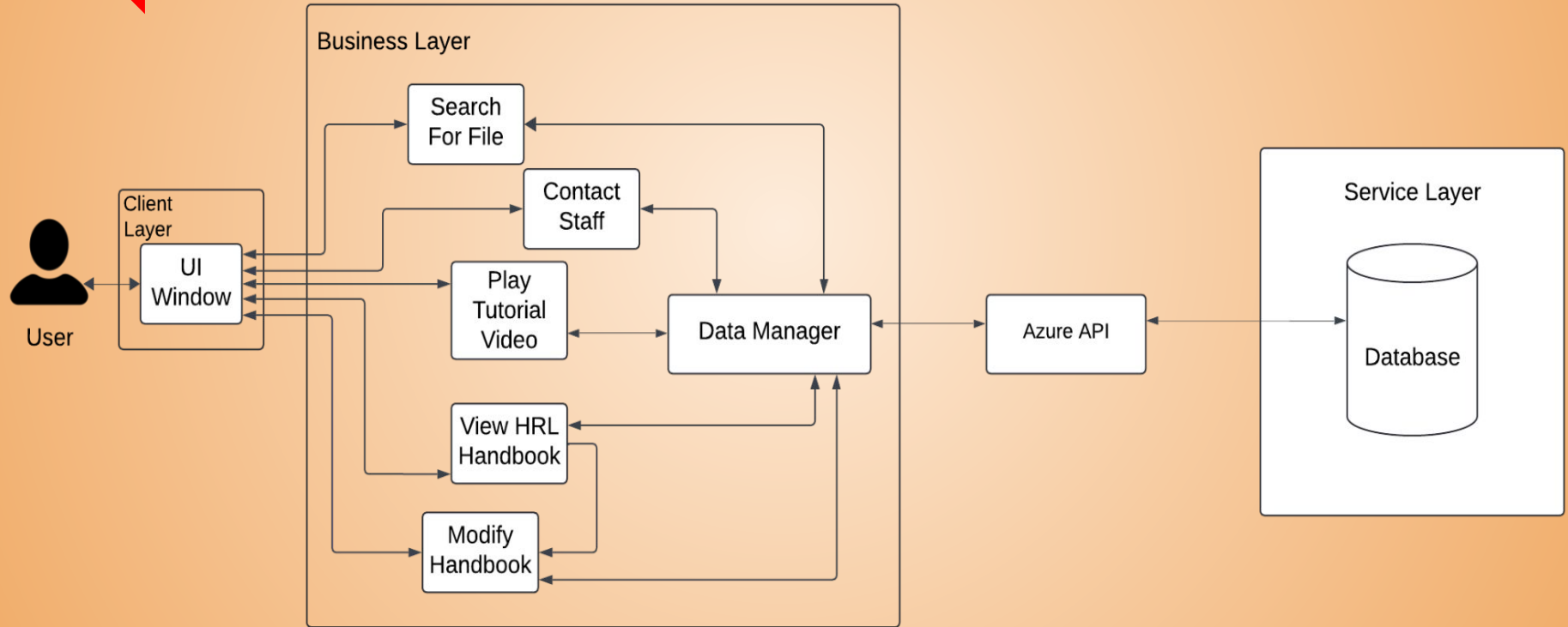
- A chatbot that is hosted through the university's HRL Microsoft Teams channel
- ResBot gives staff access to:
 - The employee handbook
 - Tutorial videos
 - Colleagues' contact information
 - Immediate responses to staff's questions
- Reduces onboarding time for both new and returning staff
- Promotes communication amongst HRL staff
- Reduces HRL costs
- Provides a more centralized solution



System Overview

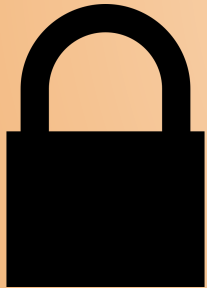
- ResBot is implemented via Microsoft Power Automate
- 3-tier architecture
 - Client layer
 - Microsoft Teams client server (web, mobile, or desktop)
 - Application layer
 - Application logic for functional requirements
 - Service Layer
 - Database
- Chatbot responses embedded into JSON messages

System Diagram



Actor Identification

HRL Student User
(View access only)



Authorized HRL Administrator
(View & Edit access)



Developer Administrator:
(Software updates, no file access)





Architectural Style

- 3-tier architecture
 - User Interface Layer
 - Uses Microsoft Power Automate to create UI elements (interactive tiles)
 - Customizes chatbot appearance
 - Application Logic Layer
 - Supplies logic for which files/information to return to the user
 - Service Layer
 - Azure Database for MySQL to host a scalable MySQL database to store and retrieve files/data.



Design Patterns

- Adaptor class
 - Allows otherwise incompatible interfaces to communicate without having their source codes modified
 - Compiles:
 - HRL Teams channel
 - Online staff registry
 - Staff form hub
 - HRL Youtube channel
- Decorator class
 - Adds functionality to an existing component without modifying its source code
 - ResBot enhances HRL Microsoft Teams channel without changing backend of the Teams channel itself

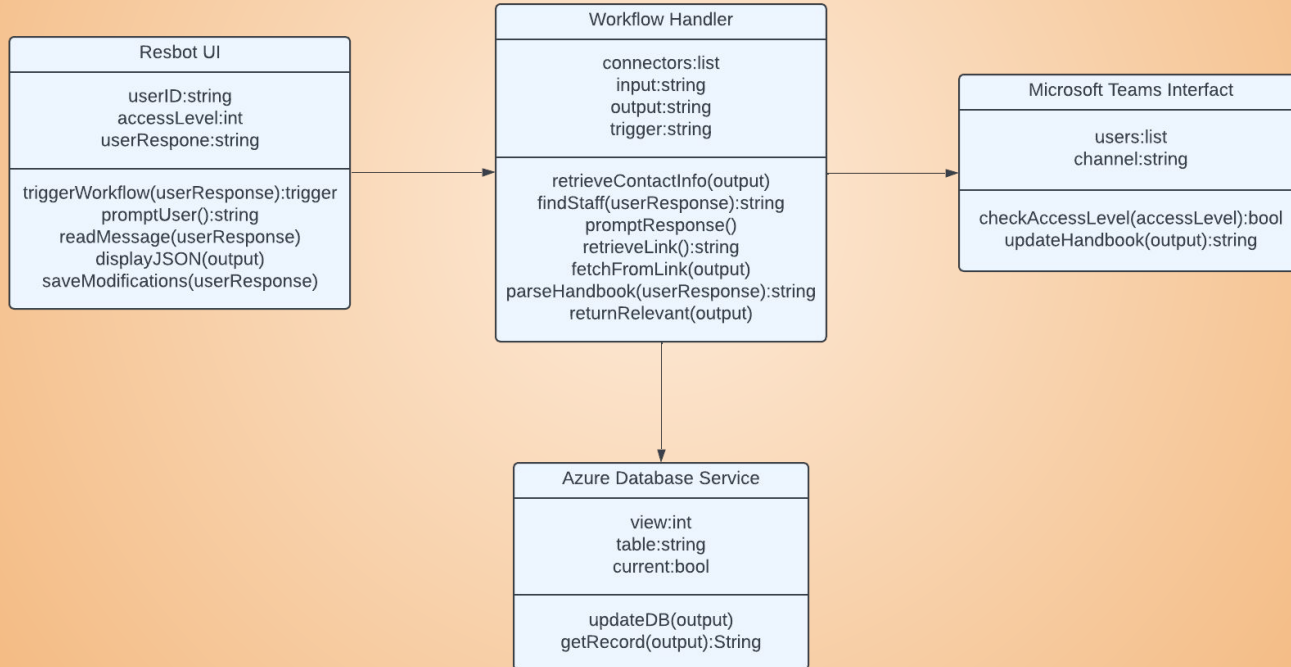


ResBot Framework

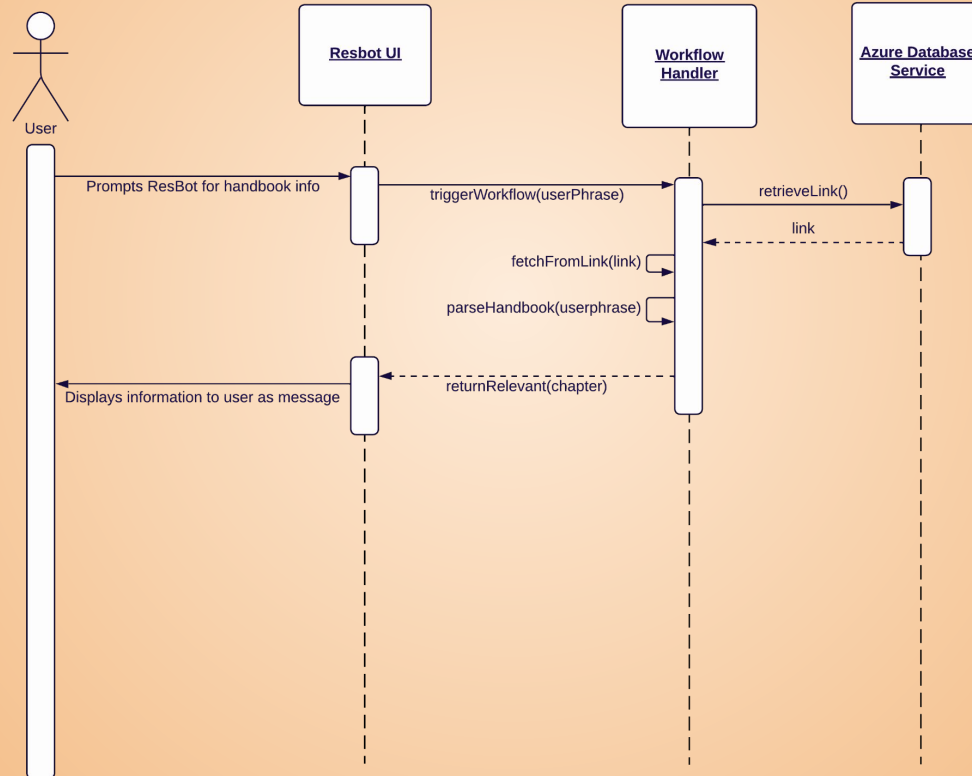
- Built on Microsoft Power Virtual Agent
- Chat responses in JSON
 - Written in Javascript
 - Allows for adaptive cards to display multimedia
- Microsoft Teams itself built on Electron framework with Node.js
- Azure Database Services
 - Smooth integration with Microsoft Teams and Microsoft Copilot Studio



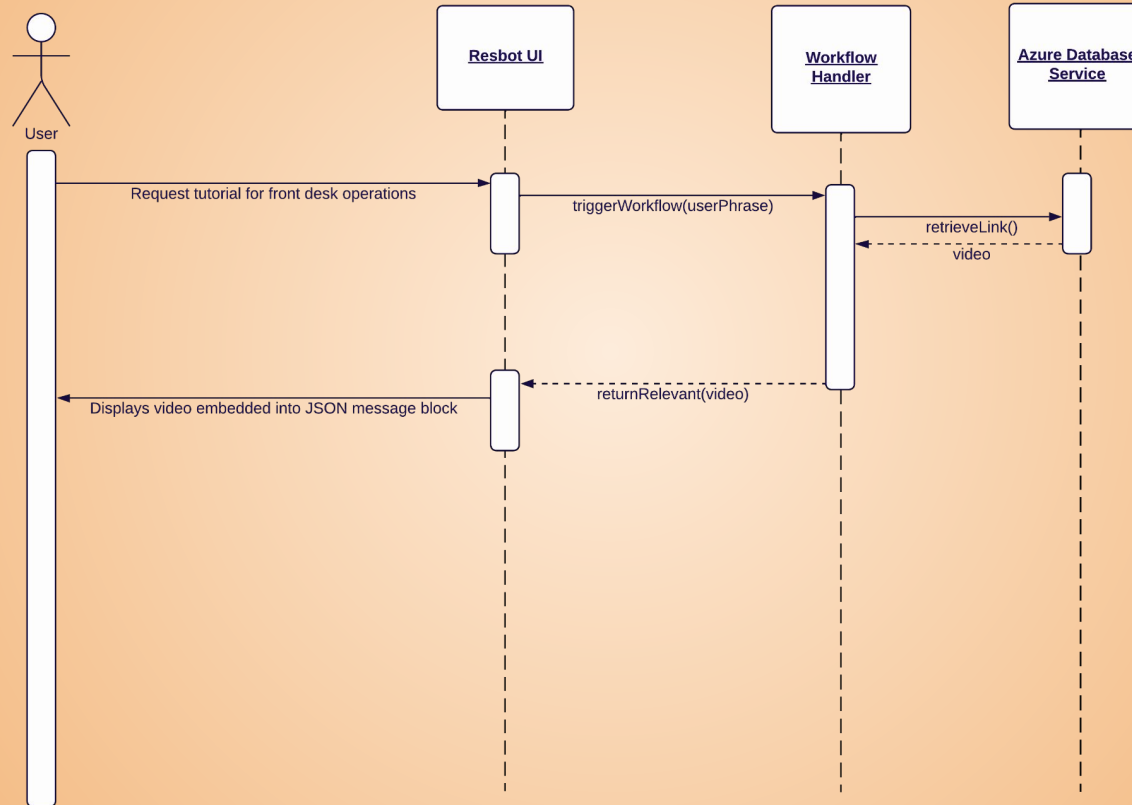
Class Diagram



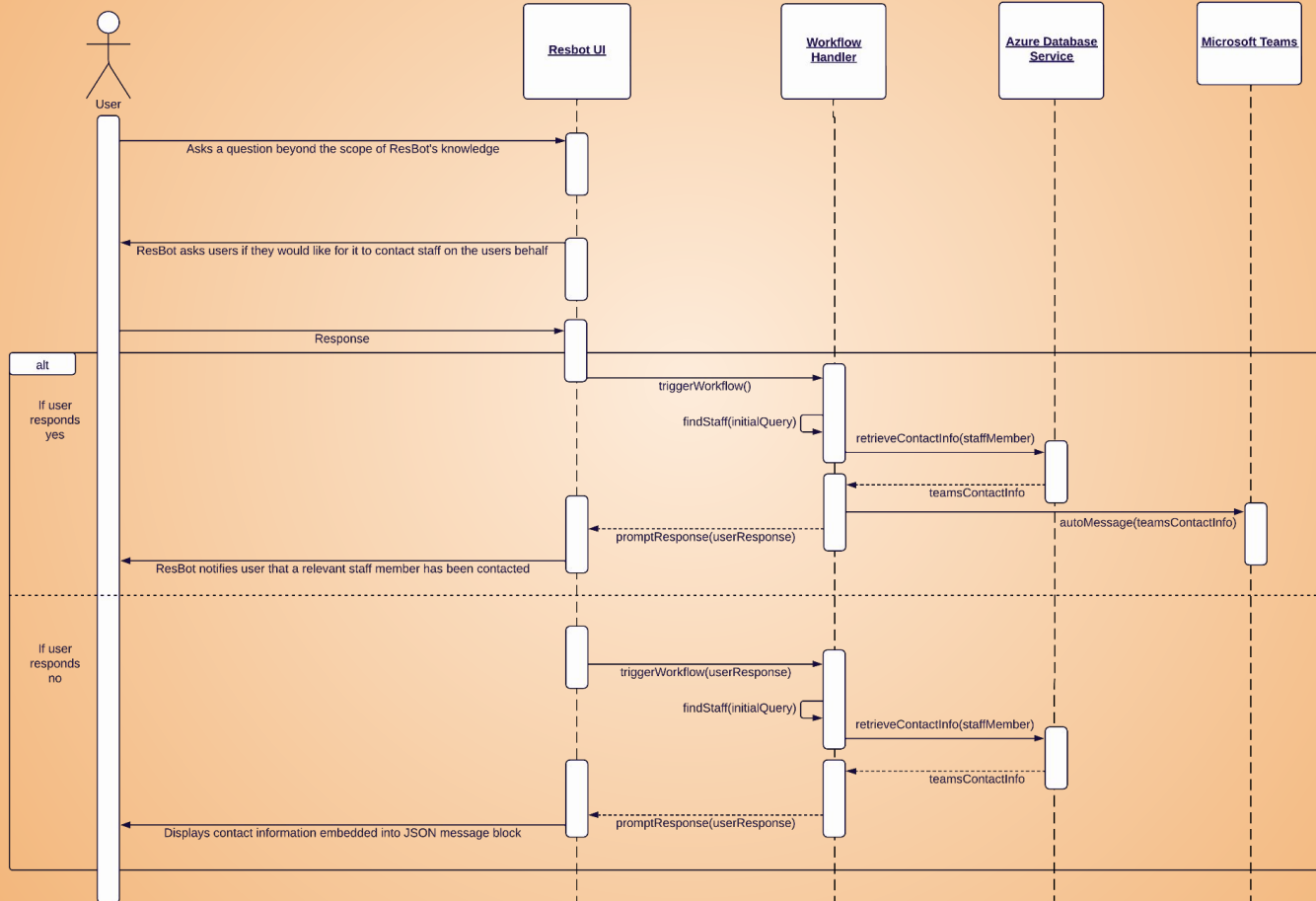
Sequence Diagram 1: View handbook



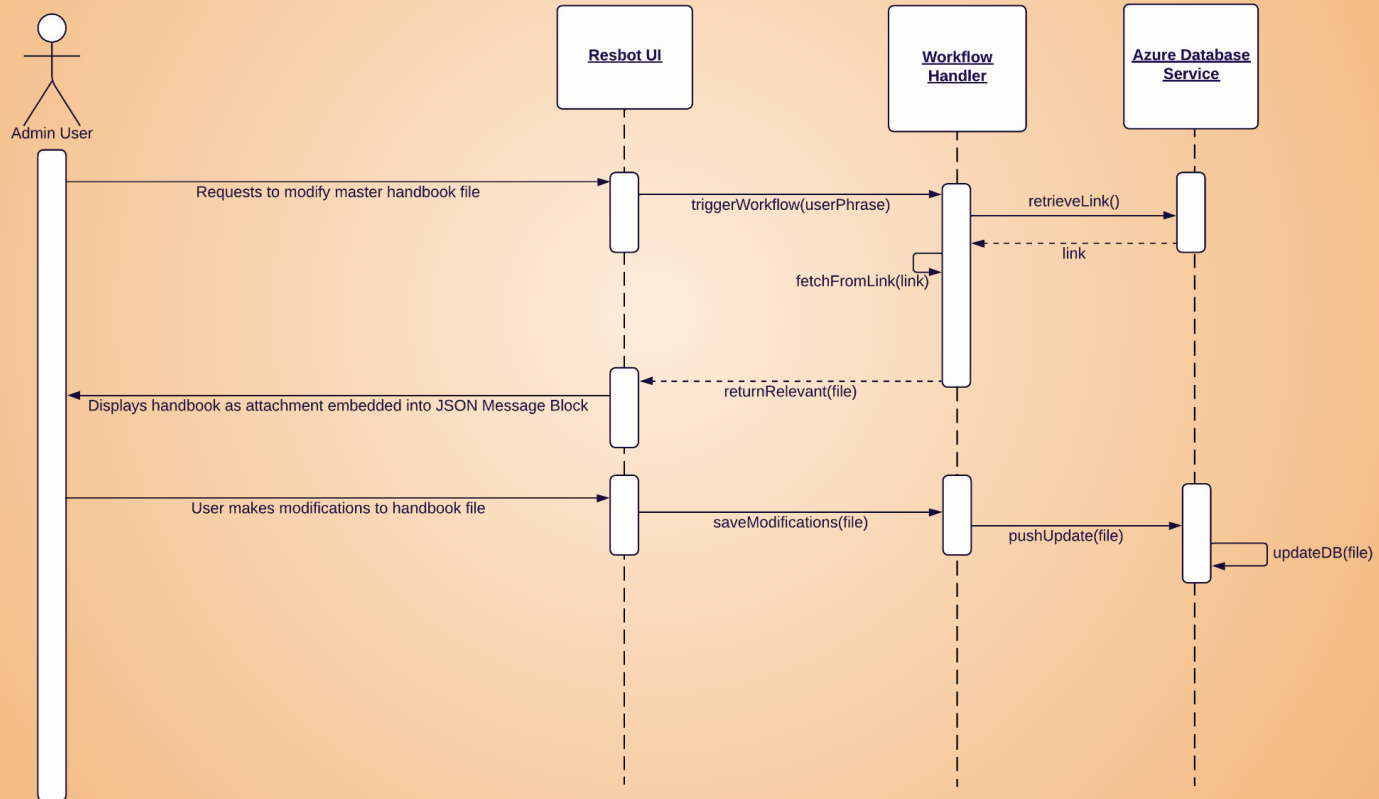
Sequence Diagram 2: Play Tutorial Video



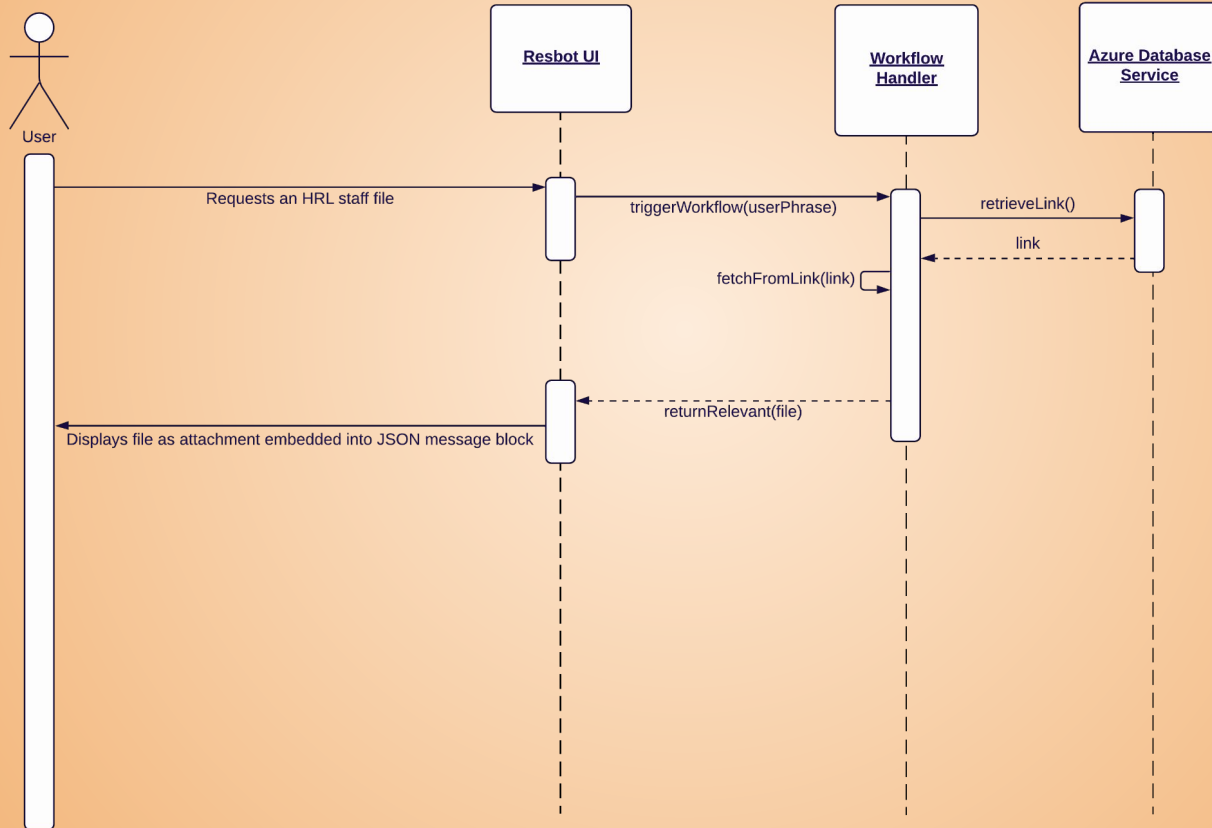
Sequence Diagram 3: Contact Staff



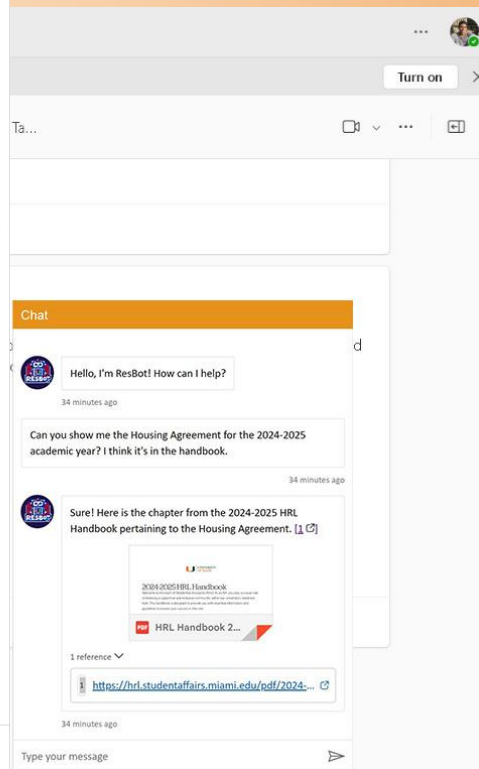
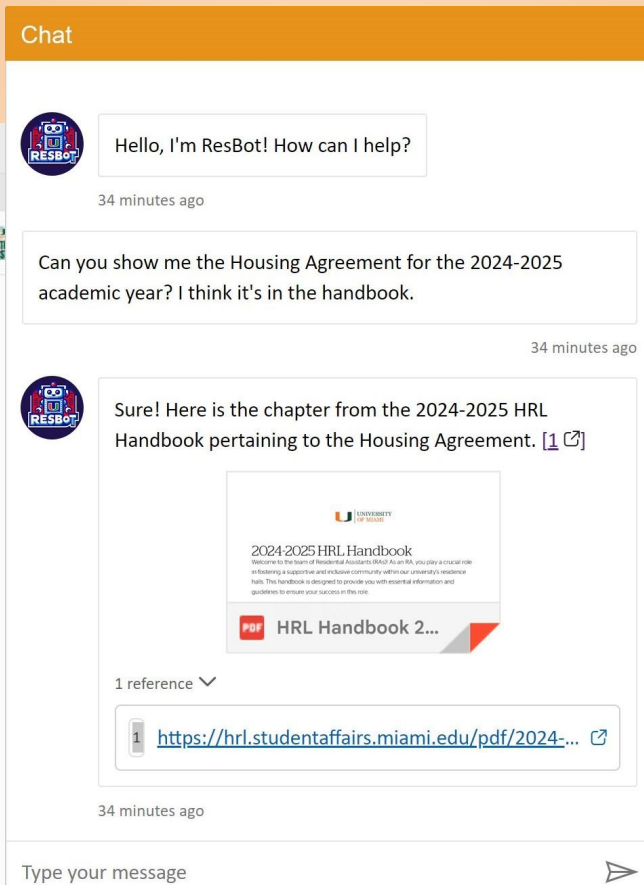
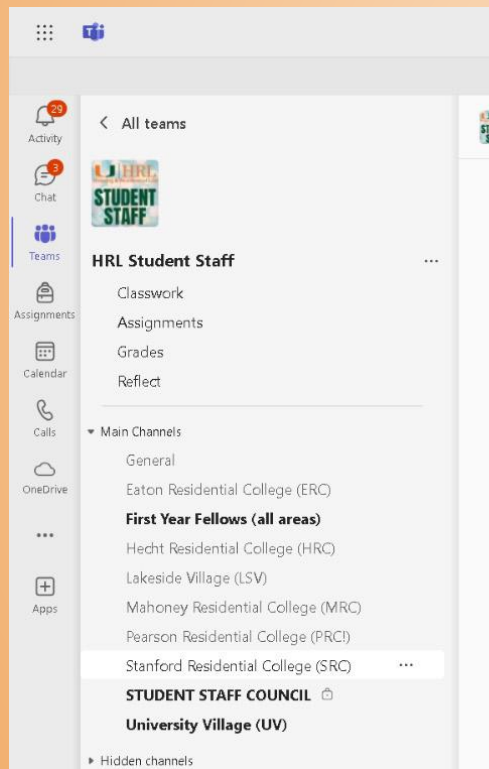
Sequence Diagram 4: Modify Handbook



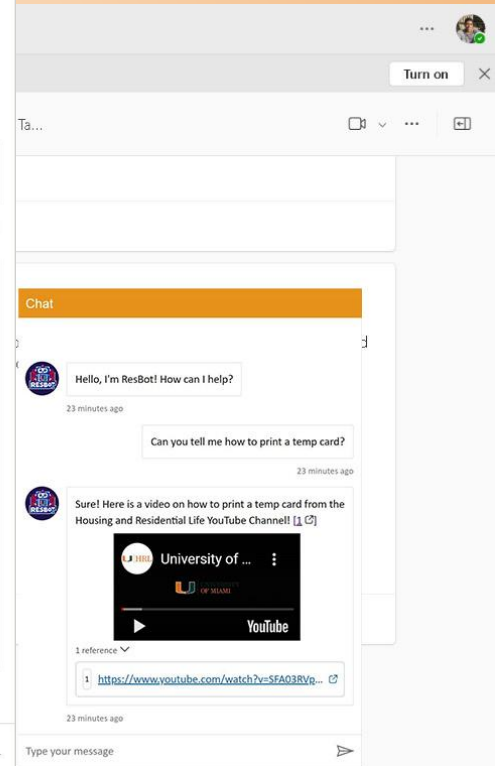
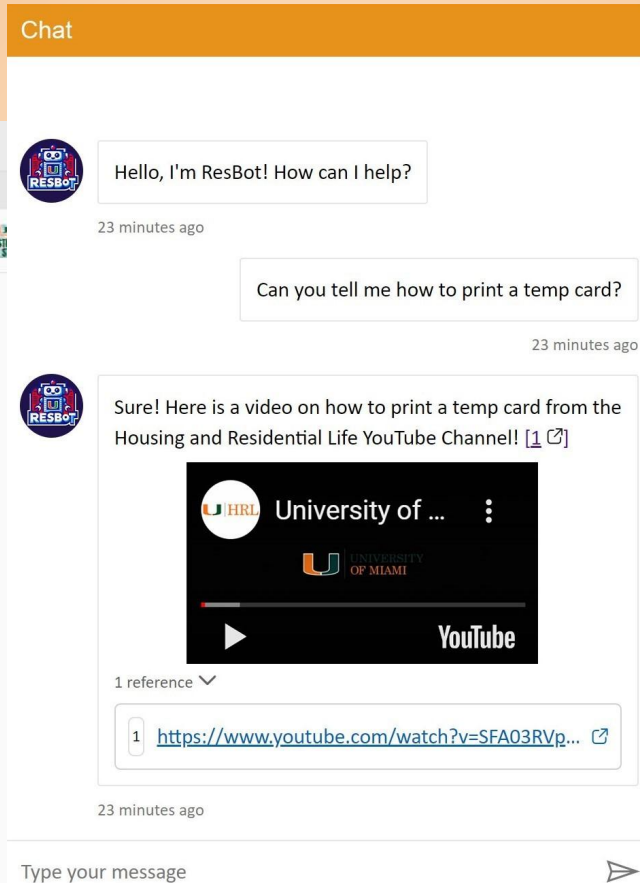
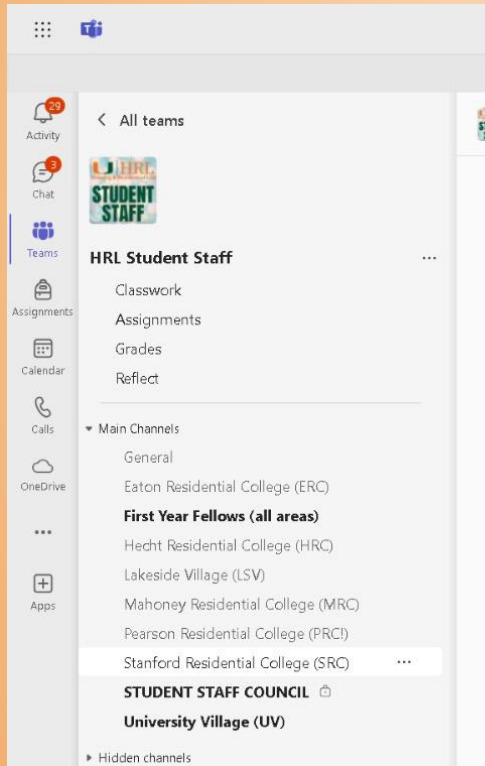
Sequence Diagram 5: Fetch File



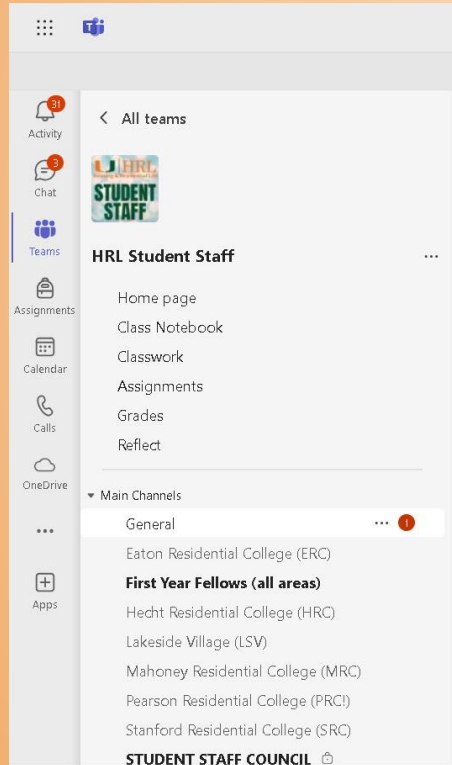
Mockup 1: View Handbook



Mockup 2: Play video



Mockup 3: Contact Staff (Yes)



Activity

Chat

Teams

Assignments

Calendar

Calls

OneDrive

More

Apps

< All teams

HRL Student Staff

Home page

Class Notebook

Classwork

Assignments

Grades

Reflect

Main Channels

General

Eaton Residential College (ERC)

First Year Fellows (all areas)

Hecht Residential College (HRC)

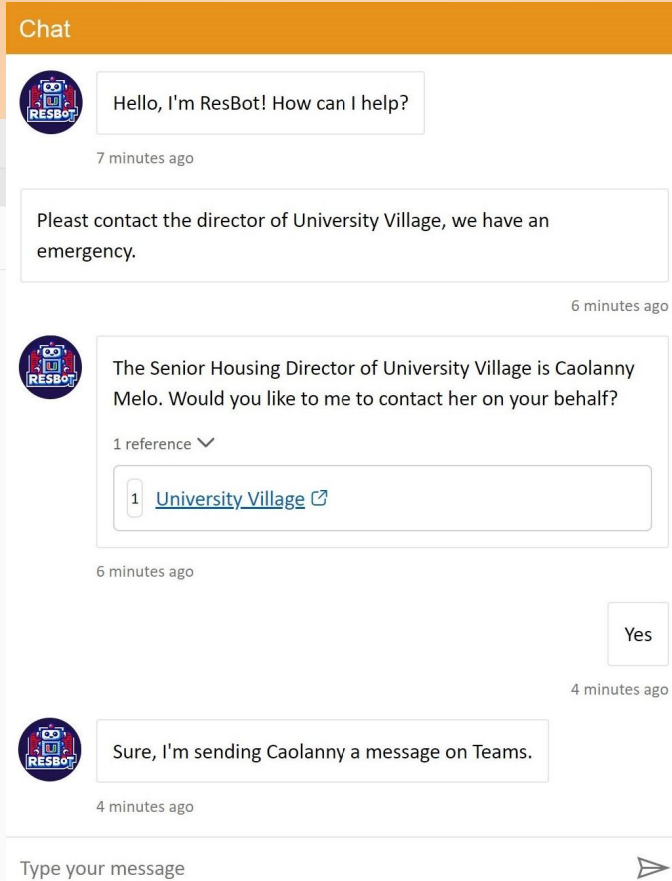
Lakeside Village (LSV)

Mahoney Residential College (MRC)

Pearson Residential College (PRC)

Stanford Residential College (SRC)

STUDENT STAFF COUNCIL



Chat

RESBOT

Hello, I'm ResBot! How can I help?

7 minutes ago

Pleas contact the director of University Village, we have an emergency.

6 minutes ago

RESBOT

The Senior Housing Director of University Village is Caolanny Melo. Would you like to me to contact her on your behalf?

1 reference ▾

1 [University Village](#)

6 minutes ago

Yes

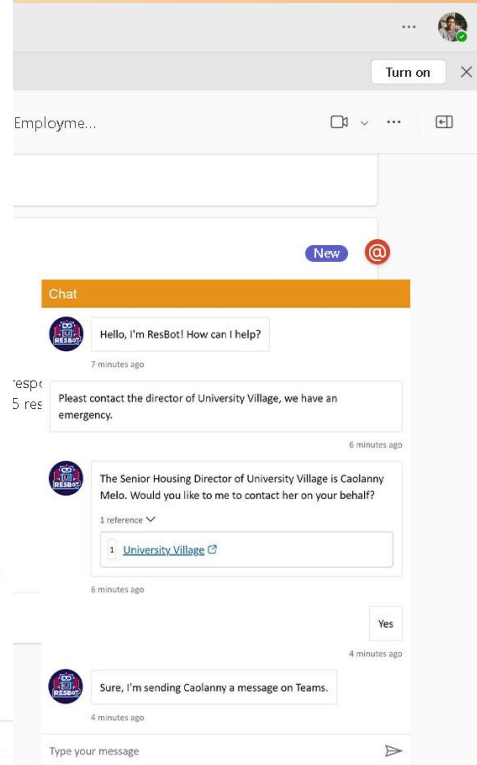
4 minutes ago

RESBOT

Sure, I'm sending Caolanny a message on Teams.

4 minutes ago

Type your message



Turn on

Empleyme...

Chat

RESBOT

Hello, I'm ResBot! How can I help?

7 minutes ago

Pleas contact the director of University Village, we have an emergency.

6 minutes ago

RESBOT

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1 reference ▾

1 [University Village](#)

6 minutes ago

Yes

4 minutes ago

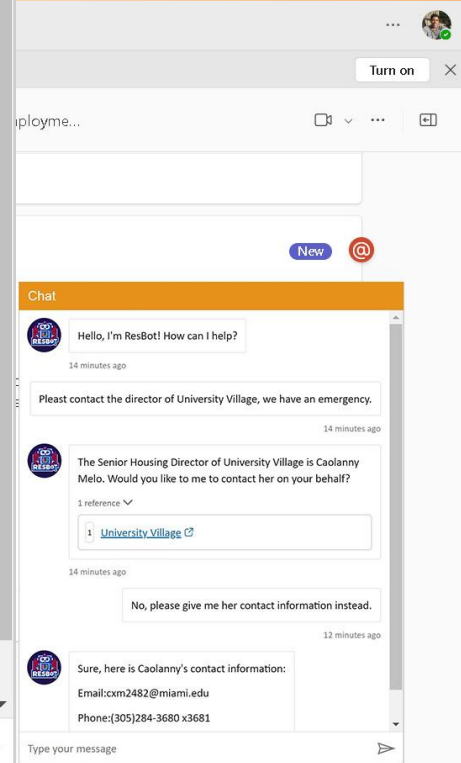
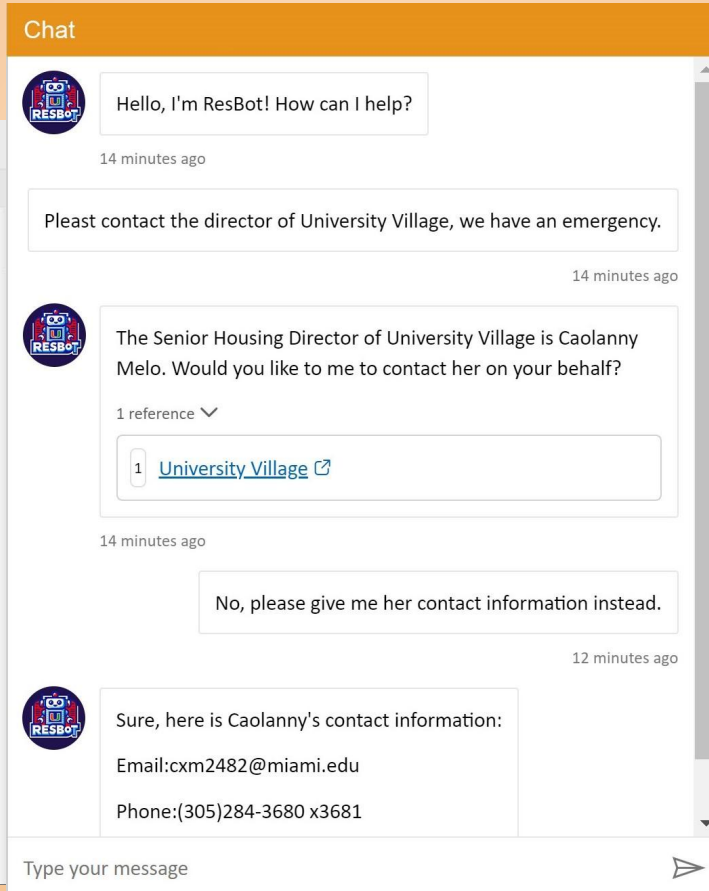
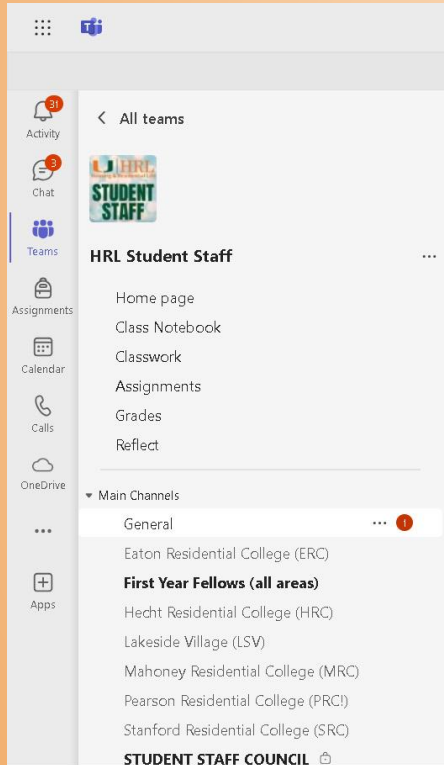
RESBOT

Sure, I'm sending Caolanny a message on Teams.

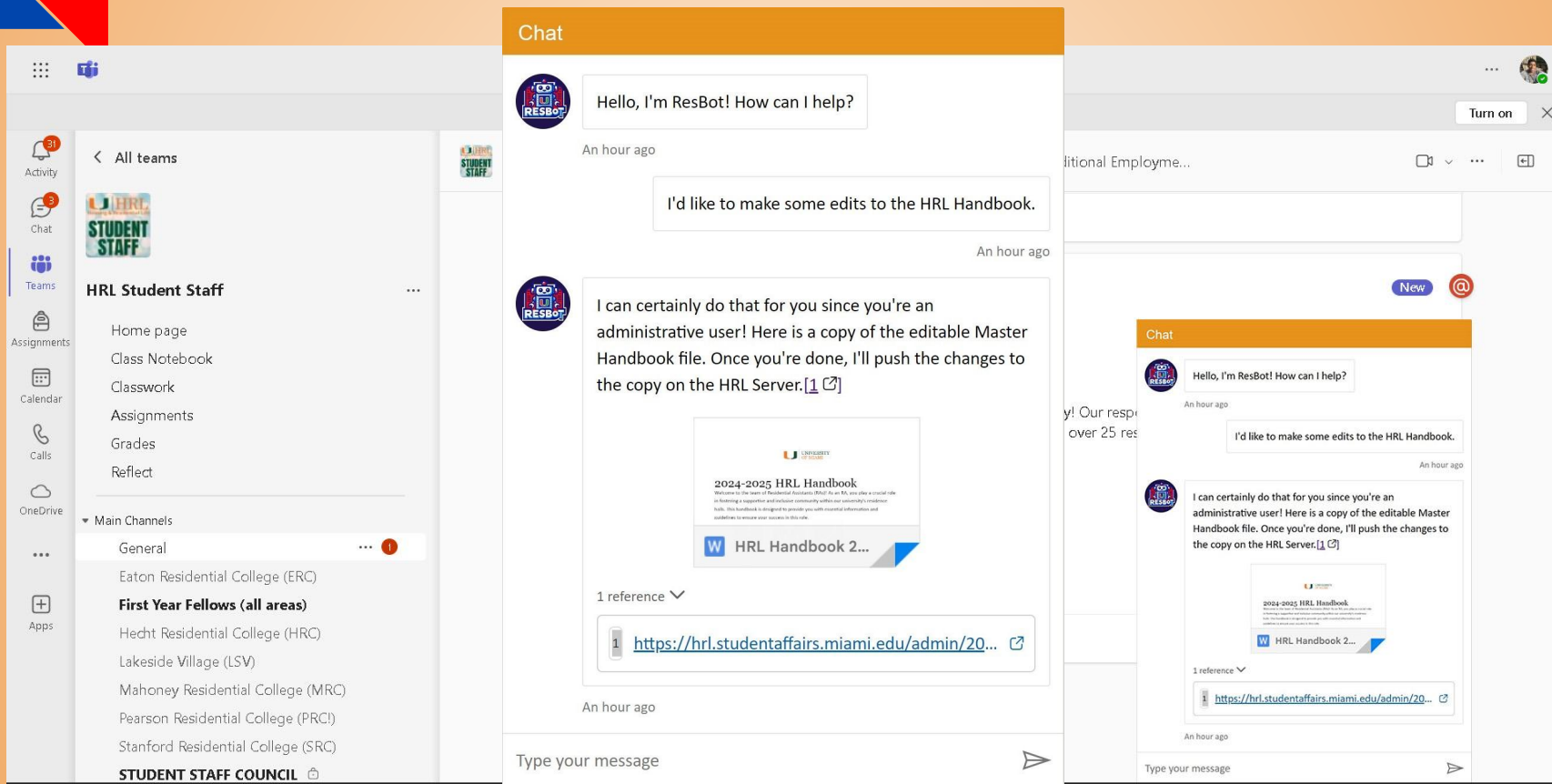
4 minutes ago

Type your message

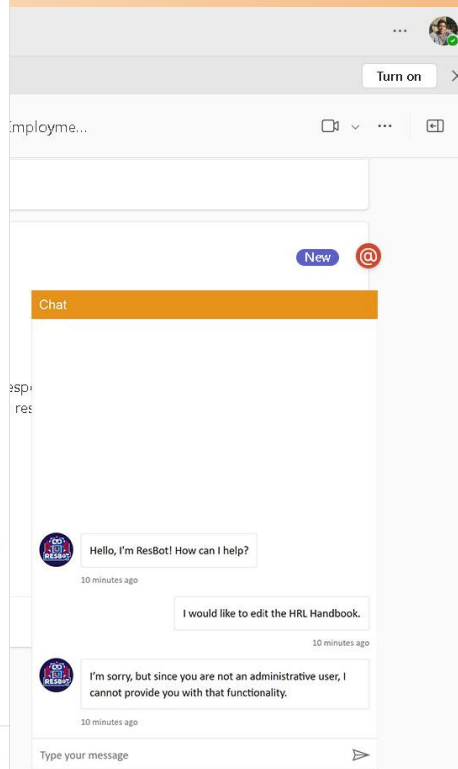
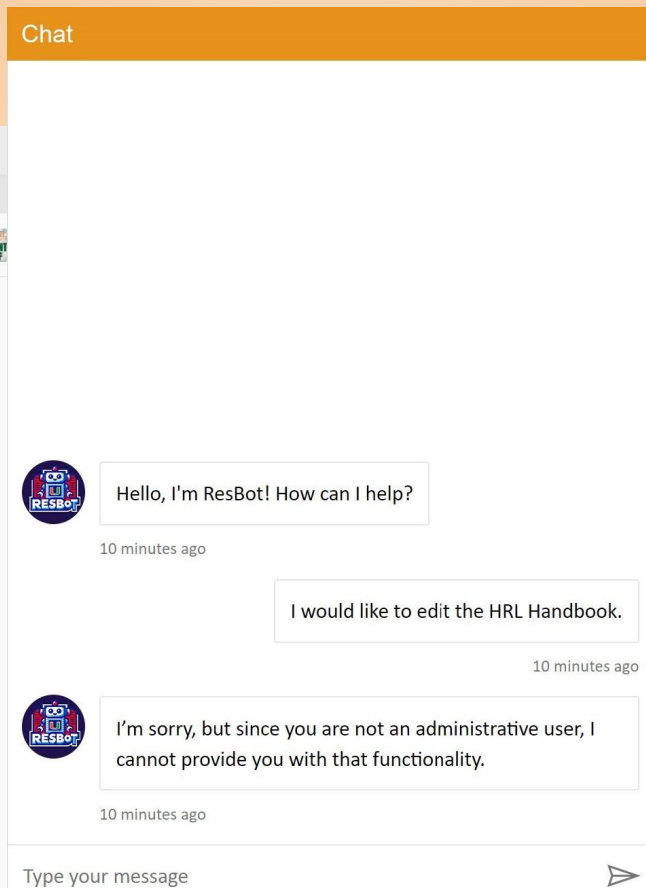
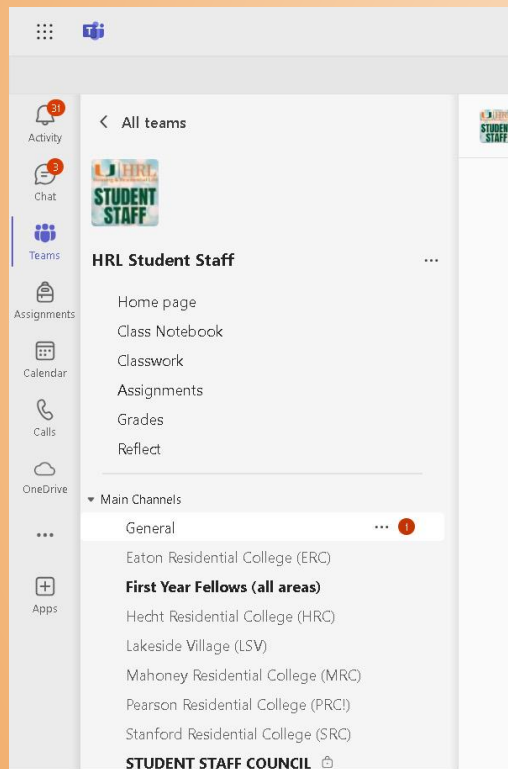
Mockup 3: Contact Staff (No)



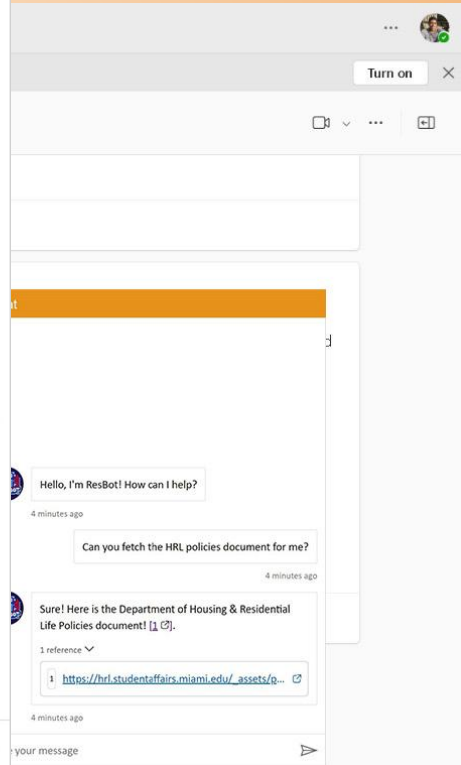
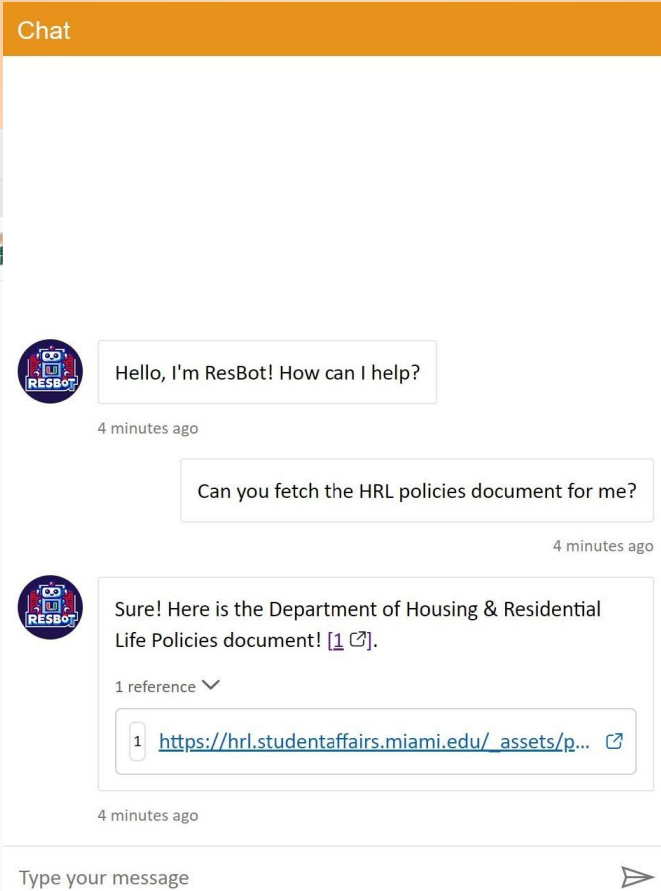
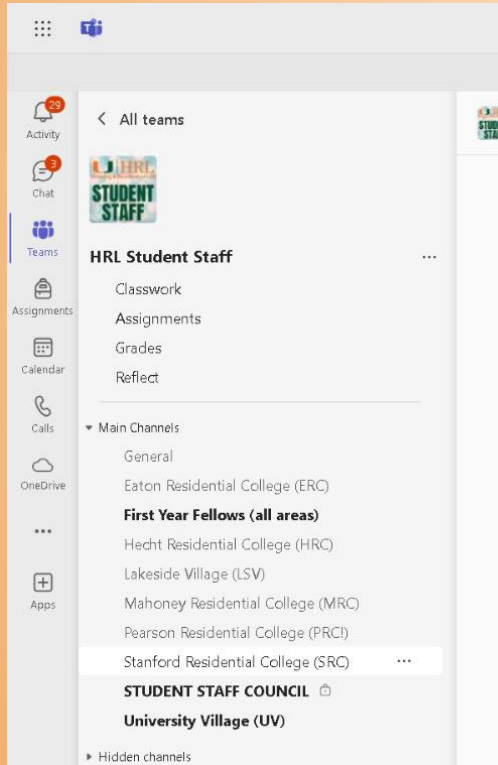
Mockup 4: Modify Handbook (Admin user)



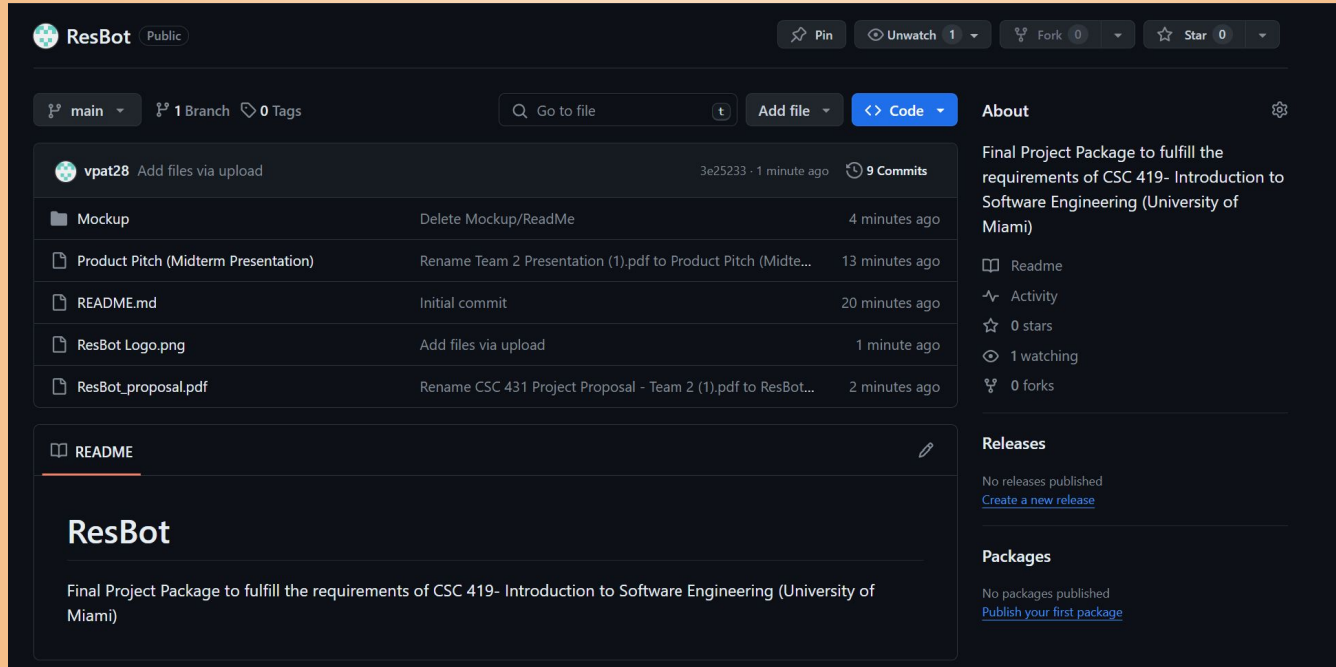
Mockup 4: Modify Handbook (Non-admin user)



Mockup 5: Fetch File



GitHub Link



The screenshot shows the GitHub repository page for 'ResBot' by user 'vpat28'. The repository is public and has 1 branch (main) and 0 tags. The repository description is 'Final Project Package to fulfill the requirements of CSC 419- Introduction to Software Engineering (University of Miami)'. The repository has 9 commits, 0 stars, 1 watching, and 0 forks. The repository contains a README file and a directory named 'Mockup'. The README file is titled 'ResBot' and contains the text 'Final Project Package to fulfill the requirements of CSC 419- Introduction to Software Engineering (University of Miami)'.

Repository: ResBot (Public)

3e25233 · 1 minute ago · 9 Commits

main 1 Branch 0 Tags

Go to file Add file <> Code

Files:

File	Commit	Time
Mockup	Delete Mockup/ReadMe	4 minutes ago
Product Pitch (Midterm Presentation)	Rename Team 2 Presentation (1).pdf to Product Pitch (Midte...	13 minutes ago
README.md	Initial commit	20 minutes ago
ResBot Logo.png	Add files via upload	1 minute ago
ResBot_proposal.pdf	Rename CSC 431 Project Proposal - Team 2 (1).pdf to ResBot...	2 minutes ago

README

ResBot

Final Project Package to fulfill the requirements of CSC 419- Introduction to Software Engineering (University of Miami)

About

Final Project Package to fulfill the requirements of CSC 419- Introduction to Software Engineering (University of Miami)

Readme Activity 0 stars 1 watching 0 forks

Releases

No releases published
[Create a new release](#)

Packages

No packages published
[Publish your first package](#)

<https://github.com/vpat28/ResBot>