

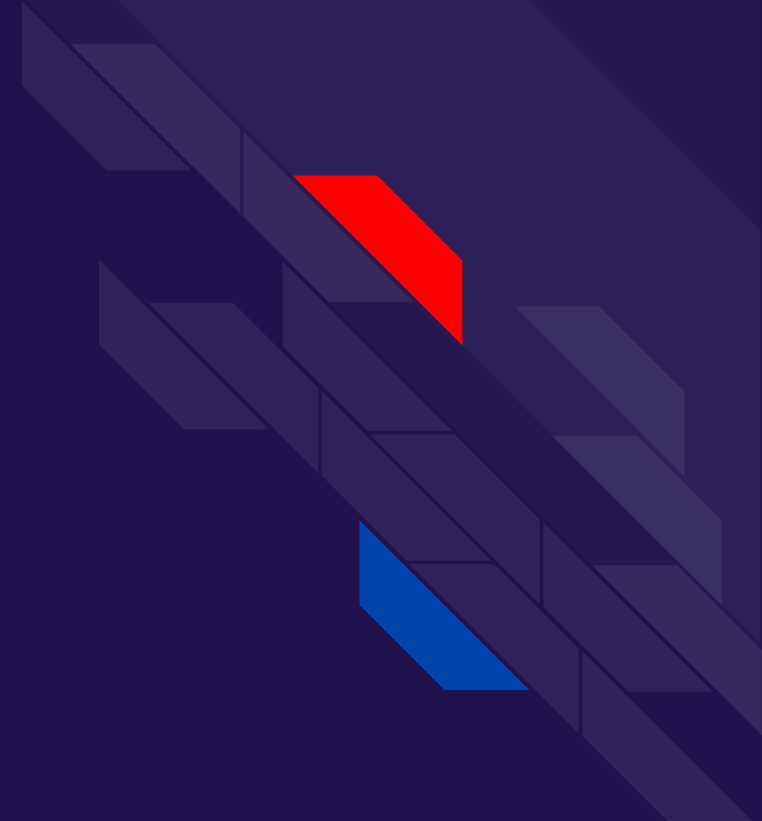
ResBot



Kevin Wright, Justin Prince, Vraj Patel

The Problem

- Housing and Residential Life (HRL) 'training weeks' start 10 days before the beginning of the semester
- The schedule on most days runs from 9AM-9PM
- This intense process reduces the amount of time Resident Assistants (RA) and Desk Assistants (DA) have for their Summer and Winter breaks
- It costs HRL thousands of dollars to provide meals for all the staff while the dining halls are non-operational
- The desk operation manual is both difficult to update and hard to use in a time sensitive environment



Fall and Spring Training Schedules for a returning RA

	Sun 6	Mon 7	Tue 8	Wed 9	Thu 10	Fri 11	Sat 12		Sun 7	Mon 8	Tue 9	Wed 10	Thu 11	Fri 12	Sat 13
9 AM	Grab & go breakfast SRC O'Rourke, Ian Benjamin	Grab & go breakfast SRC O'Rourke, Ian Benjamin	Grab & go breakfast SRC O'Rourke, Ian Benjamin	Grab & go breakfast SRC O'Rourke, Ian Benjamin	Grab & go breakfast SRC O'Rourke, Ian Benjamin	Decks Open SRC O'Rourke	Grab and go breakfast SRC O'Rourke, Ian Benjamin					Central Check in Lafayette Ego Goin, Brittany Nicole			
		Walk to LSV Expo O'Rourke, Ian Benjamin	Walk to LSV Auditorium O'Rourke										Sit Lamp A		
		Welcome & Department I LSV Expo	Community Building LSV Auditorium O'Rourke, Ian Benjamin		Keynote Speaker LSV Expo O'Rourke, Ian Benjamin	Grab and go breakfast SRC O'Rourke, Ian Benjamin									
		Training Overview LSV O													
10 AM	Building Walk Thru O'Rourke, Ian Benjamin	Online Modules Jeopardy (RA) LSV Expo O'Rourke, Ian Benjamin	Working Through Difficult Situations LSV Auditorium O'Rourke, Ian Benjamin			Move-In Overview & Centennial Village LSV Expo O'Rourke, Ian Benjamin			In Area Time - Desk Training, Teambuilding In Area then SRC Classroom Goin, Brittany Nicole	Central Check in & Assignments Overview LSV Auditorium Goin, Brittany Nicole			Community Building & Roommate Agreements LSV Pavilion Goin, Brittany Nicole	Cancelled: Sit Lamp M	
11 AM		Being Employed LSV Expo				Title IX (New Staff) LSV Expo O'Rourke, Ian Benjamin	Cane Kickoff Meeting Shabla Student Center O'Rourke, Ian Benjamin	Cane Kickoff Meeting Shabla Student Center (1130) Miller Dr, Goin, Britt							
										800 Expo LSV Auditorium Goin, B					
Lunch SRC O'Rourke, Ian Benjamin	RA Compensation LSV Ex	Living with Others LSV Au	Lunch SRC Dining Hall O'Rourke, Ian Benjamin	Lunch SRC Dining Hall O'Rourke, Ian Benjamin	Lun Ch Stan Dine Hall O'R Ian Benjamin	Lunch SRC Dining Hall O'Rourke, Ian Benjamin	Lunch SRC Dining Hall O'Rourke, Ian Benjamin							HRL Student Staff Training LSV Expo Residence g	Cancelled
1 PM	In Area Team Introduction		Walk to Steps A Staff Pictur		Sit Lamp Tran Hall O'Rourke, Ian Benjamin	3rd Year RA meet LSV Goin	3rd								
	Department Team Building Outdoor Adventure LSV O'Rourke, Ian Benjamin	Desk Training: Customer Service & Expectations LSV Expo O'Rourke, Ian Benjamin	Campus Partner Team O'Rourke, Ian Benjamin	Counseling Center LSV Expo O'Rourke, Ian Benjamin	Q&A Acti Pain Meet Nas (810 Staff LSV Expo O'Rourke, Ian Benjamin	BCD's Mahoney O'Rourke, Ian Benjamin	BCD's Prep		SRC Opening Meeting SRC Classroom Goin, Britt			Interview Feedback - Topical LSV Auditorium Goin, Britt	Cancelled S		Duty & Crisis Response LSV Expo Goin, Brittany Nicole
2 PM		Desk Training: Fire Panel & Inspections SRC O'Rourke, Ian Benjamin		Cancelled					Move-In Prep O'Rourke, Ian Benjamin	Early Move in begins (Sewarby) In Area Goin, Brittany Nicole					DEA Training - NEW STAFF ONLY LSV Pavilion Goin, Brittany Nicole
									RA Choice Conference Sessions LSV Pavilion, Auditorium, Classroom Goin, Brittany Nicole				Recruitment Overview LS		
3 PM									Move in prep In Area Goin, Brittany Nicole						
4 PM		Desk Prep & Module Completion SRC O'Rourke, Ian Benjamin	Rotating Sessions LSV Pavilion, LSV Auditorium LSV Classroom O'Rourke, Ian Benjamin	Sandler Center LSV Pavilion O'Rourke, Ian Benjamin	Duty & Crisis Response LSV Expo O'Rourke, Ian Benjamin	Cancel	Waiver/Res								Title IX - NEW STAFF ONLY LSV Pavilion Goin, Brittany Nicole
5 PM		Uniform Distribution SRC		Student Staff Recruitment	BCD Acting Prep Retaining LSV Class O'Rourke, I	Duty Senu			BCD Debrief Mxv Classrooms O'Rourke, Ian Benjamin						
6 PM	Dinner O'Rourke, Ian Benjamin	Dinner O'Rourke, Ian Benjamin	Welcome Back Dinner w/ Dr. Whately LSV Expo O'Rourke, Ian Benjamin	Dinner Stanford Dining Hall O'Rourke, Ian Benjamin	Dinner SRC Dining Hall O'Rourke, Ian Benjamin	Dinner SRC Dining Hall O'Rourke, Ian Benjamin	Dinner SRC Dining Hall O'Rourke, Ian Benjamin								
7 PM															
	In Area Training/walk through summer move over spaces to confirm SRC O'Rourke, Ian Benjamin	In Area (Scheduling) SRC O'Rourke, Ian Benjamin	In Area SRC O'Rourke, Ian Benjamin	In Area (Community Building w/ Faculty SRC O'Rourke, Ian Benjamin	In Area Training (Sit down w/ Residential Faculty) O'Rourke, Ian Benjamin	In Area Training O'Rourke, Ian Benjamin	In Area SRC O'Rourke, Ian Benjamin		Team building Desert Mxay In Area Goin, Brittany Nicole	In Area Time - Building Prep In Area Goin, Brittany Nicole					
8 PM									In Area Time - Building In Area Goin, Brittany Nicole						



The Solution: **ResBot**

- A chatbot that is hosted through the 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



Functional Requirements I

1. View Handbook
 - Allows user to access the HRL guidelines handbook.
2. Play Tutorial Video
 - Allows users to find video tutorials explaining their duties.
3. Contact Staff
 - ResBot suggests HRL Staff to contact (and optionally contacts them automatically) based on the contents of a user's message (keyword recognition).



Functional Requirements II

4. Search For File

- Allows student HRL employee to ask ResBot to retrieve a relevant file based on keyword recognition.

5. Modify Handbook

- Allows HRL Administrative user to make edits to the master handbook file for future reference.



Non-Functional Requirements

1. File Update Speed

- When an HRL Administrator makes updates to the handbook, the master file should be updated within a minute of editing for all employees to be able to view changes.

2. Tolerance to Ambiguity

- Users may inquire about procedures in a way that does not exactly match the wording of the handbook. ResBot must be trained to handle a variety of prompts or synonymous trigger phrases to account for this.



System Constraints I

- Tool Constraints
 - Source Control Constraint
 - Per the project guidelines, we are required to use Github for source control.
 - Application Framework
 - We will be using Microsoft Power Virtual Agent (now part of Microsoft Copilot Studio) to develop the chat bot. Microsoft Copilot Studio allows us to directly integrate ResBot into Microsoft Teams.
- Language Constraints
 - Backend Framework
 - As we are using JSON to format the responses returned by ResBot, this portion of the backend (not managed by Microsoft Copilot Studio) will be written in Javascript.



System Constraints II

- Platform Constraints
 - Web Application Platform
 - ResBot can be used on the Microsoft Teams mobile application or desktop application (or the desktop browser edition).
- Storage Constraints
 - Data Usage Storage
 - Stores data related to all interactions including the time, location (residential college), and employee accounts involved.



System Constraints III

- Network Constraints

- Internet Access
 - Users will need internet access for Microsoft Teams to work, which means internet access is necessary to use ResBot.
- Access University Directory
 - ResBot must be able to access the University of Miami personnel and student contact information in order to refer users to one another.
- Access Database
 - ResBot must be able to access an external database that stores chat logs with related metadata.



System Constraints IV

- Deployment Constraints
 - HRL Approval
 - ResBot functioning correctly relies on the Housing & Residential Life department providing access to confidential files such as employee handbooks. HRL must also provide access to their Teams channel in order to integrate ResBot into it.
- Transition & Support Constraints
 - End of Support
 - Development of the ResBot will stop at the end of the Spring semester. Thus, there will be no updates after the final day of the semester.



System Constraints V

- Budget & Schedule Constraints
 - Budget Constraint
 - Since there is no seed funding for this project, any tools used must be free.
 - Semester End Constraint
 - As this project is part of the Spring 2024 Section of CSC 431, It must be completed by the Semesters End (April 29th, 2024).
 - Free Trial Constraint
 - Microsoft Copilot Studio only provides a free trial of 60 days. Initial development of ResBot and first build must be completed within this time period. Additional development will require the purchase of a subscription.
- Miscellaneous Constraints
 - Proprietary Software
 - ResBot is built and supported by the Microsoft Copilot Studio platform. If the University administrator account lost the Copilot Studio or Power Automate ResBot would no longer be functional and would have to be decommissioned if the license is not renewed.
 - Significant updates to the Copilot Studio by Microsoft could change ResBot's functionality in unknown ways despite this being unlikely.

Use Cases

User Need

Student employee has forgotten how to issue a resource at the front desk



Basic Flow

User prompts ResBot to advise them on a front desk operation



View Handbook

Resbot displays an excerpt of the handbook containing a possible course of action

User Need

Student employee is in need of information that ResBot does not have access to



Basic Flow

User sends a chat to ResBot regarding a question it cannot answer



Contact Staff

ResBot can automatically notify appropriate staff member about the user's question through Teams

User Need

Student employee cannot find a on the HRL Teams channel



Basic Flow

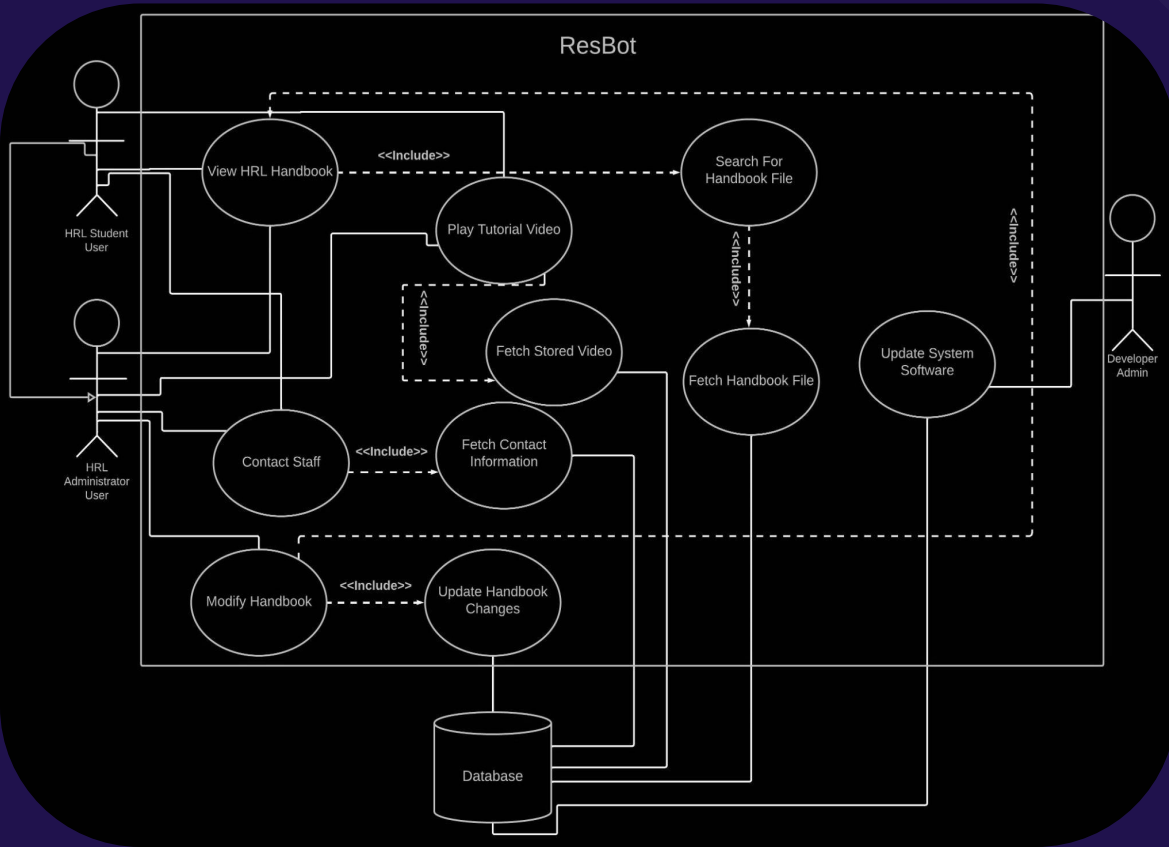
User requests the file from ResBot which searches the HRL Teams files



Search for File

ResBot "replies" within the chat with a link to the relevant file(s)

Use Case Diagram





Evolutionary Requirements

1. HRL Staff Forms Integration (Functional)
 - Upon the user's request, ResBot will be able to complete appropriate forms from the HRL Staff Links site based on a conversation transcript.
2. Conversational Transcript Sharing (Non-Functional)
 - When ResBot contacts a staff member via Teams due to a user query, the message on Teams will have the transcript of the preceding conversation to provide the contacted staff member with more context in regards to issue.

