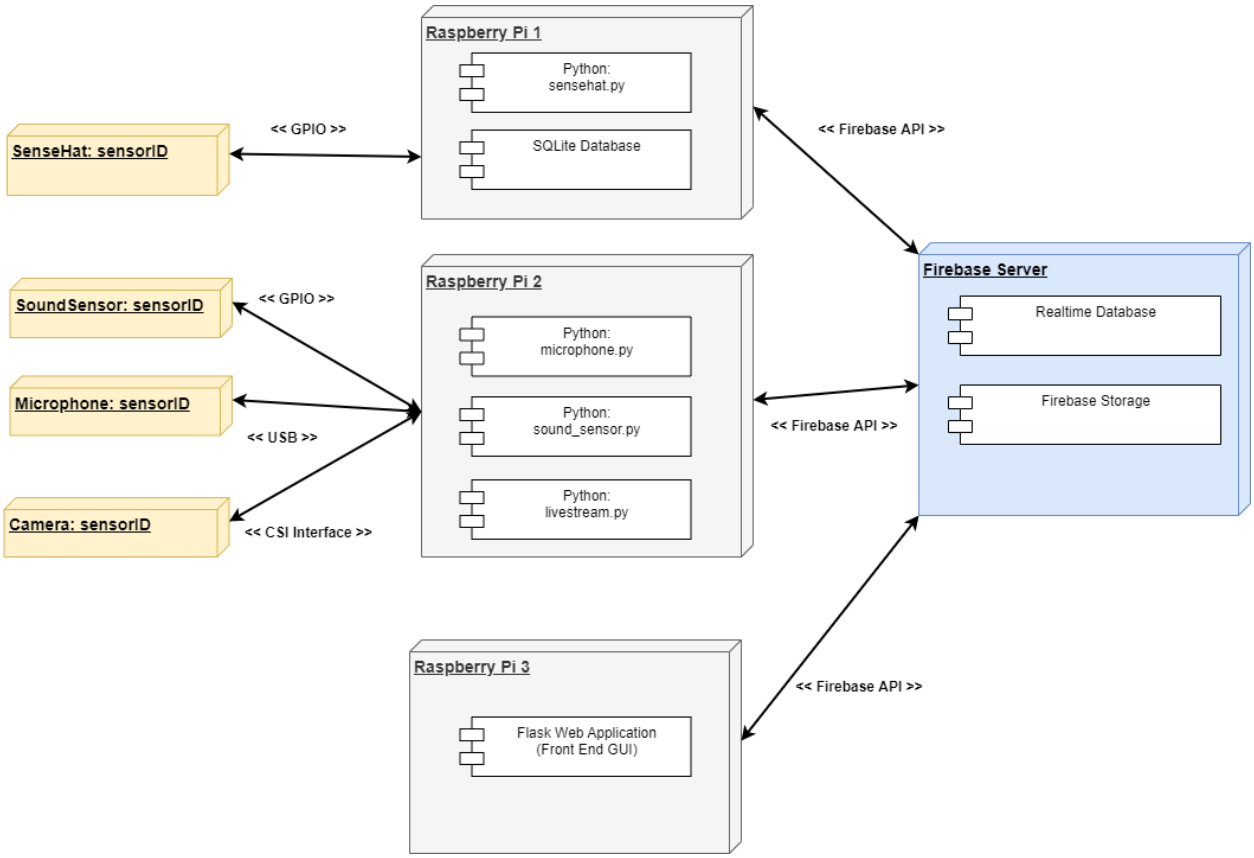
1 Deployment Diagram



2 Unit Test Demo Test Plan

The table below describes the test plan for the unit test demo. This plan outlines test cases for individual hardware, database, and software components. All eligible tests will be automated using pyunit testing.

Yellow - Cristian's Tests

Orange- Kenny's Tests

Red- Chris' Tests

Hardware Test Plan				
Test #	**Test Description**	**Test Setup**	**Expected Result**	**Actual Result**
1	The temperature in the room drops by 1 degree celsius.	Turn on Fan to lower room temperature.	The SenseHat detects the change in temperature.	
2	SenseHat button is pressed.		Button press is detected.	
3	A sound is played in front of	Sound Sensor	The sound is	

	the sound sensor.	attached to Pi through GPIO pins. Create loud and quiet noise near Sound Sensor.	detected by the sound sensor. Output timestamp of when Sound Sensor detected sound.	
4	An audio recording can be captured from the Microphone.	Microphone attached to Pi through USB port.	Audio file (.wav) saved locally to Raspberry Pi.	
5	A Video recording can be captured from the camera.	Pi Camera attached to Pi through CSI Camera Port.	Video file (.h264) saved locally to Raspberry Pi.	

Database Test Plan				
Test #	**Test Description**	**Test Setup**	**Expected Result**	**Actual Result**
1	Insert temperature entry into Firebase Database.	{temperature: “”, date: “”, time: “”}	Temperature retrieved from Firebase DB is the same as the temperature inserted.	
2	Insert temperature entry into Local SQL Database.	{temperature: “”, date: “”, time: “”}	Temperature retrieved from SQL DB is the same as the temperature inserted.	

Software Test Plan				
Test #	**Test Description**	**Test Setup**	**Expected Result**	**Actual Result**
1	Front End GUI queries and displays data from the Firebase DB.		Data inserted into Firebase DB is displayed.	
2	Pi sends notifications when a		Message Sent is	

	temperature threshold is triggered.		outputted and users receive notification.	
3	Front End GUI can set temperature thresholds in the Firebase DB.		Threshold changes are reflected in the Firebase DB.	
4	Pi can host a live stream.	Pi Camera attached to Pi through CSI Camera Port.	Video feed broadcasted/uploaded to HTML host	
5	Pi sends Sound Sensor data to Firebase DB periodically.	Sound Sensor attached to Pi through GPIO pins.	Firebase DB updated with current Sound Sensor data	
6	Pi can send audio recordings to Firebase Storage.		Firebase storage uploaded an audio recording file (.wav)	
7	Pi can send video recordings to Firebase Storage.		Firebase storage uploaded a video recording file (.h264)	
8	Front End GUI can display audio recordings from Firebase Storage.		Audio recording from firebase is displayed.	
9	Front End GUI can display video recordings from Firebase Storage.		Video recording from firebase is displayed.	

3 Test Script Filenames

Unit Test Demo Repo:
https://github.com/kennyddeng/SYSC3010A-L1W-G11-Project/tree/main/UnitTestDemo

- sense_hat_test.py: Contains hardware unit tests for Sense Hat
- firebase_db_test.py: Contains unit test for firebase DB read/write
- sound_sensor_test.py: Contains hardware unit tests for Sound Sensor. Contains unit tests for sending Sound Sensor data to Firebase.
- microphone_test.py: Contains hardware unit tests for Microphone saving audio file locally. Contains unit tests for sending Microphone audio file to Firebase Storage.

- camera_test.py: Contains hardware unit tests for Camera saving video file locally. Contains unit tests for sending Camera video file to Firebase Storage.
- livestream_test.py: Contains unit test that tests if livestream/camera feed is being sent to an html host
- unittest_local_SQL.py: Contains unit test for Local SQL database read/write.
- unittest_notification.py : Contains unit test that tests is a notification is sent.