Rutgers Bus on Google Home

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Goals

- Create a Google Action to help students easily and efficiently access the bus schedule without needing to check the mobile application.
- Help students find the nearest bus stops and walking distance to better estimate when to leave for class.
- To alert the student when to leave their current location to get to class on time.

Motivation and Objectives

- **Motivations**
  - Avoid wasting time checking the Rutgers’ bus app when getting ready for class.
  - Help new students find nearby bus stops.
  - Find a cure to chronic tardiness (patient zero: Arti).

- **Objectives**
  - Fetch bus arrival times for all Rutgers buses.
  - Include walking distance and time to reach nearest bus stop.
  - Calculate full trip ETA from current location to classroom.
  - Implement an Android app that notifies users when to leave to arrive at their class on time, based on their schedule information.

Methodology

- Various commands will trigger different intents within Dialogflow.
- Web server retrieves data from the Transloc API and Google maps API and returns it to Dialogflow.
- Transloc Bus and Google Maps API request & response.
- Hey Google, Ask G-bus when will the H arrive at the SAC?
- Hey Google, Ask G-bus what is the nearest bus stop?

Results

- **Result 1**
  - Provides the nearest bus stop along with walking distance to that bus stop.

- **Result 2**
  - Connected to Transloc and Google Maps API to get bus data and walking distance.

- **Result 3**
  - Alerts the student when to leave current destination (Android).

Acknowledgement

We would like to thank Maria Striki and Hana Godrich for all the advice and support!

References

1. https://developers.google.com/actions/extending-the-assistant
6. https://dialogflow.com/docs

Research Challenges

- Lack of Google Home documentation made it difficult to learn and implement the action for Google home.
- Used Ngrok to make a temporary webhook, then had to make a new webhook using Heroku.
- Rutgers Next Bus API was unreliable causing us to find and implement a new API (Transloc).
- Initially started with a webhook, but this made it difficult to implement certain aspects of the project, so we had to convert initial Python code to JavaScript in order to use the inline editor.