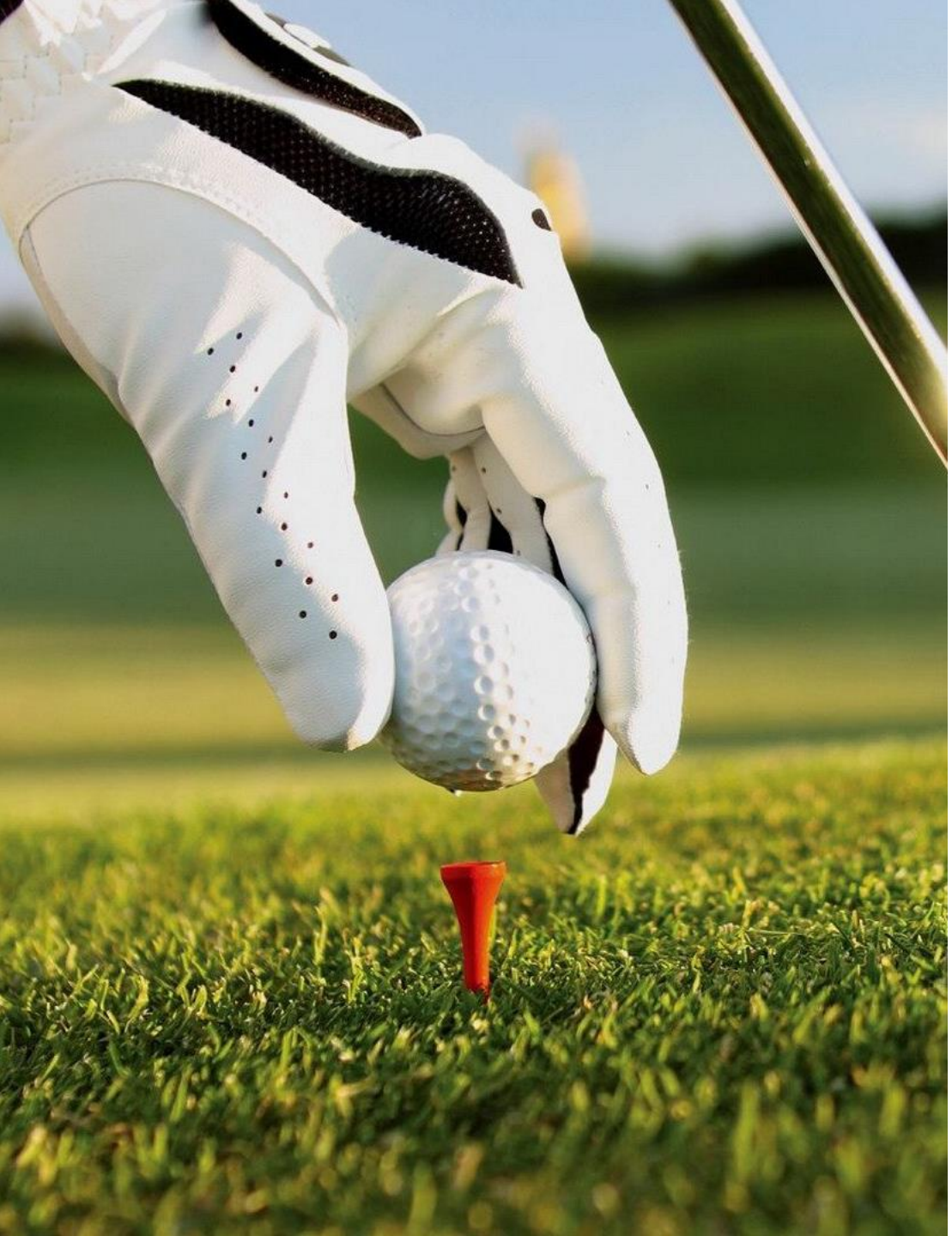


Final Presentation - PRI Project
Voice Caddie

Team EagleS

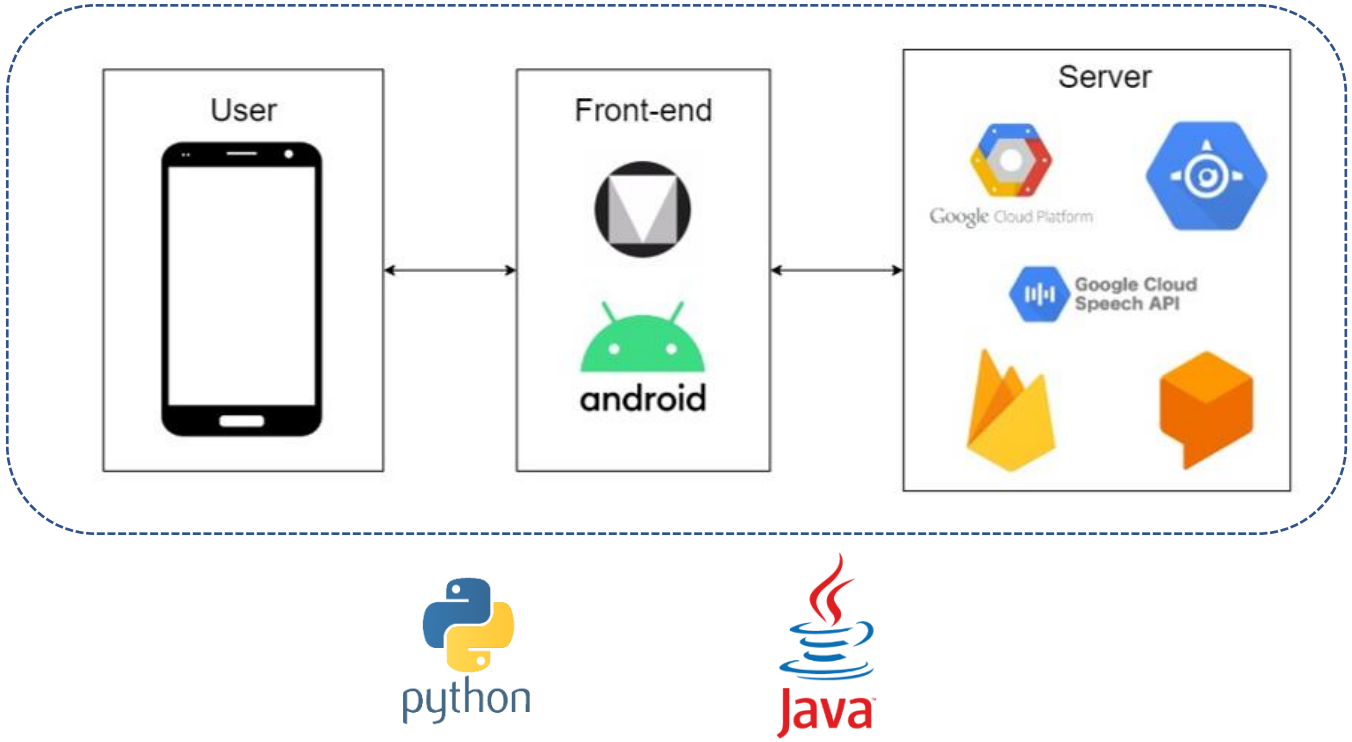
Paris, Jule 17, 2020

Project Background

As the one of the most popular mobile applications for golfers, Hello Birdie aims to strengthen the performance of the app through powering an AI – Voice Recognition function. With potential 90 Million golfers in the world, Hello Birdie wants to enhance the user experience to the next level. Therefore, Hello Birdie key founders have initiated the Voice Caddie project to achieve this trendy product innovation with two main objectives:

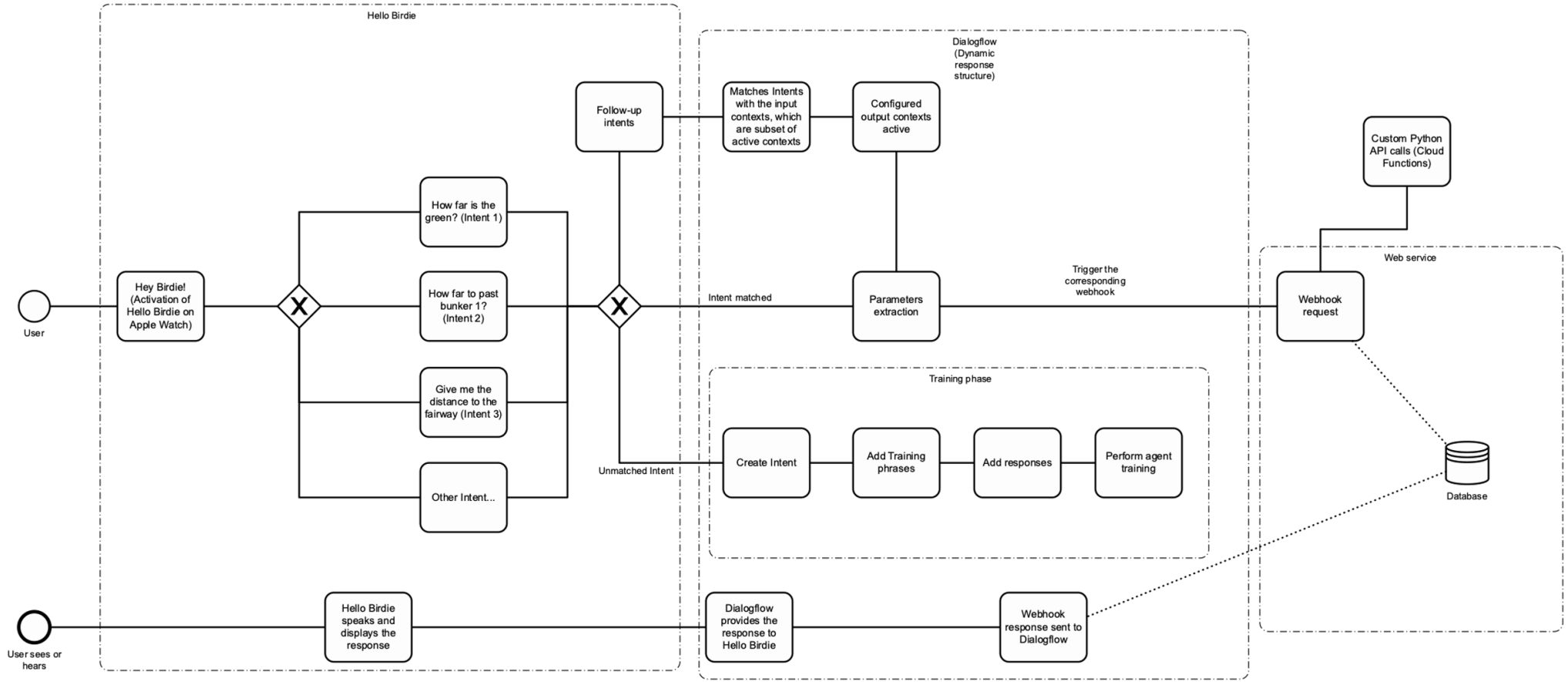
- Develop a conversational tool to provide pre-calculated strategic advice and voice-controlled input of score and shot sequences
- With a dedicated vocabulary set – the speech to text shall be trained to work with >90% of the time for 5 input languages

Overview and Tools



- ✓ Users can integrate with Hello Birdie through Voice Caddie. The Principle of Application is: Voice input and Voice output.
- ✓ Our project uses online communication platform SLACK and Git where members can communicate with sponsors, share the ideas, input and checking status of our project.
- ✓ Despite the impact of Covid 19, our communication still went smoothly and ensured the tracking frequently between project team and sponsor.

Application Structure



Firebase

Here are the configuration details of the Firebase service we have used.

```
In [1]: import pyrebase
config = {
  "apiKey": "AIzaSyDSwviBwGLJEAO9j8xZ6sPnhmx8U9WyOB8",
  "authDomain": "hb-epita-voice-recognition.firebaseapp.com",
  "databaseURL": "https://hb-epita-golf-conversational-agent.firebaseio.com",
  "projectId": "hb-epita-voice-recognition",
  "storageBucket": "hb-epita-voice-recognition.appspot.com",
  "messagingSenderId": "845561190896",
  "appId": "1:845561190896:android:3e2adc1210b2e9982ae535",
  #"measurementId": "G-LEJ0DZJXWF"
}
```

These are available in the Firebase console of the project in a json

```
In [2]: import json_reader

config = json_reader.json_loader("hb-google-services.json")

print(config.values())
```

```
6
dict_values([{'project_number': '845561190896', 'firebase_url': 'https://hb-epita-voice-recognition.firebaseio.com'
, 'project_id': 'hb-epita-voice-recognition', 'storage_bucket': 'hb-epita-voice-recognition.appspot.com'}, [{'clien
t_info': {'mobilesdk_app_id': '1:845561190896:android:3e2adc1210b2e9982ae535', 'android_client_info': {'package_nam
e': 'fr.epita.hellobirdie'}}, 'oauth_client': [{'client_id': '845561190896-8fo1a3kf12m1ldagkmrlblcitbk3otmm.apps.go
ogleusercontent.com', 'client_type': 3}], 'api_key': [{'current_key': 'AIzaSyDSwviBwGLJEAO9j8xZ6sPnhmx8U9WyOB8'}],
'services': {'appinvite_service': {'other_platform_oauth_client': [{'client_id': '845561190896-i2vr4su3nt4gpkc5q1s9
7kg9bffufmod.apps.googleusercontent.com', 'client_type': 3}]}}}], '1'])
```

The service is initialized with the configuration file using the Python wrapper for Firebase called “Pyrebase.” The authentication services are enabled using the auth() method. A user is then created using an email and a password. The user is then signed in to avail the service.

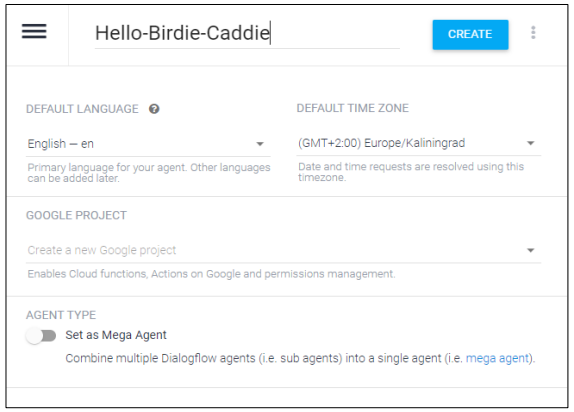
Dialog Flow

Main components of DialogFlow:

1. Agents
2. Intents
3. Entities
4. Contexts
5. Fulfillment for integrations

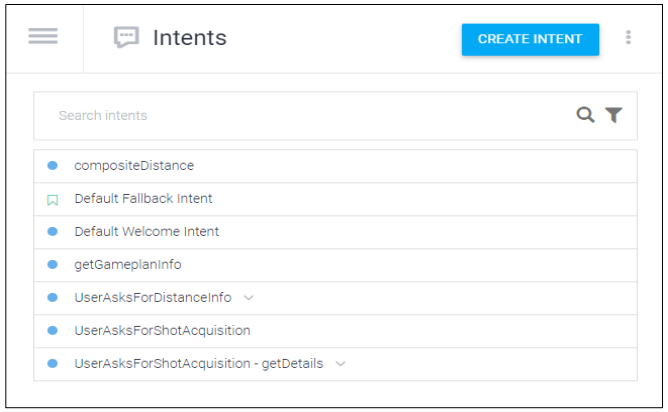
Step 1: Create an agent on Dialog flow

A virtual agent that handles conversations with the end-users.

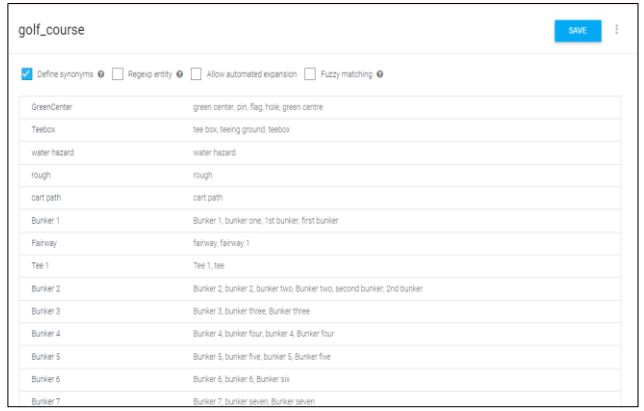


Step 2: Create an intent for the agent

It is used to categorize an end-user's conversation. A Dialogflow agent can have multiple intents.

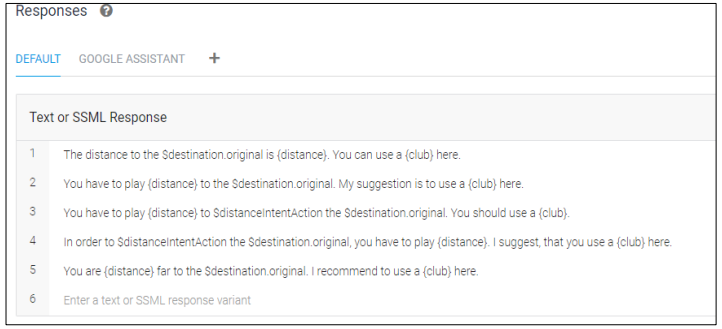


Step 3: Define and map entities



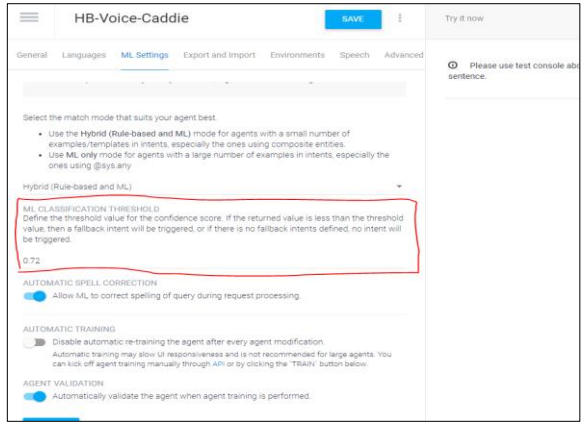
Step 4: Fulfilment responses:

By default, the agent responds to an intent with a static response.



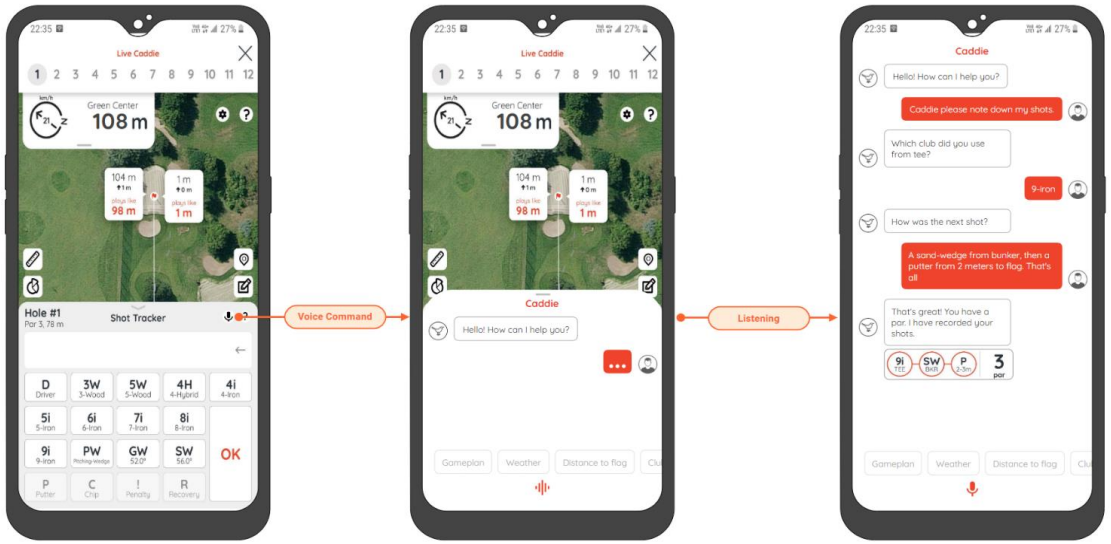
Step 5: Machine Learning settings.

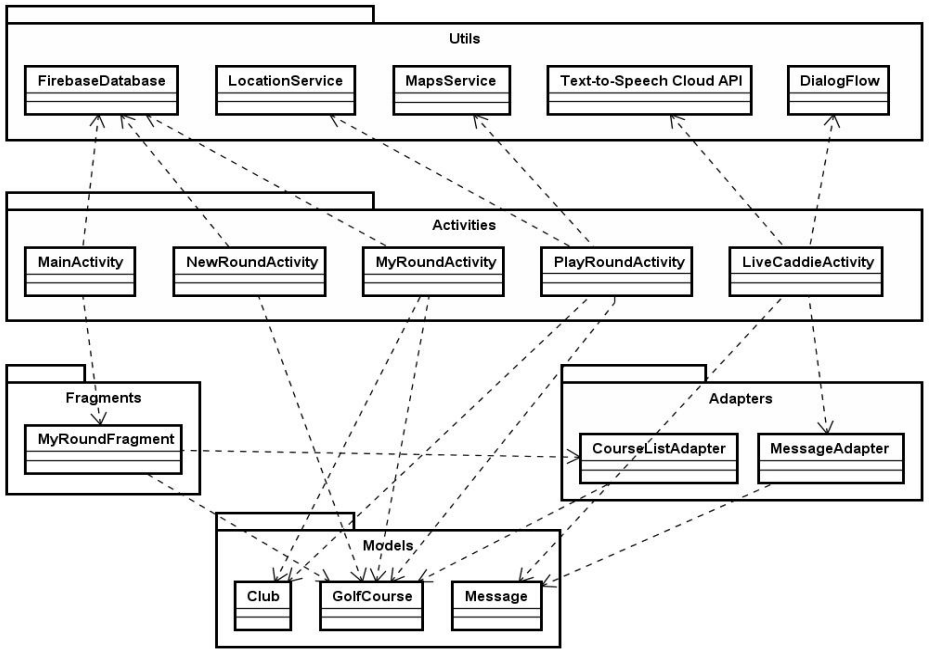
Choosing the ML classification threshold: If the return value is less than the threshold, it will trigger the fallback intent.



Front End

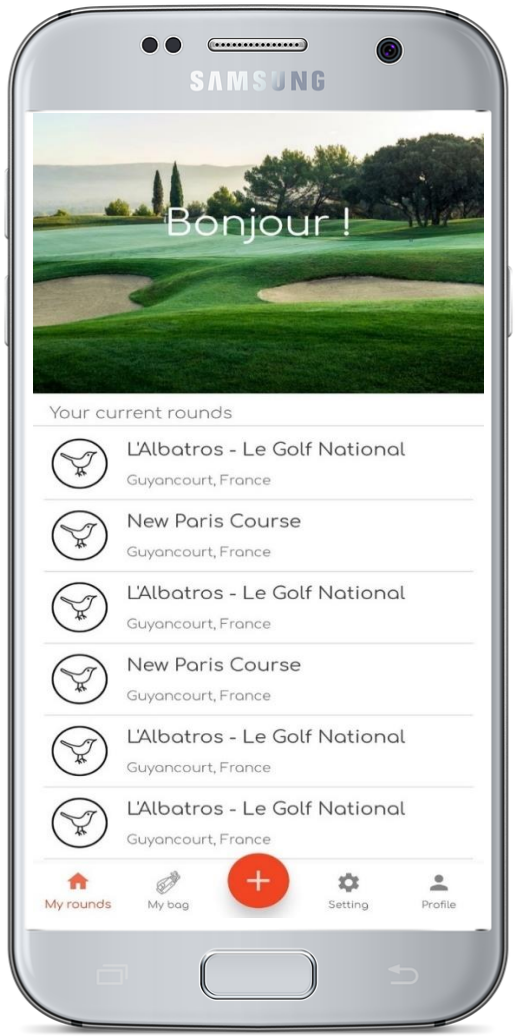
Front-end here is an Android Mobile application, including the interface for users to provide functions related to create new round, playing a round and talk with the Caddie.

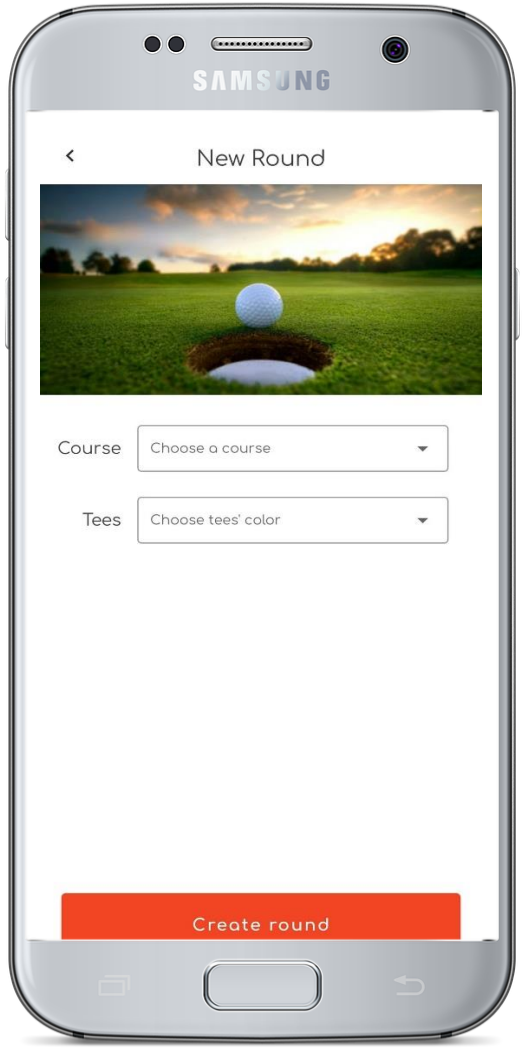




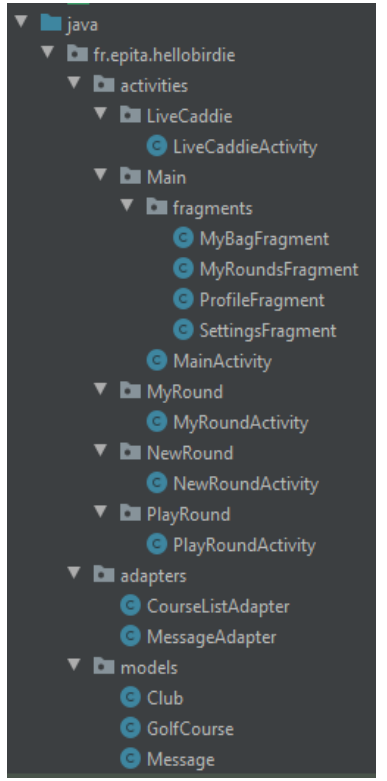
Application Component diagram

Main screens and features





Front-end structure



Final Users’stories

Distance: Voice Caddie can detect multiple targets and calculate the multiple distances as the need from user. This function has the advantage of reducing the numbers of requests, consequently, it helps to optimize the cost of using Dialog Flow.

Club Recommendation: Voice Caddie can classify different target and recommend the club accordingly. User can ask multiple targets, in the responding, Voice Caddie not only show the distance, but recommend to player which type of club they can use accordingly. We ensure the high speed respond and high accuracy rate above 90% as the requirement of this project. Besides, the google mapping has added in to improve the visualization. All these tools are to improve the performance of user once using the Voice Caddie function from Helllo Birdie.

Final Deliverables

Original agreements	Updated agreements	Final Delivery	Evaluation
3 Users' stories	1 Compete User' story	2 Compete User 'stories	Over Delivery
IOs Platform	Android Platform	Android Platform	Meet expectation
No UI/UX, Apple Watch Interfacings	Front-end with UI	Front-end + UI with Google Map Display	Over Delivery
Voice to text out put	Text to Speech output	Text to Speech output	Meet expectation

The project – Voice Caddie has 4 key items with 2 key items meet expectation and 2 key items over delivery. As the final agreements, Voice Caddie can detect the voice and respond to the user with Voice output as well. This is the best way to interact with users and improve the performance of users while using Hello Birdies.

Besides, we have ensured the voice detection accuracy at above 90% by using DialogFlow for our application.

Further Improvement: The 3rd user' story can be finished with the right update of the database. The final source code and application have been delivered to Sponsor. This will ensure Voice Caddie can further develop the Gameplan.

Thank you!

Team EagleS

Thanh Tung TRINH
Sanjeet MAISNAM
Anh Tu NGUYEN
Shuhbam RANA