Deakin University

AI - Optimisation

Project Handover

Date - 28/09/2018

Project Sponsor

Company, Yarra Ranges Tech School

Project Team

Team - AI Optimisation

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Predit Regmi, 217652071

Document Version 1.0

Purpose

This document defines the transfer of all relevant information and artefacts produced during the course of SIT764. With this document, a new member should be able to identify all key aspects and artefacts of the project and have access to key systems or configurations.

Project Description

The Yarra Ranges Tech School seeks the development of a web application to promote learning and understanding of the principles of Data Science and AI-Optimisation problems.
The AI should utilise global food distribution and sourcing data to simulate the effects of changing weather patterns, water availability, and increasing population have on global food supply.

The Project address long-term sustainable solutions and address key functions of Affordability and pricing and maximising yield.

The application should allow for visual design and operation to undertake analysing global food supply and promote the role and use of Data Science and AI-Optimisation problems in making informed decisions.

It is difficult to find answers for a specific question related to food and agriculture field.
For example, Google or any other search engine does not provide correct answers to following types of questions.

- What was production of apples in Austraila in 2014?

People who are working on food and agriculture fields and those who have sufficient information regarding these field are not integrate their knowledge with the technology to cope up with this problem.
As a solution for this matter the proposed solution is,
<u>Integration</u>

- The final deliverable is based on Google AIY Voice KIT v1.0
- Utilise the Google Assistant SDK
- Handle event ON_RECOGNIZING_SPEECH_FINISHED to return text interpretation of user question
- Utilisation of NLTK Chat http://www.nltk.org/_modules/nltk/chat/eliza.html

Capability of the project as discussed with the client

- Global Food data
- Global calorie data
- Global crop data

Artefacts List

Artefact Name	Artefact Type	Revision Number	Notes
Google AIY Voice KIT v1.0	Executable	28th september 2018 (V1)	Can only run with proper credentials.
Source Code	Executable	28th september 2018 (V1)	Need to run in the cloud.
Data	Database	28th september 2018 (V1)	Google cloud firestore database
Server Access Methods	Credentials	28th september 2018 (V1)	-
User Manual	Word file	28th september 2018 (V1)	-

Business Features

Feature	Sign-Off State	State
Ask question and get answer back related to data	Signed off 28th September 2018	Final
Configuring Firebase Database	Signed off 28th September 2018	Final
Development of website	Signed off 28th September 2018	Final

Planned Work

Planned Feature	State	Sprint	Notes
Chatbot	Completed	4	Works with Google assistant
Website	Completed	2	Gives details about project. https://aioptimization-rp.mybluemix.net/

Open Issues

Current challenges encountered:

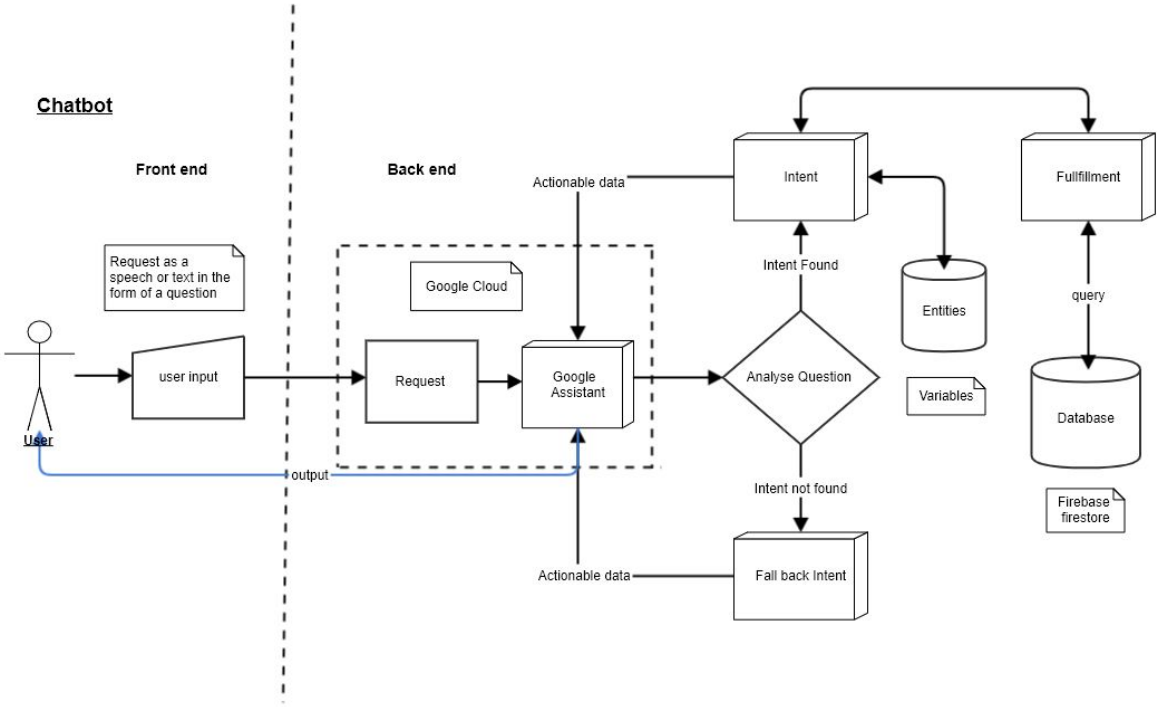
- Amount of data collected is not sufficient.
- Free version of database has limitations on access and storage.

Lessons Learned

As this unit gives the situation and conditions of how an individual should function with a group with a weight for due date and additionally the nature of the venture.

We as students of Masters of Information Technology have taken in a great deal from this unit, regardless of whether it is about finish of work , nature of the work, working with the group or keeping up the space with all the group individuals so that there are no contentions inside the group with respect to any issues. This unit has helped us a considerable measure in each angle.

High-level architecture of the product



User Manual

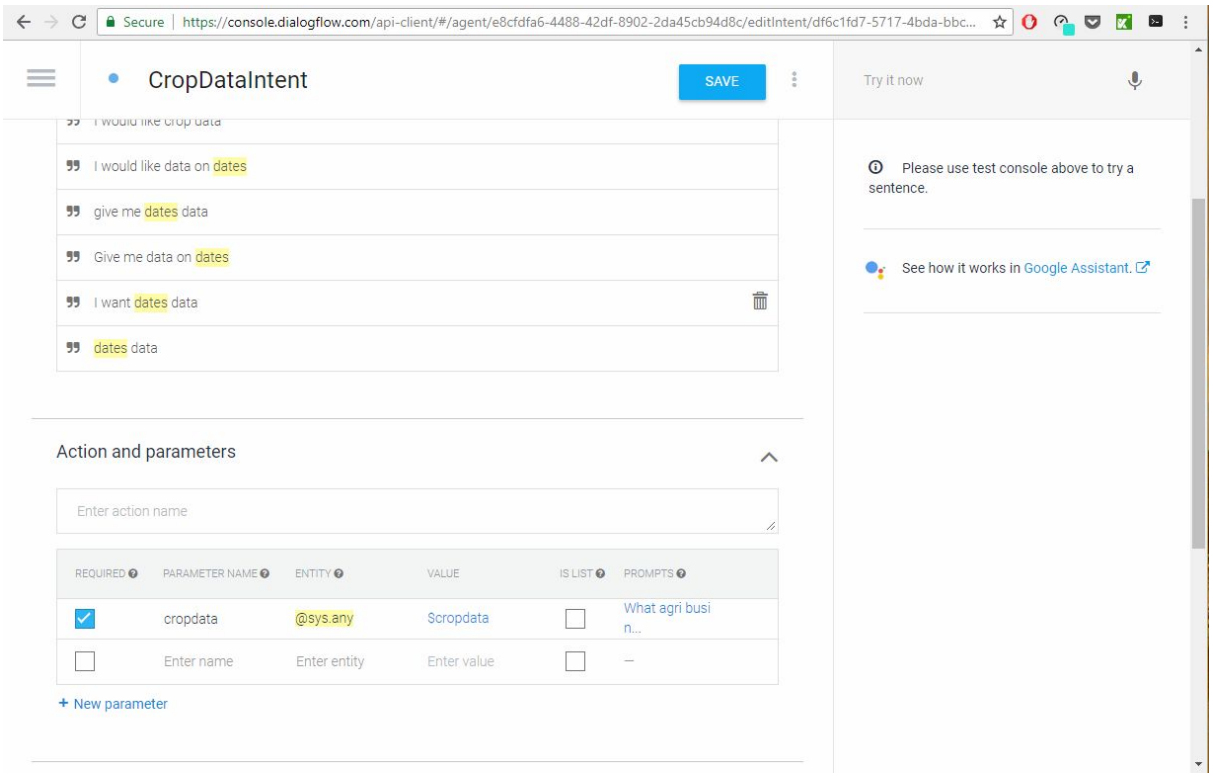
Raspberry Pi Configuration:
Refer to the official documentation here:
https://aiyprojects.withgoogle.com/voice/#google-assistant--log-in-to-your-kit

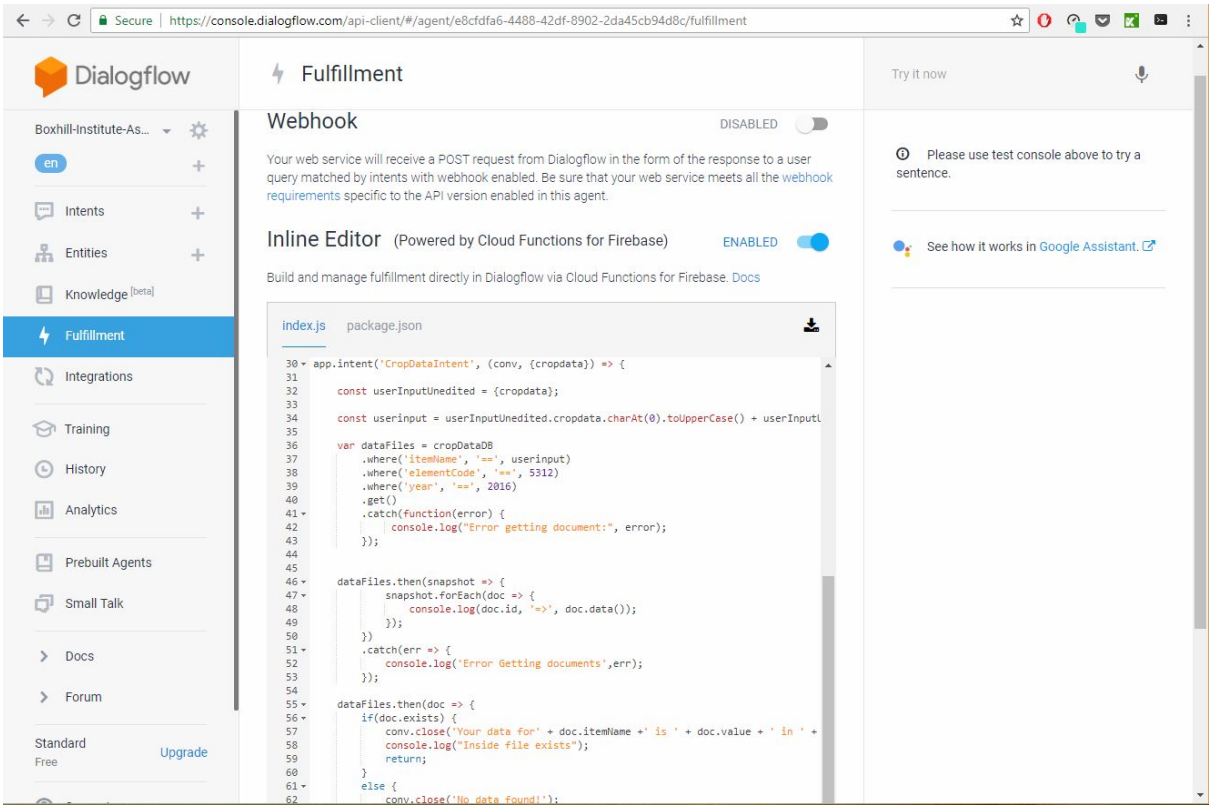
Google Project Access:
The access to the source code can be found by logging into the following link with the following account:
Link: https://console.actions.google.com/
Username: yaratechaiop@gmail.com
password: YaraTech123

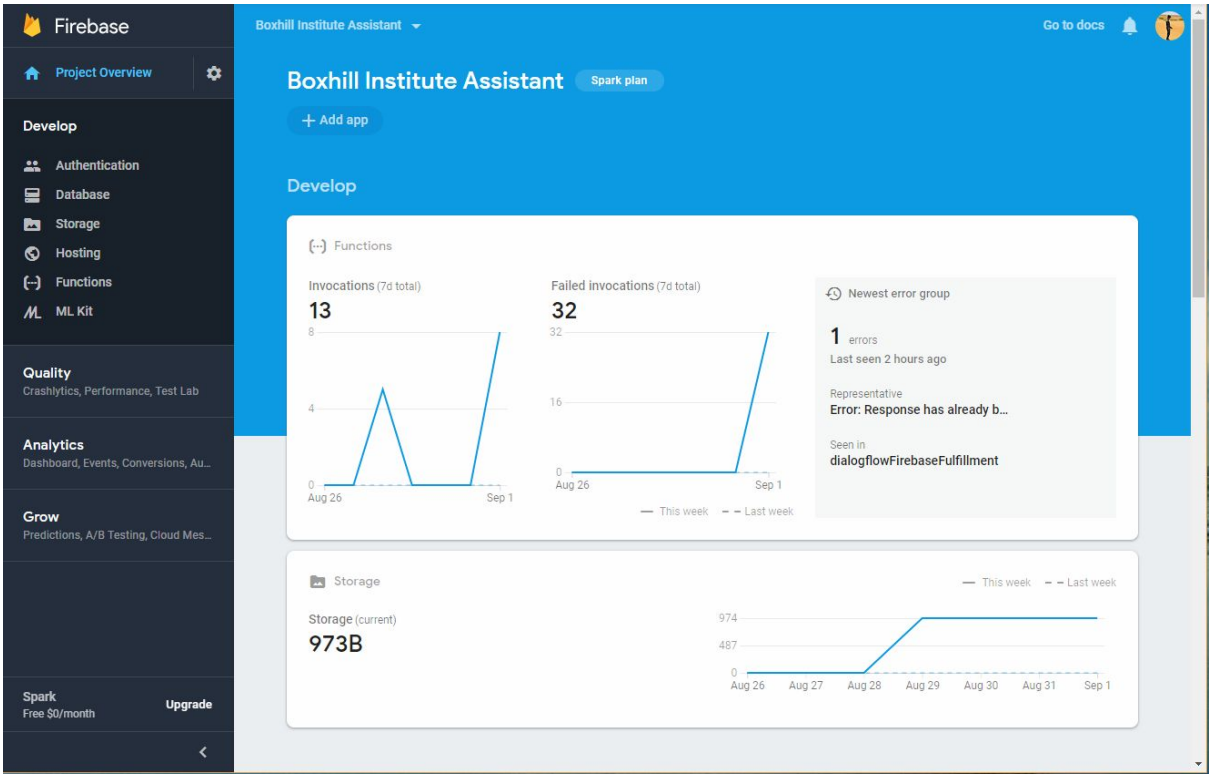
URL of the website: https://aioptimization-rp.mybluemix.net/

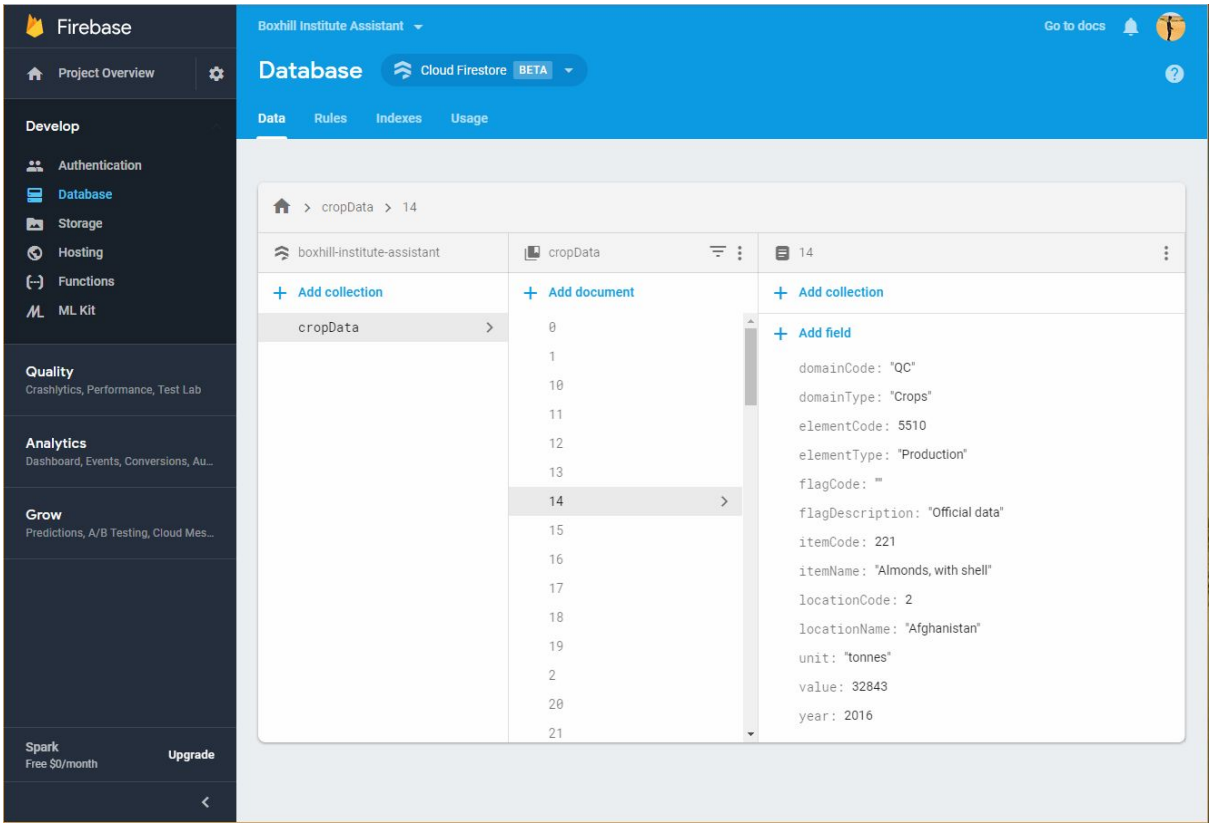
Other Documents

Screenshots:




Secure | https://console.dialogflow.com/api-client/#/agent/e8cfdfa6-4488-42df-8902-2da45cb94d8c/fulfillment
Dialogflow
Boxhill-Institute-As...
en
Intents
Entities
Knowledge [beta]
Fulfillment
Integrations
Training
History
Analytics
Prebuilt Agents
Small Talk
Docs
Forum
Standard
Free
Upgrade
Fulfillment
Webhook
DISABLED
Your web service will receive a POST request from Dialogflow in the form of the response to a user query matched by intents with webhook enabled. Be sure that your web service meets all the webhook requirements specific to the API version enabled in this agent.
Inline Editor (Powered by Cloud Functions for Firebase)
ENABLED
Build and manage fulfillment directly in Dialogflow via Cloud Functions for Firebase. Docs
index.js
package.json
app.intent('CropDataIntent', (conv, {cropdata}) => {
const userInputUnedited = {cropdata};
var dataFiles = cropDataDB
.where('itemName', '==', userinput)
.where('elementCode', '==', 5312)
.where('year', '==', 2016)
.get()
.catch(function(error) {
console.log("Error getting document:", error);
});
dataFiles.then(snapshot => {
snapshot.forEach(doc => {
console.log(doc.id, '=>', doc.data());
});
})
.catch(err => {
console.log('Error Getting documents',err);
});
dataFiles.then(doc => {
if(doc.exists) {
conv.close('Your data for' + doc.itemName +' is ' + doc.value + ' in ' +
console.log("Inside file exists");
return;
}
else {
conv.close('No data found!');
Try it now
Please use test console above to try a sentence.
See how it works in Google Assistant.


Firebase
Project Overview
Develop
Authentication
Database
Storage
Hosting
Functions
ML Kit
Quality
Crashlytics, Performance, Test Lab
Analytics
Dashboard, Events, Conversions, Au...
Grow
Predictions, A/B Testing, Cloud Mes...
Spark
Free $0/month
Upgrade
Boxhill Institute Assistant
Go to docs
Boxhill Institute Assistant
Spark plan
Add app
Develop
Functions
Invocations (7d total)
13
Failed invocations (7d total)
32
Newest error group
1 errors
Last seen 2 hours ago
Representative
Error: Response has already b...
Seen in
dialogflowFirebaseFulfillment
Aug 26
Sep 1
This week
Last week
Storage
Storage (current)
973B
974
487
0
Aug 26
Aug 27
Aug 28
Aug 29
Aug 30
Aug 31
Sep 1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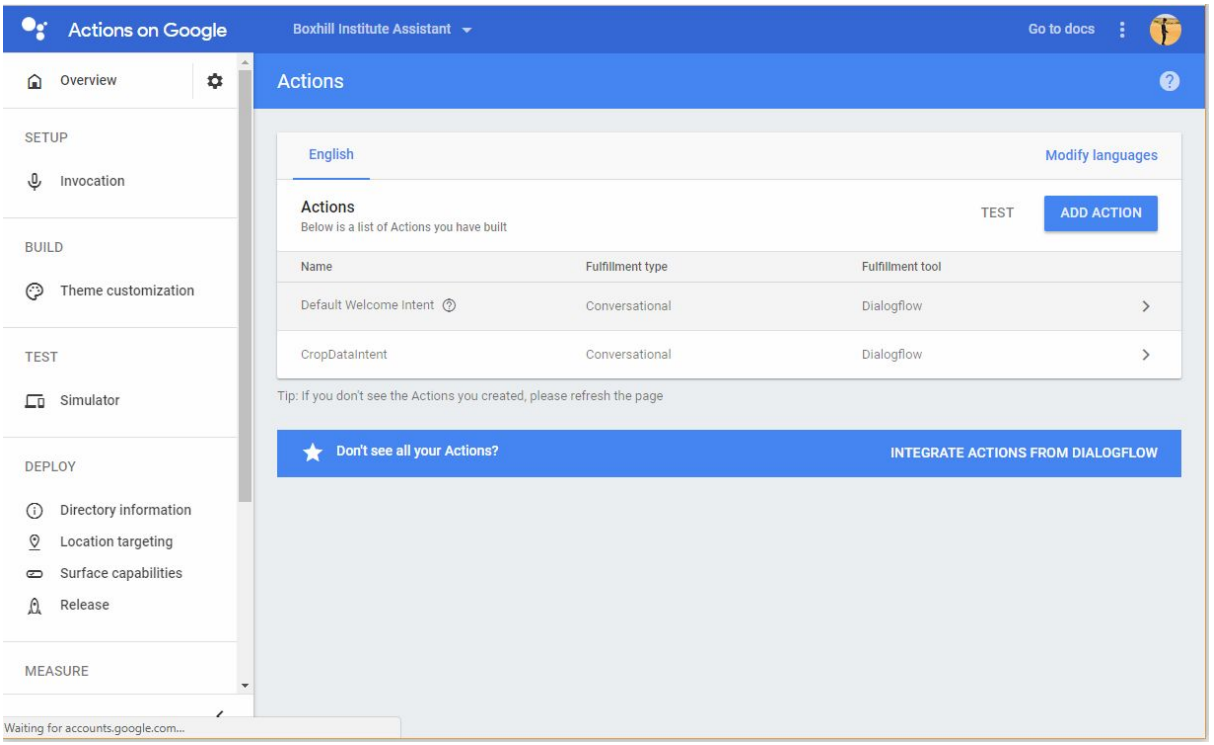
Spark
Free $0/month
Upgrade
Boxhill Institute Assistant
Go to docs
Database
Cloud Firestore BETA
Data
Rules
Indexes
Usage
cropData > 14
boxhill-institute-assistant
cropData
14
Add collection
Add document
Add collection
Add field
cropData
0
1
10
11
12
13
14
15
16
17
18
19
2
20
21
domainCode: "QC"
domainType: "Crops"
elementCode: 5510
elementType: "Production"
flagCode: ""
flagDescription: "Official data"
itemCode: 221
itemName: "Almonds, with shell"
locationCode: 2
locationName: "Afghanistan"
unit: "tonnes"
value: 32843
year: 2016


Actions on Google
Boxhill Institute Assistant
Go to docs
Overview
SETUP
Invocation
BUILD
Theme customization
TEST
Simulator
DEPLOY
Directory information
Location targeting
Surface capabilities
Release
MEASURE
Actions
English
Modify languages
Actions
Below is a list of Actions you have built
TEST
ADD ACTION
Name
Fulfillment type
Fulfillment tool
Default Welcome Intent
Conversational
Dialogflow
CropDataIntent
Conversational
Dialogflow
Tip: If you don't see the Actions you created, please refresh the page
Don't see all your Actions?
INTEGRATE ACTIONS FROM DIALOGFLOW
Waiting for accounts.google.com...

Sign-off

We <Akhil Peddineni, Tharini Hasara Manawadu De Silva, Sushma Devabattini, Parth Dinesh Modi, Kunal Dhariwal, Predit Regmi> have included all relevant material which is agreed to be included in this handover. If an artefact is not included, it is stipulated in the Planned Work section, or artefacts list.

Date: 28th September 2018

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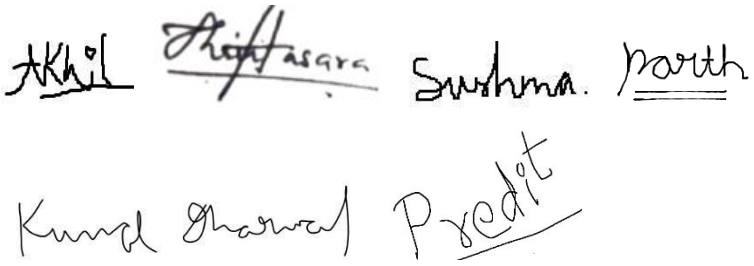
Signed



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