AI Project
Durian Classification

Team 2

- Desmond Fong Yew Mun
- Henry Lim Chin Thian
- Kelvin Soh Kwang Weng
- Tan Ke Jie
- Yeow Whye Seng

Agenda

1. Business case development with EDT and Design for AI
2. Deep learning development with Python programming
3. Chatbot development with Watson Assistant
4. Integration for deployment with Github, Heroku and Bootstrap
5. Project planning & Live Demo of the AI model

Tools for final AI Project

IBM AI Team 2

Kelvin Soh - Project Manager

Desmond Fong - Domain Expert

Tan Ke Jie - AI Engineer (Pythonista)

Yeow Whye Seng - AI Integration Expert

Henry Lim - Watson assistant Expert

Business case development

EDT and Design for AI

Problem Statement

How might we more accurately identify different Durian species for Durian Lovers so that they know and be assured of what they are purchasing

Reframe HMW Statement

How might we better improve the Durian species verification process for Durian Lovers so that they can be confident of the durian species they are purchasing

Persona

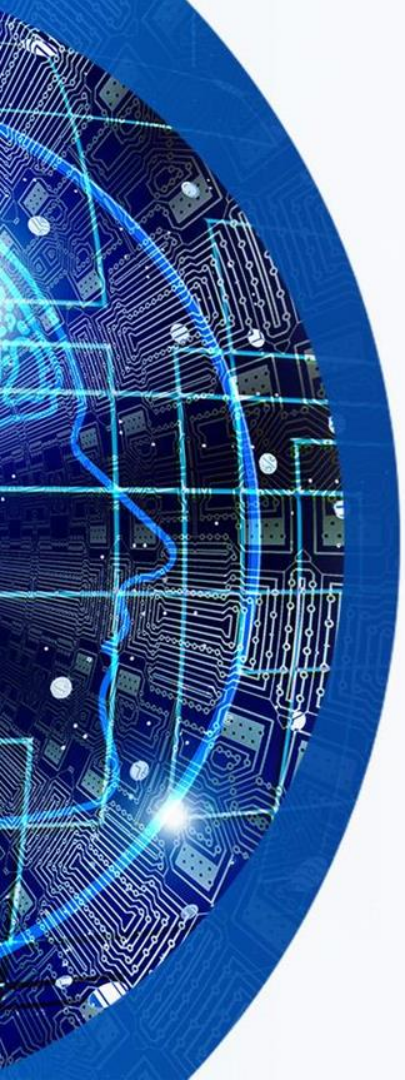
Name Robin

Profile

Age	25
Location	Singapore
Education	Tertiary
Job	Office Worker
Family	Father of 2 kids
Work experience	1 year working experience
Technical literacy	Able to use computer to surf net and use mobile phone

"Durian is the essence of life, without it, it is meaningless"

Robin Lim, July 2022



Pain Points

i. Not sure if what we get is what we paid for
ii. Some like sweet, some like bitter durians
iii. Willing to pay more but must be the types he likes
iv. Cannot differentiate different durians breed
v. All durians look alike

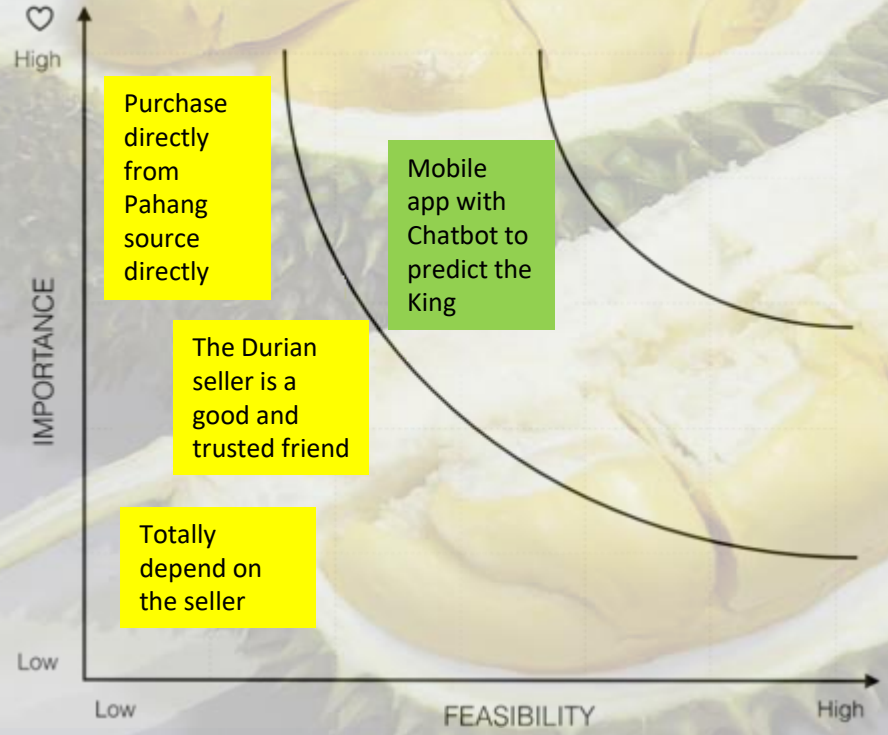
Big Ideas

take a picture of durians and quickly identify durian breed on either android and iphone

an app that identify durian and accessible on different platform such as web or phone

interact via chatbot to search and display the picture of durian type

Idea Prioritization Grid



Big Idea -Storyboard

It is durian season!!

Robin had craving for mao shan wang durian. And he is researching on where to get the best value for money durians.

Robin went to a durian stall he found online. He was looking at the mao shan wang durian section.

Robin took out his mobile phone and snap a photo of the durian. He then upload the photo to a new durian identification mobile app. He quickly confirm that the durian he was looking at was the mao shan wang durian.

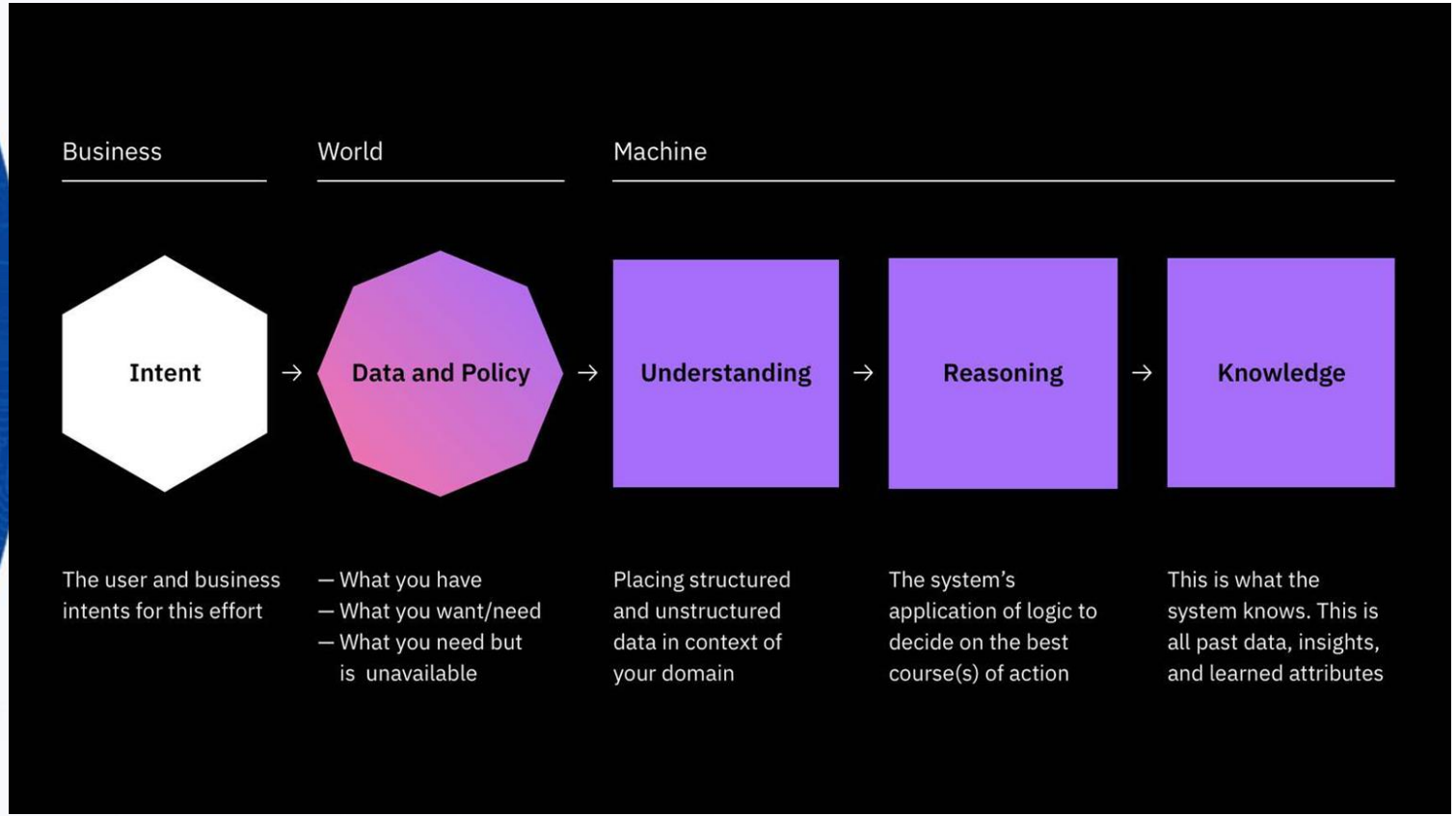
Robin approach the durian seller and ask to inspect the interior of the mao shan wang durian. The durian seller open up the durian for Robin.

Robin was happy with the durian and he bought 6 mao shan wang durians home.

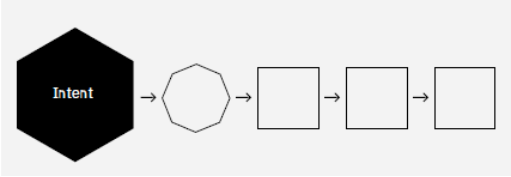
And he had a durian feast with his family at home. He and his family enjoyed the mao shan wang durian.

Robin after a MSW feast. His wife is convinced that durians are good for him!

AI Design Essentials



Intent



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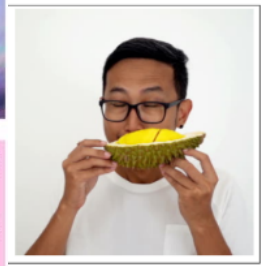

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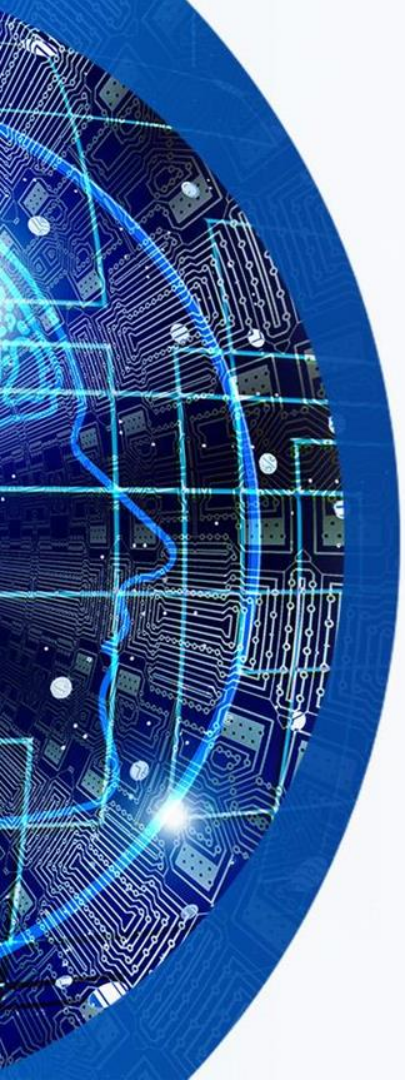
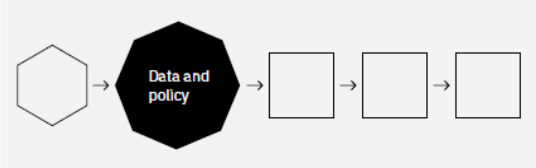
How might we better improve the Durian species verification process for Durian Lovers so that they can be confident of the durian species they are purchasing



Data and Policy



Data we need

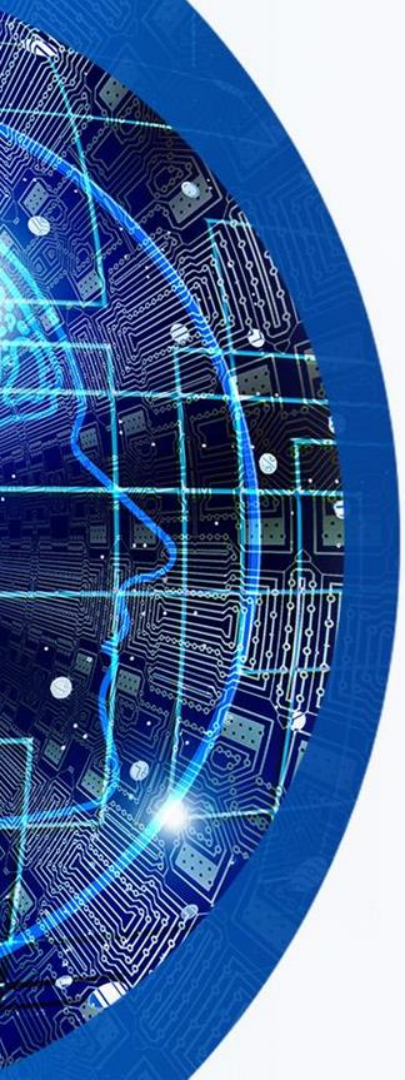
Market

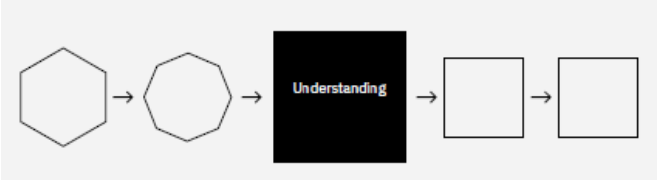
- Types & Species of Durian
- Tastes of the fruits

Data we have

Public

- (Kaggle durian Image)
- Price of durian





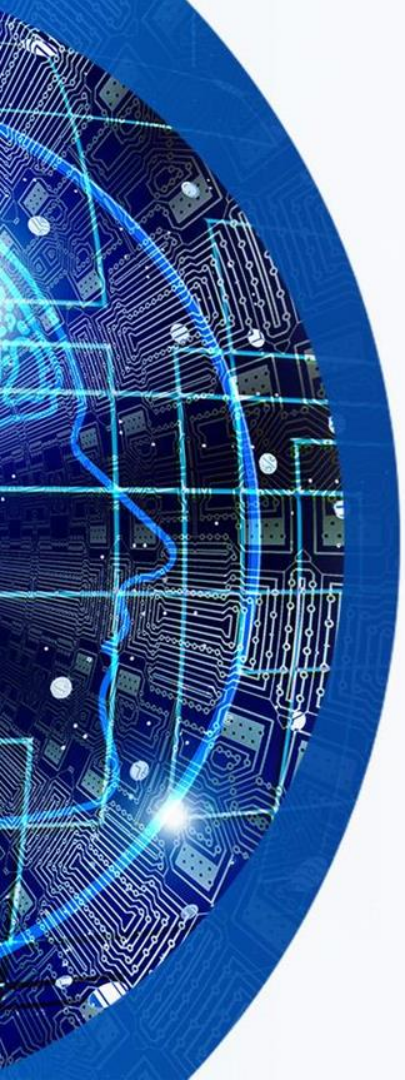
Understanding

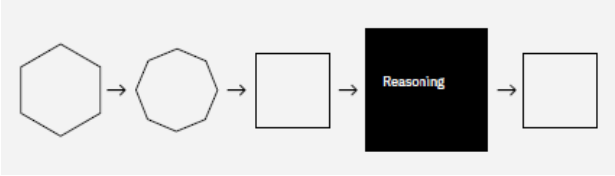
Placing structured and unstructured data in context of our domain

Type	Taste	Source	Rarity
D101	Mildly sweet, buttery	Johor	Common
D13	Fragrant, sweet, sticky	Johor	Common
Tekka	Sweet, floral	Pahang	Rare
D24 Sultan	Bittersweet, creamy	Pahang	Common
Golden Phoenix	Sharp, bitter	Johor	Uncommon
D1	Mildly sweet	Johor	Common
Mao Shan Wang	Bitter, creamy, sticky	Pahang	Common

Structured data

Unstructured data





Reasoning

The system’s application of logic to decide on the best course of action - by shells and external features

20200815_115006.jpg
75.63 KiB

20200815_115039.jpg
86.21 KiB

20200815_105742.jpg
53.09 KiB

20200815_105825.jpg
50.5 KiB

20200815_143747.jpg
47.41 KiB

20200815_143754.jpg
47.63 KiB

20200815_115134.jpg
50.5 KiB

20200815_115212.jpg
57.98 KiB

20200815_105930.jpg
47.22 KiB

20200815_105944.jpg
48.7 KiB

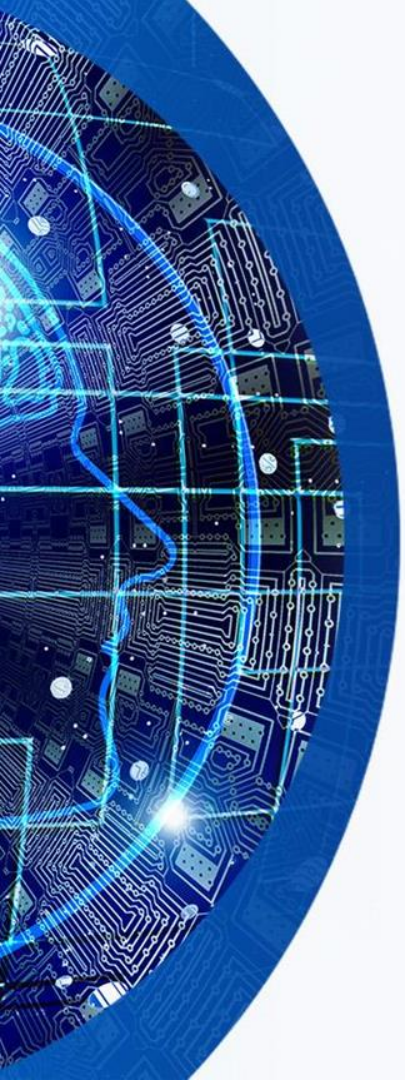
20200815_143808.jpg
42.46 KiB

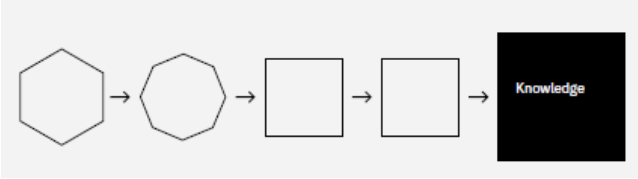
20200815_143817.jpg
54.42 KiB

D197 MSW

D24 Sultan

D13 Red Prawn





Knowledge

This is what the system knows - species, tastes, prices, locations of stalls

MAO SHAN WANG

Other names: Butter durian, Cat Mountain King, Rajah Kunyit

Colour: Bright yellow

Taste notes: Durian connoisseurs love its bittersweet taste and sticky, creamy texture. The flesh can be sweet and bitter within the same fruit.

From: Kelantan, Pahang and Johor

D24

Other names: Sultan

Colour: Pale yellow

Taste notes: Very creamy and bitter.

From: Johor, Pahang, Cameron Highlands

RED PRAWN

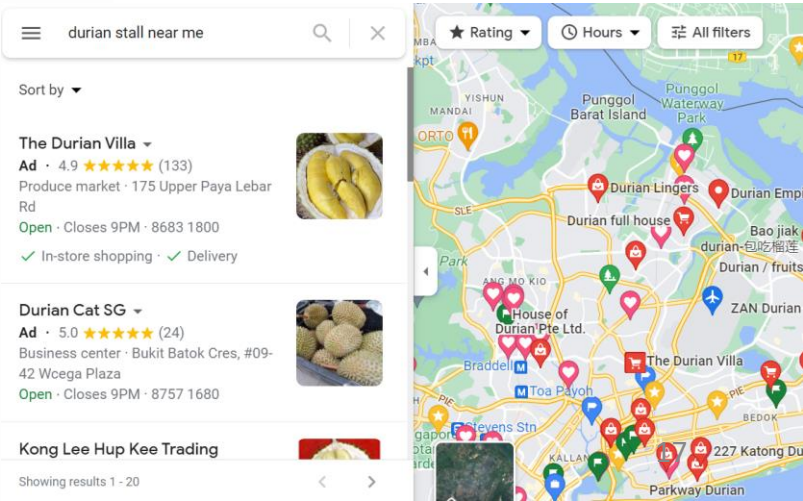
Other names: Hong Xia, Ang Hay

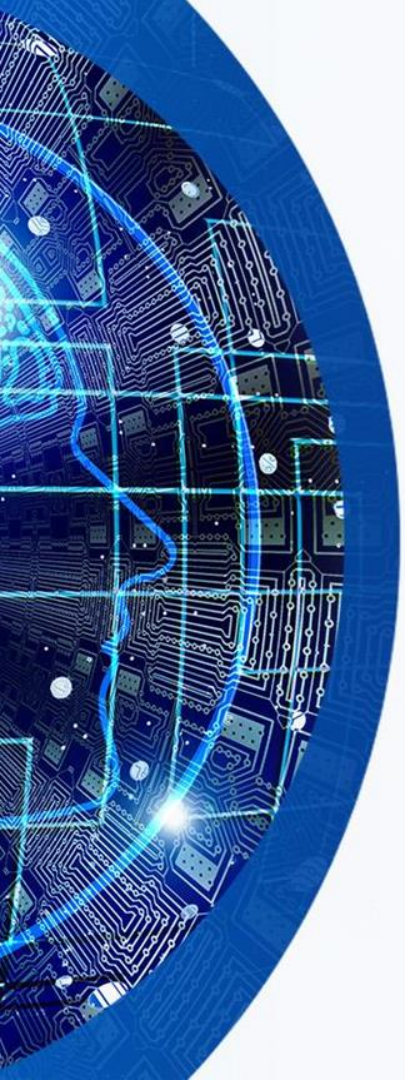
Colour: Orangey-red

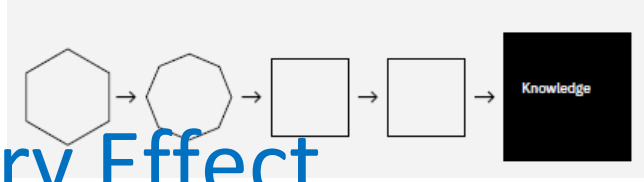
Taste notes: Sticky with a sweet aftertaste.

From: Pahang, Johor

Type Of Durian	Average price per kg
Red Prawn	$43-$58/kg
Gold Phoenix	$68-$85/kg
D13	$43-$57/kg
Old Tree Mao Shan Wang	$89-$98/kg
Mao Shan Wang	$75-$83/kg







Knowledge – Primary Effect

The intended value of our AI to our business and users

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Gives the durian lover the confidence to choose and buy the durian species that he likes

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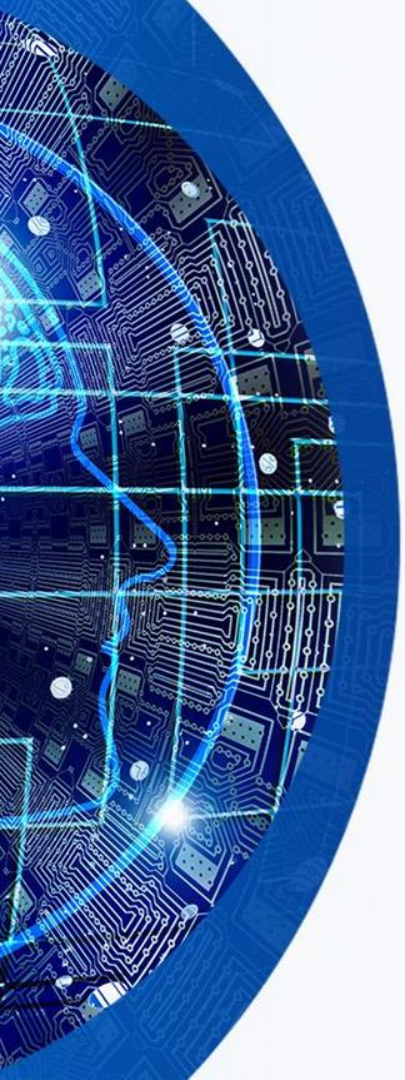

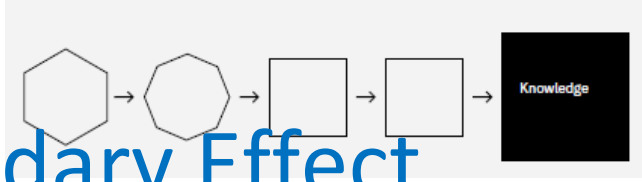

Knowledge – Secondary Effect

The unintended value that our AI gives to our business and users

Type Of Durian	Average price per kg
Red Prawn	$43-$58/kg
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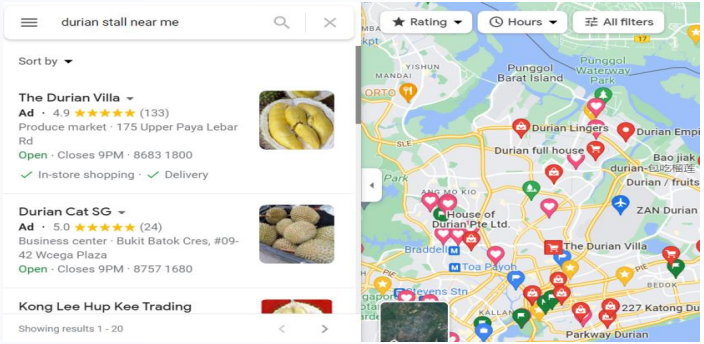
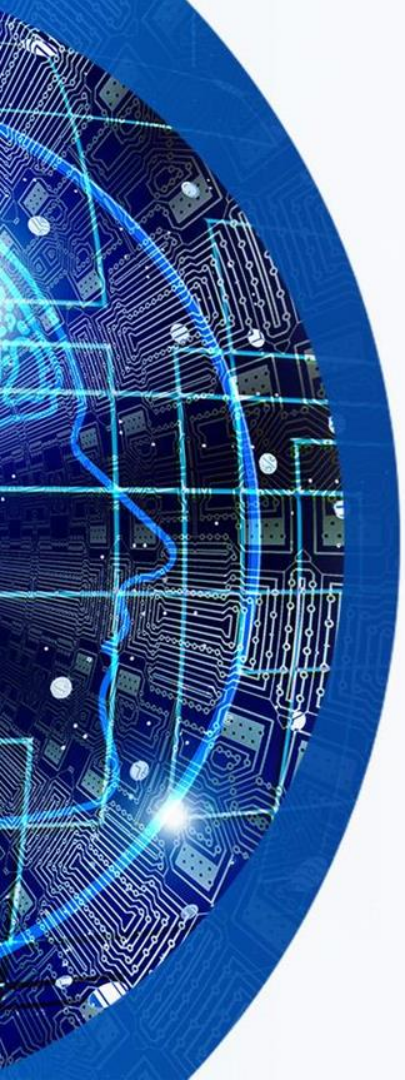
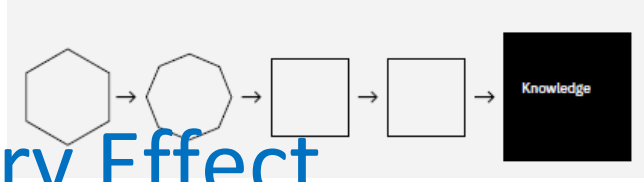


Shows the durian lover the indicative prices of the different durian species, and also showing him the durian stalls near to him.





Knowledge – Tertiary Effect

The unintended consequences of our AI that could negatively impact our business or users

1. High traffic for recommended stalls
2. Drives up demand and prices
3. Popular species quickly get out of stock

Deep Learning Model Development

~~Tensorflow Keras in Python~~

Our Approach

Lost and Panic

Type of Layer/ Neural Network

Loss Function

Encoding

Data Processing

Batch-Size

# of Neurons in each Layer

Optimiser

Learning Rate

Train, Validate, Test Dataset

# of Epochs

# of Layers

Activation Function

Research

Google

YouTube

towards data science

Loss Function: Categorical crossentropy

Encoding: One-Hot Encoding (auto performed in ImageDataGenerator)

Type of Layer/ Neural Network: CNN+ANN

Data Processing: VGG16/ Grayscale

Batch-Size: 32

# of Neurons in each Layer: 1024/512/256/128/64/32

Optimiser: Adam

Learning Rate: 0.0001

Train, Validate, Test Dataset 7:2:1

# of Epochs: depends on amount of data we have

# of Layers: start from small

Activation Function: Relu/ sigmoid and Softmax

A Structured Approach

DATA INSPECTION
To better understand our data so that we develop the best way to process them

↓

DATA PROCESSING
To prepare them for feeding into the Neural Network for training the deep learning model

↓

NEURAL NETWORK STRUCTURE OPTIMISATION
To optimise the number of layers and neurons in the network.

↓

HYPERPARAMETERS ADJUSTMENT
Only revisit the fixed hyperparameters if good accuracy (>60%) cannot be obtained

Data Inspection and Processing

Name	Total Images
D2	200
D13	362
D24	529
D88	211
D101	50
D197	772
D198	216
D200	71

- For each durian species,
- Training : Validation : Testing
- ~70% : ~20% : ~10%
- 253 images: 72 images : 36 images

Data Inspection and Processing

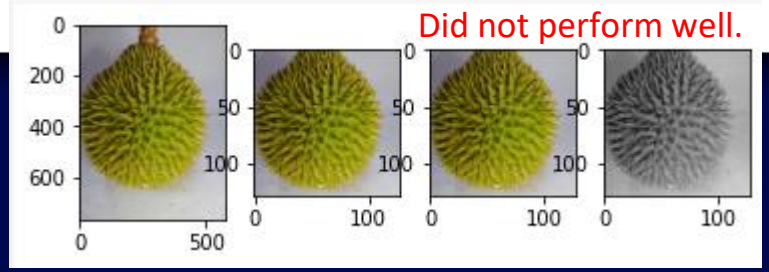
Resize and Crop Process

128 pixels

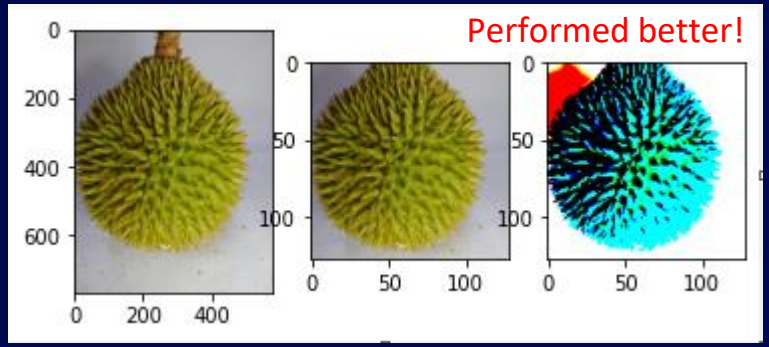
128 pixels

1024 x 768 pixels
Resize
(Keep aspect ratio)
171 x 128 pixels
Crop
128 x 128 pixels

576 x 768 pixels
Resize
(Keep aspect ratio)
128 x 171 pixels
Crop
128 x 128 pixels

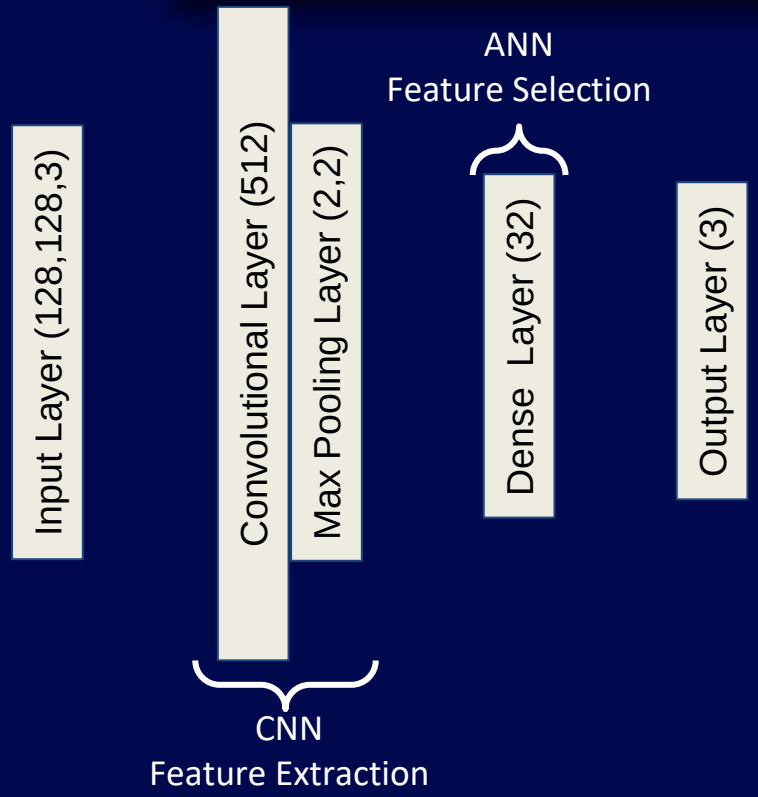


Original Image | Resize and crop | Scaling | Grayscale



Original Image | Resize and crop | VGG16 image processing RGB -> BGR

Neutral Network Structure Optimisation



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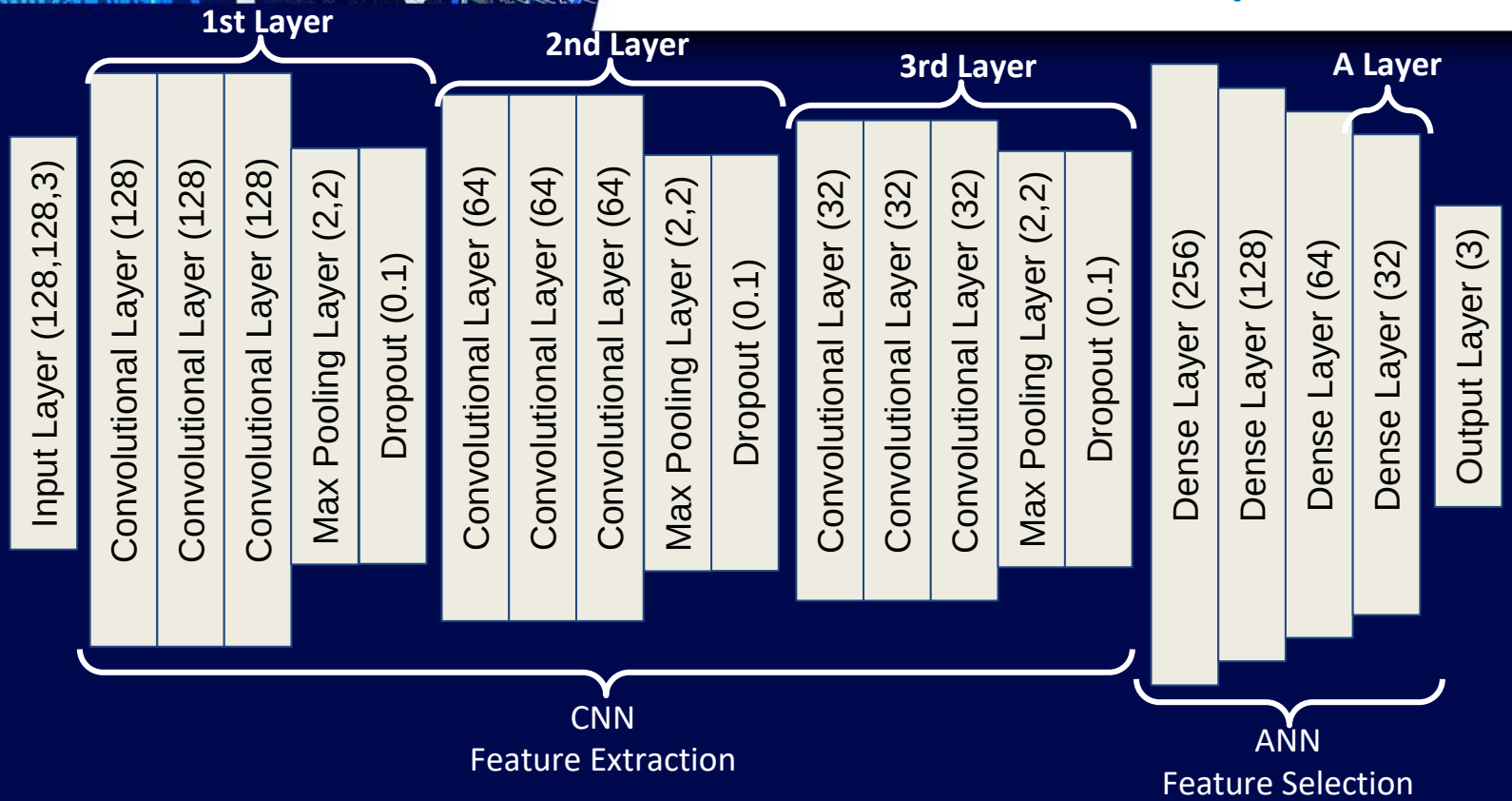
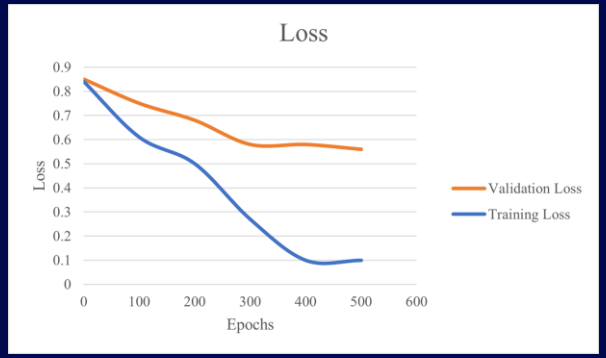
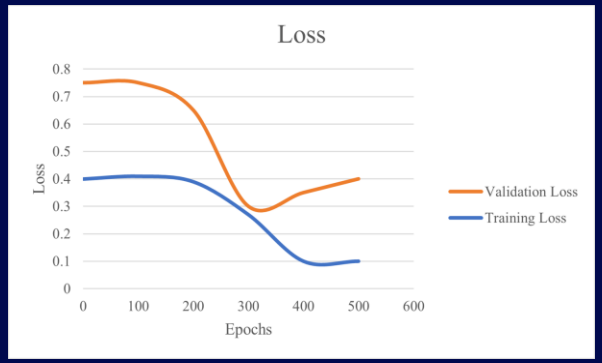


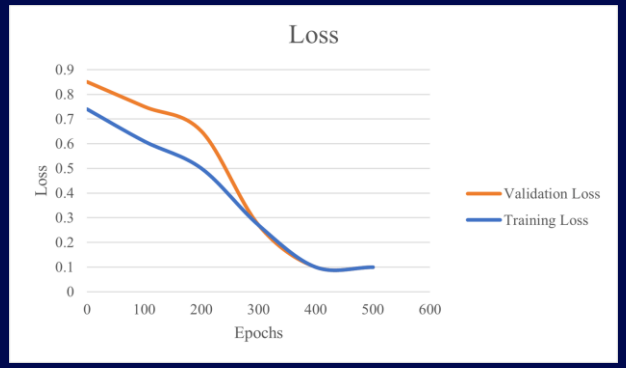
Training and Validation Loss



Underfitting Fit



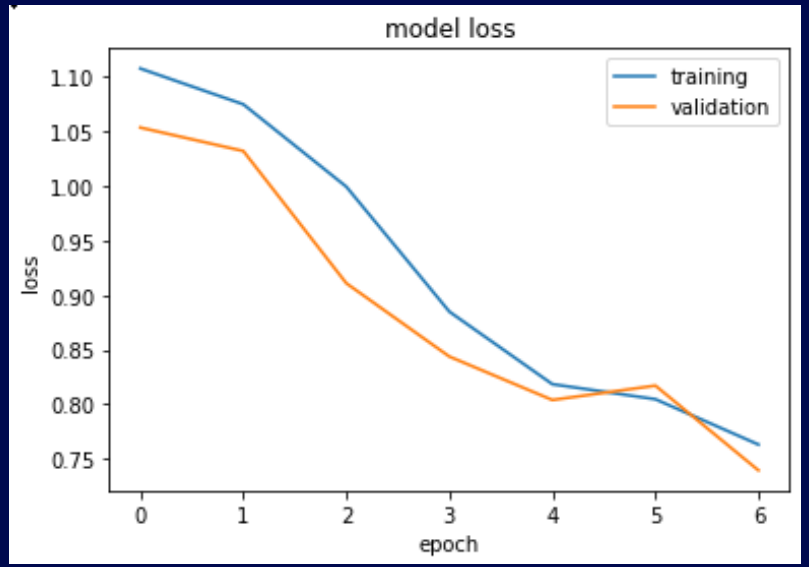
Overfitting Fit

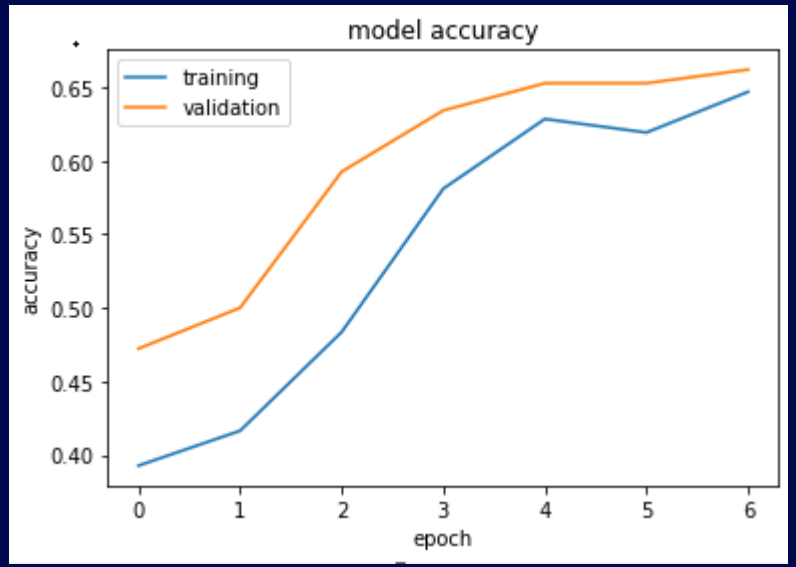


Good Fit

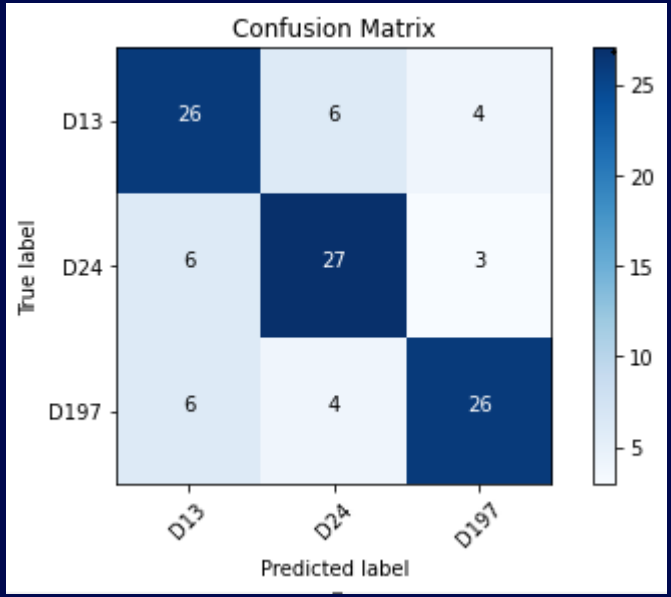
https://www.baeldung.com/cs/training-validation-loss-deep-learning#:~:text=The%20validation%20set%20is%20a,example%20in%20the%20validation%20set.

Training and Validation Loss





Confusion Matrix

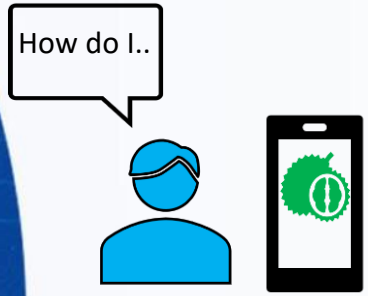


Recall for each category and accuracy were over 70%!

Chatbot development

Watson Assistant

Flow Conversation Design



To help user to:
1) Identify the type
2) Choose the taste
etc

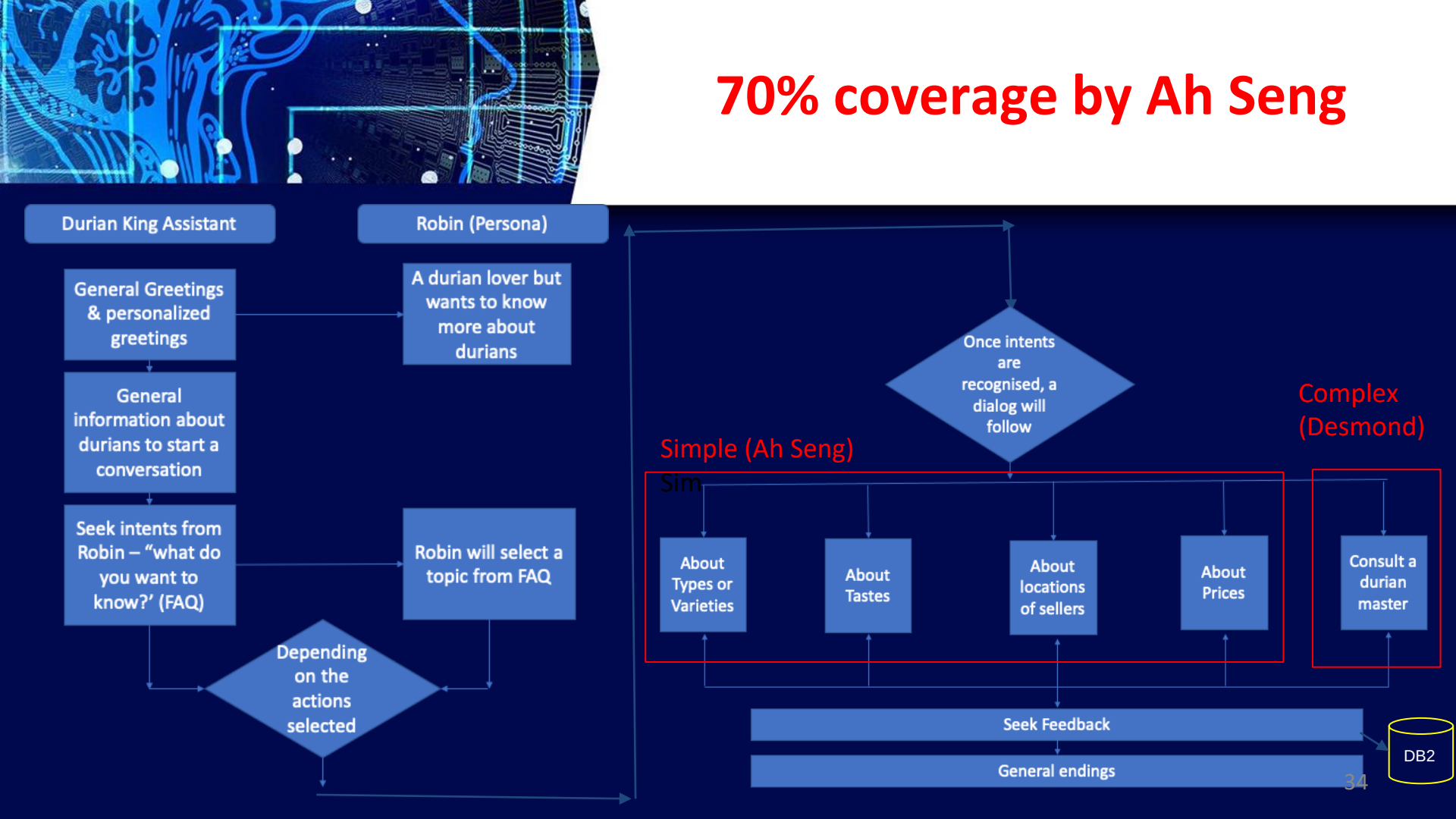
Is the answer found in a content repository (e.g KB[1])

To connect to various search portal base on logic responds

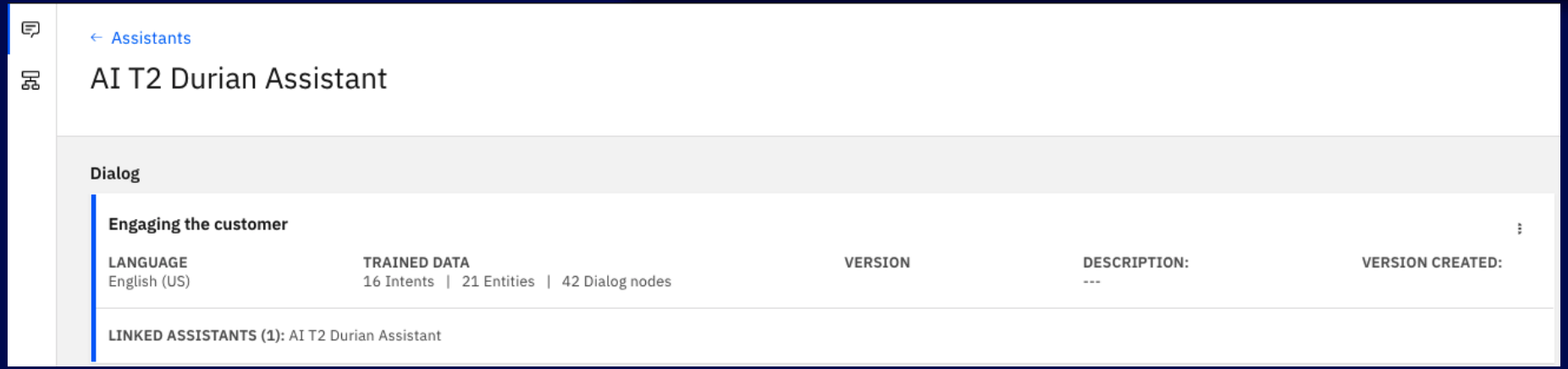
Request user's feedback and contact details for continue engagement

KB[1] - Knowledge Base

70% coverage by Ah Seng



Dialog skills training in phases



MVP 1
English only
User Interface: Webchat

#INTENTS x 16

IBM **Watson Assistant** Lite Upgrade

Learning center

Engaging the customer

Save new version | Try it

- **Intents**
- **Entities**
  - My Entities
  - System Entities
- **Dialog**
- **Options**
  - Webhooks
  - Disambiguation
  - Autocorrection
  - Algorithms Versions
- **Analytics**
  - Overview
  - User conversations
- **Versions**
- **Content Catalog**

Create intent +

Intents (16) ↑	Description	Modified ↑↓	Examples ↑↓
#about_durians	General info about durian	2 days ago	14
#Consultation	Consult for import business, how to pick durian	6 days ago	16
#General_About_You	Request generic personal attributes.	3 days ago	20
#General_Agent_Capabilities	Request capabilities of the bot.	3 days ago	30
#General_Connect_to_Agent	Request a human agent.	3 days ago	38
#General_Ending	End the conversation.	3 days ago	38
#General_Greetings	Greet the bot.	12 days ago	27
#General_Human_or_Bot	Ask if speaking to a human or a bot.	3 days ago	12
#General_Jokes	Request a joke.	3 days ago	17
#General_Negative_Feedback	Express unfavorable feedback.	12 days ago	20
#General_Positive_Feedback	Express positive sentiment or gratitude.	12 days ago	19
#General_Security_Assurance	Express concerns about the security of the bot.	12 days ago	26
#locations	Locations of durian sellers in Singapore	4 days ago	6
#Prices	Price of durians	4 days ago	6

Showing 1–16 of 16 intents

1 ⌄ 1 of 1 pages

@ENTITIES x 21

IBM **Watson Assistant** Lite Upgrade

Learning center

Engaging the customer

Save new version | Try it

IBM **Watson Assistant** Lite Upgrade

Learning center

Engaging the customer

Save new version | Try it

- Intents
- Entities
  - My Entities
  - **System Entities**
- Dialog
- Options
  - Webhooks
  - Disambiguation
  - Autocorrection
  - Algorithms Versions
- Analytics
  - Overview
  - User conversations
- Versions
- Content Catalog

The following entities are prebuilt by IBM to recognize references to things like numbers and dates in user input. Turn on a system entity to start using it. You cannot edit system entities.
Learn more

Name (5)	Description	Status
@sys-time	Extracts time mentions (at 10)	On
@sys-date	Extracts date mentions (Friday)	On
@sys-currency	Extracts currency values from user examples including the amount and the unit. (20 cents)	Off
@sys-percentage	Extracts amounts from user examples including the number and the % sign. (15%)	Off
@sys-number	Extracts numbers mentioned from user examples as digits or written as numbers. (21)	On

DIALOG TREE

IBM **Watson Assistant** Lite Upgrade

Engaging the customer

- **Intents**
- **Entities**
  - My Entities
  - System Entities
- **Dialog**
- **Options**
  - Webhooks
  - Disambiguation
  - Autocorrection
  - Algorithms Versions
- **Analytics**
  - Overview
  - User conversations
- **Versions**
- **Content Catalog**

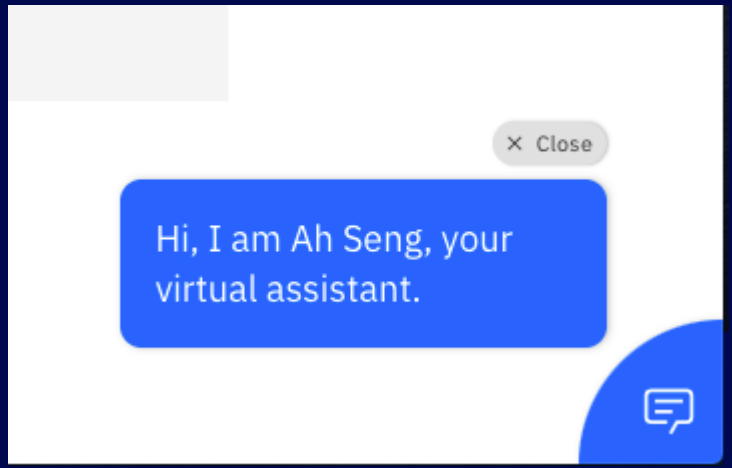
Add node | Add child node | Add folder

- Welcome to "Know the Durian King"
  welcome
  1 Responses / 0 Context Set / Does not return
- #General_Greetings
  1 Responses / 0 Context Set / Does not return
- Durian King Assistant
  #General_About_You
  1 Responses / 0 Context Set / Does not return
- About durians (General Intro)
  #about_durians
  1 Responses / 0 Context Set / Does not return
- About varieties or types or speciesBlack
  #species
  1 Responses / 0 Context Set / Does not return
- About Tastes
  #taste
  1 Responses / 0 Context Set / Does not return

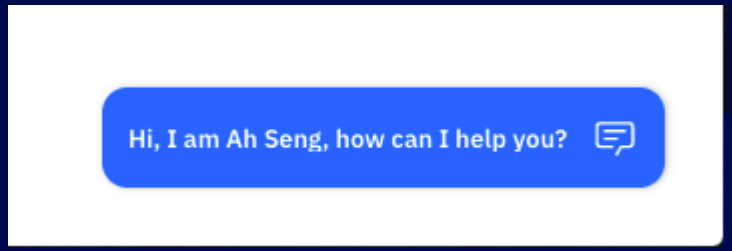
- Algorithms Versions
- **Analytics**
  - Overview
  - User conversations
- **Versions**
- **Content Catalog**

- About locations of sellers in Singapore
  #locations
  1 Responses / 0 Context Set / Does not return
- About Prices of durians
  #Prices
  1 Responses / 0 Context Set / Does not return
- Consult the Durian Master
  #Consultation
  1 Responses / 0 Context Set / Does not return
- #General_Ending
  1 Responses / 1 Context Set / 1 Slots / Does not return
- Anything else
  anything_else
  1 Responses / 0 Context Set / Does not return

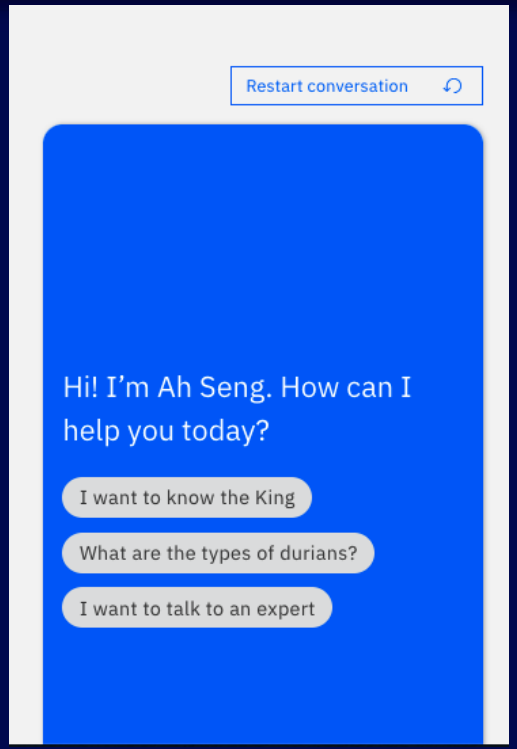
WEBCHAT Integration



Desktop launcher



Mobile launcher



Home screen

ANALYTICS

Data Source

Engaging the customer

Refresh data

Last updated: 1:16 AM

Past 30 days | 16 Jun 22 to 16 Jul 22 | by | day | Filter

Intents

Entities

Total conversations

40

Avg. msg. per conversation

9.1

Max. conversations

11

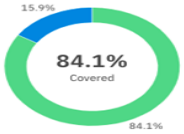
07/15/2022

Weak understanding

12 msg.

View logs

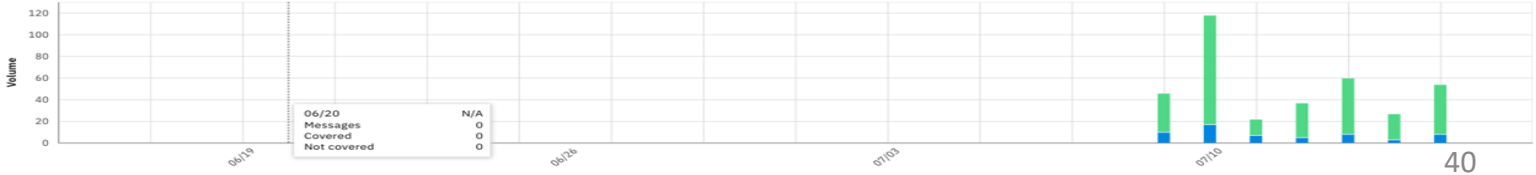
Coverage



Total messages	364
Total covered messages	306
Total not covered messages	58

Coverage trend

Coverage volume



Most Valuable feedback - Persona

Ah Seng was quickly trained to understand

"Liulian" , "Liu Lian" or "Lew Lian"

Integration for Deployment

Github

Heroku

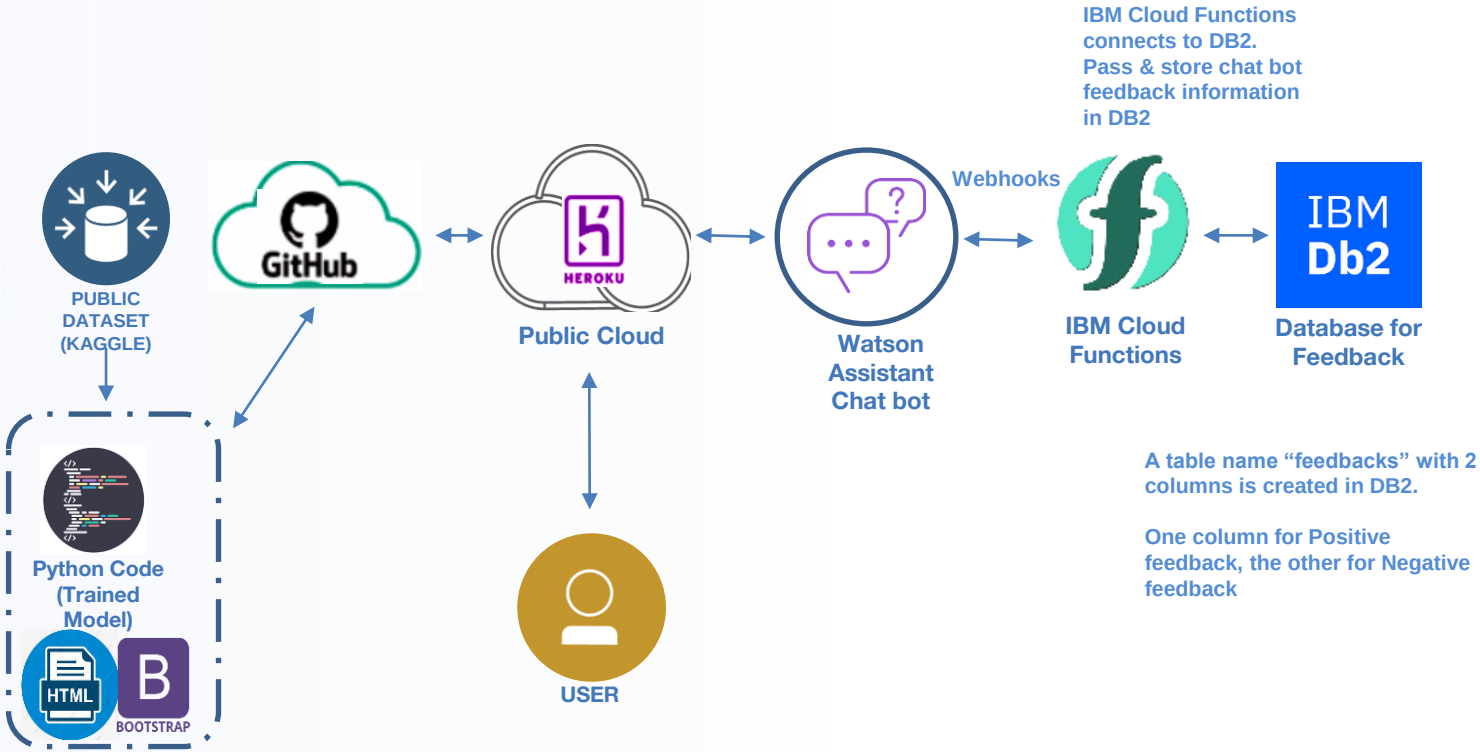
Bootstrap

Watson Assistant

IBM DB2

IBM Cloud Functions

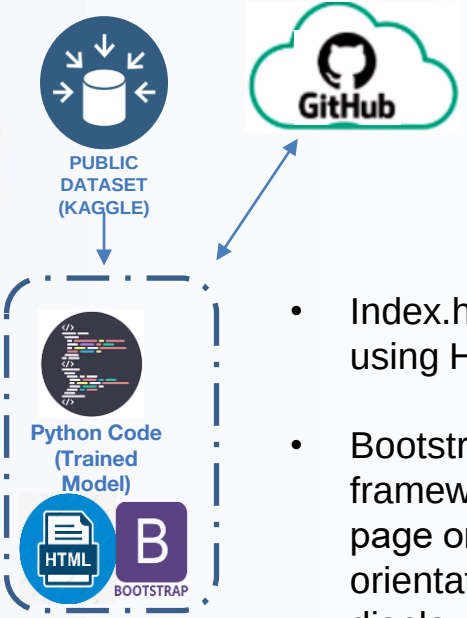
Overview Integration & Deployment Architecture



A table name “feedbacks” with 2 columns is created in DB2.

One column for Positive feedback, the other for Negative feedback

Integration & Deployment (HTML, Bootstrap & GitHub)

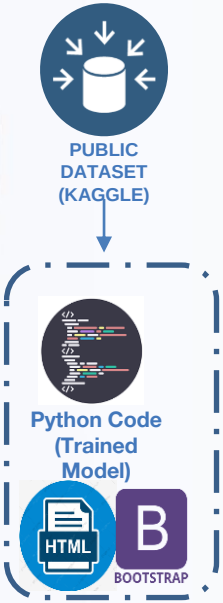


- GitHub – is a code hosting platform in cloud for version control and collaboration

- Index.html – default homepage of website using HTML 5

- Bootstrap 5 – HTML, CSS, JavaScript framework for creating responsive web page or app to detect visitor's screen size, orientation and automatically adapt the display accordingly

Integration & Deployment (HTML, Bootstrap & Python app)



app.py

120 lines (110 sloc) | 5.9 KB

```python
import os
from flask import Flask, request, redirect, url_for, render_template
from werkzeug.utils import secure_filename

app = Flask(__name__)
import tensorflow as tf
from tensorflow import keras
from keras.models import load_model
from keras.backend import set_session
from skimage.transform import resize
import matplotlib.pyplot as plt
import numpy as np
from PIL import ImageOps, Image

print("Loading model")
#global sess
#sess = tf.compat.v1.Session()
#set_session(sess)
```

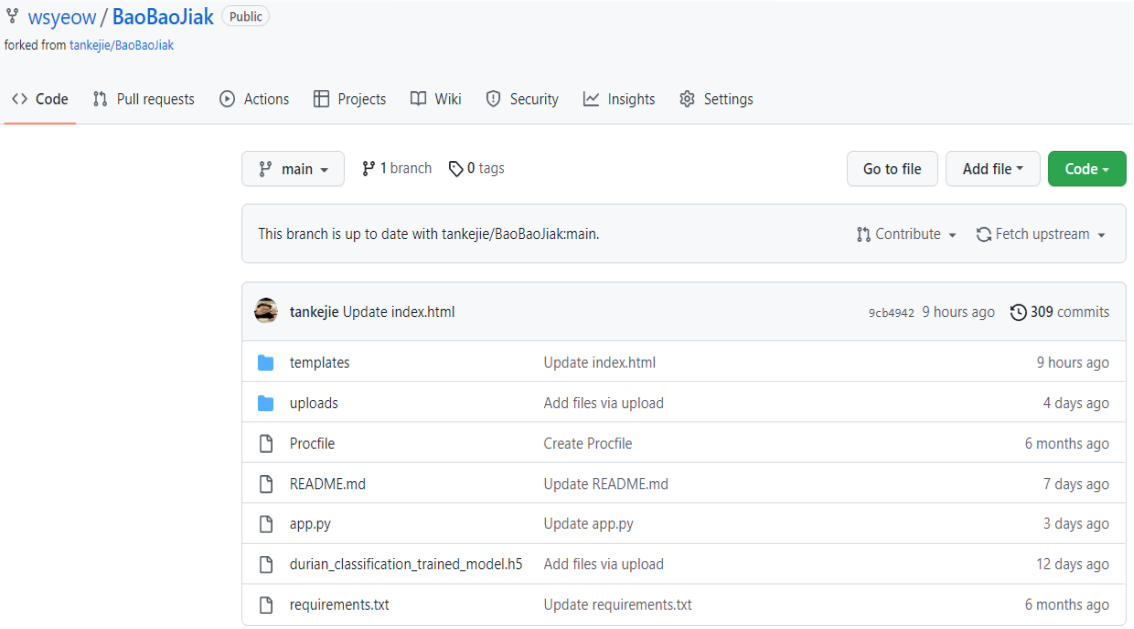
Index.html

255 lines (255 sloc) | 14.7 KB

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.0-beta1/dist/css/bootstrap.min.css" rel="stylesheet"
        integrity="sha384-0evHe/X+R7YkIZDRvuzKMRqM+OrBnVFBL6DOitfPri4tjfHxaWutUpFmBp4vmVor" crossorigin="anonymous">
    <link rel="stylesheet" href="style.css">
    <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap-icons@1.3.0/font/bootstrap-icons.css">
    <title>BAO BAO JIAK!</title>
</head>
<body>
    <!-- Navbar -->
    <nav class="navbar navbar-expand-md bg-dark navbar-dark py-3 fixed-top">
        <div class="container">
            <a href="#" class="navbar-brand">BAO BAO JIAK!</a>
            <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-target="#navmenu">
                <span class="navbar-toggler-icon"></span>
            </button>
            <div class="collapse navbar-collapse" id="navmenu">
                <ul class="navbar-nav ms-auto">
                    <li class="nav-item">
                        <a href="#classification" class="nav-link">Know Your Durian King</a>
                    </li>
                    <li class="nav-item">
                        <a href="#about" class="nav-link">About</a>
                    </li>
                    <li class="nav-item">
                        <a href="#team" class="nav-link">Our Awesome Team</a>
                    </li>
                    <li class="nav-item">
                        <a href="#contact" class="nav-link">Contact Us</a>
```

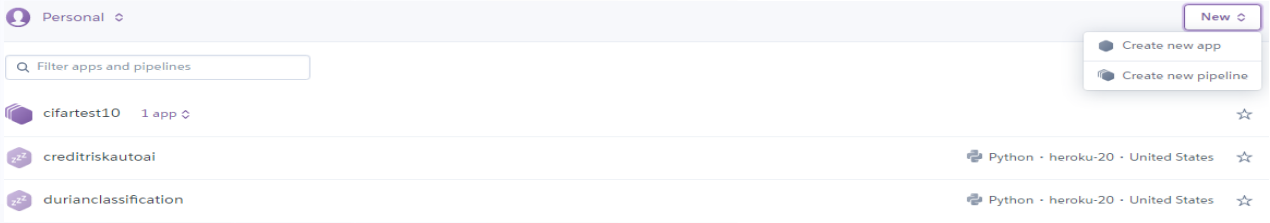
Integration & Deployment (GitHub)

We used GitHub to host all our python code, trained model and html source code (index.html) for version control and collaboration

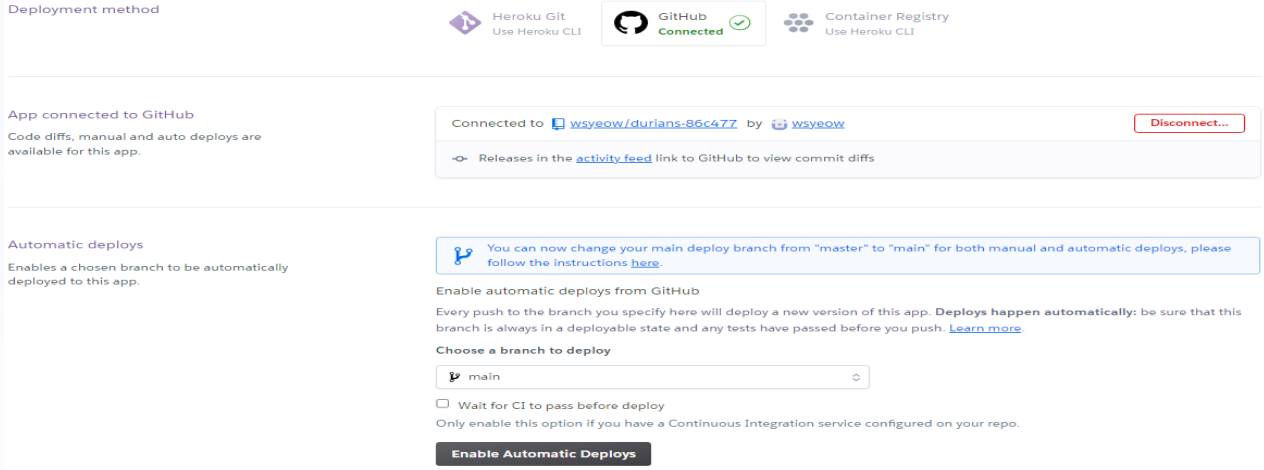


Deployment of trained model on Heroku

1. Login to Heroku, create a new app on Heroku



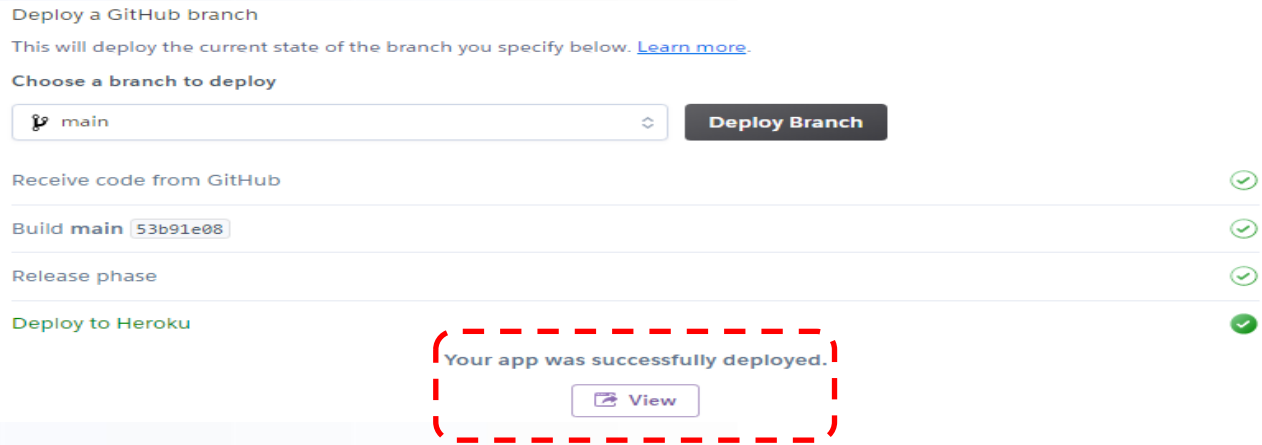
2. Deploy method using Github.com, connect to our Github repository



Deployment on Heroku

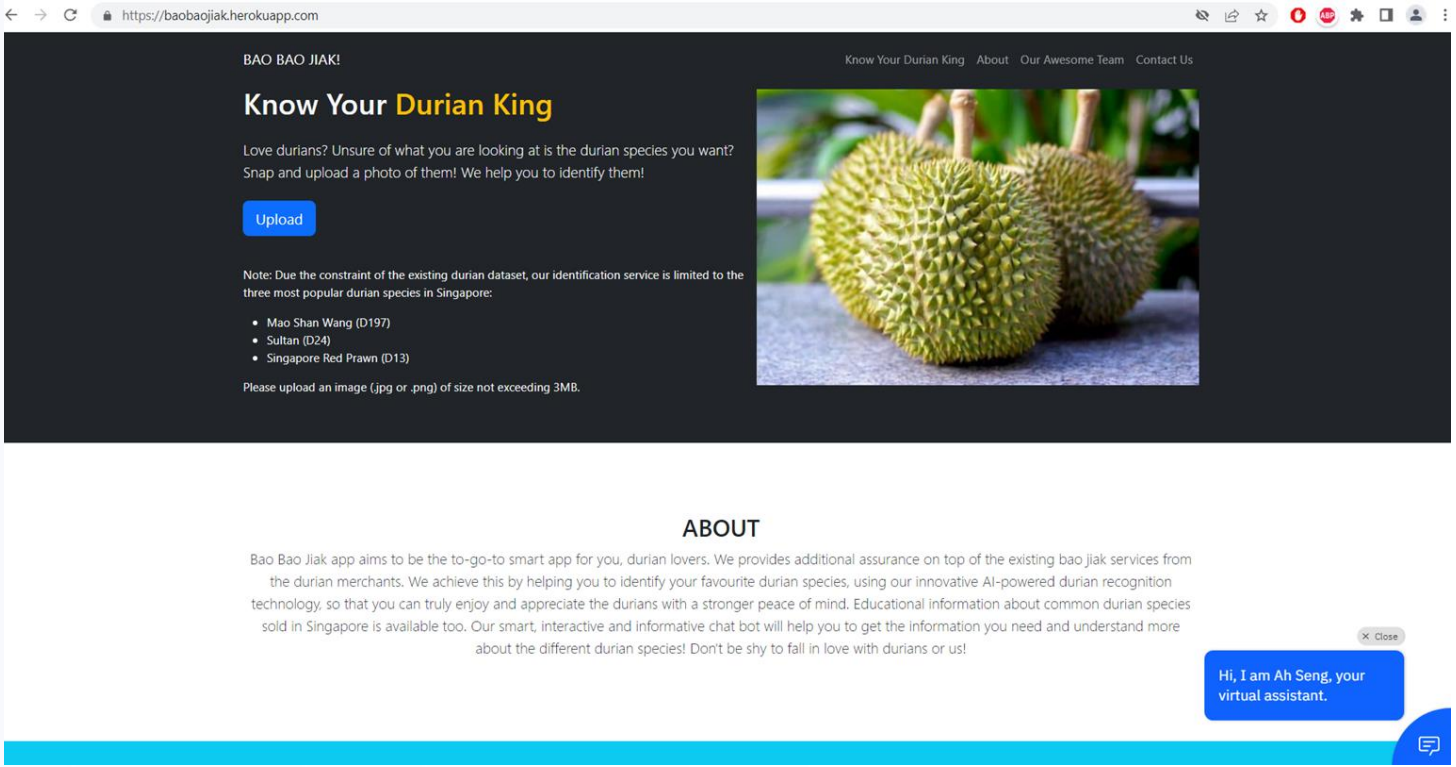
3. Choose manual deploy, Heroku will run python and load all required libraries

4. Upon app was successfully deployed, click on view



Deployment on Heroku

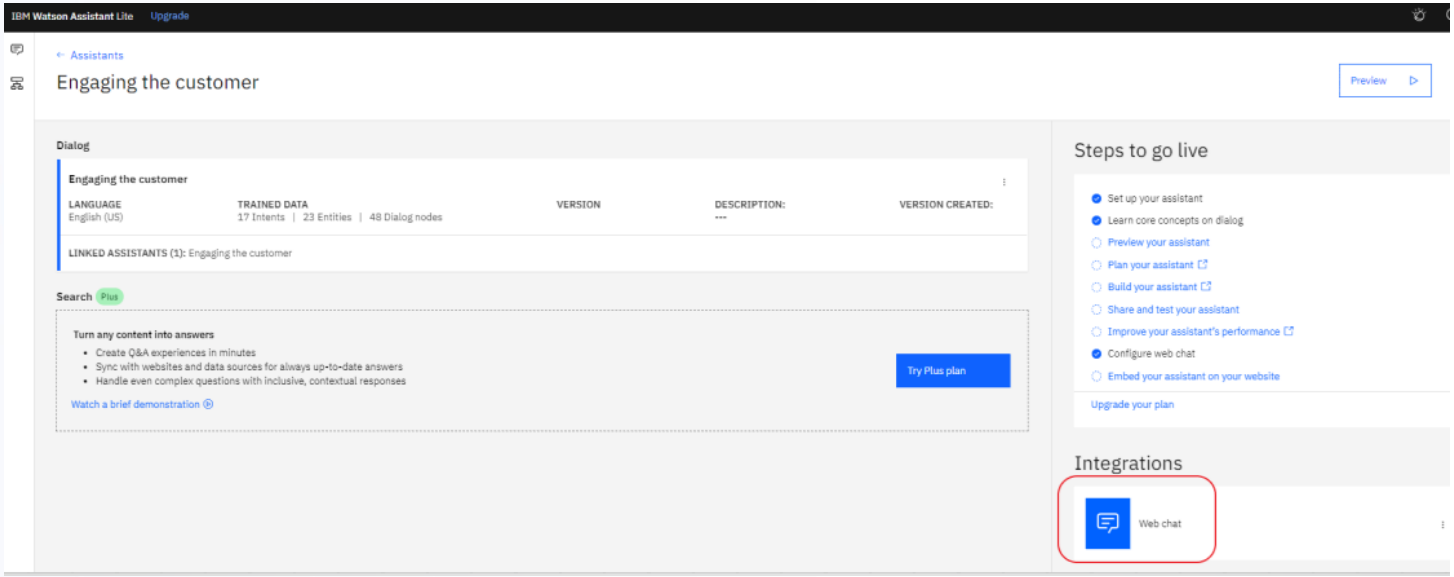
5. Browser open https://baobaojiak.herokuapp.com/



Integration & Deployment –

Watson Assistant Chat bot to Heroku

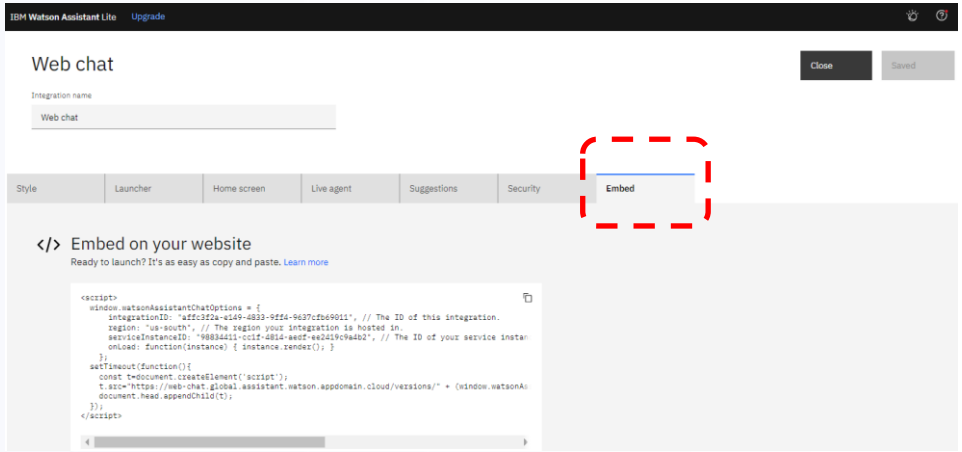
1. Login to IBM Cloud (Watson Assistant) – select Integrations Web Chat



Integration & Deployment – Watson Assistant Chat bot to Heroku

2. Enter Integration Name, Click on Create

3. Click on Embed, copy script



Integration & Deployment

Embed Chat bot to Heroku website

4. Login to Github – paste the copied script on index.html file
5. Redeploy Github code on Heroku

https://github.com/wsyeow/BaoBaoJiak/blob/main/templates/index.html

```
    <section id="contact" class="text-center text-sm-start p-5">
        <div class="container">
            <div class="row justify-content-center text-center g-4">
                <div class="col-md">
                    <h2 class="text-sm-center mb-4 text-dark text-uppercase">Contact Us</h2>
                    <ul class="list-group list-group-flush lead">
                        <li class="list-group-item">
                            <span class="fw-bold">Main Location:</span> Singapore
                            </span>
                        </li>
                        <li class="list-group-item">
                            <span class="fw-bold">Phone:</span> (+65) 6363 6363
                            </span>
                        </li>
                        <li class="list-group-item">
                            <span class="fw-bold">Email:</span> eatdurianswithus@baobaojiak.com
                            </span>
                        </li>
                    </ul>
                </div>
            </div>
        </div>
        </div>
    </section>
    <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.0-beta1/dist/js/bootstrap.bundle.min.js"
        integrity="sha384-ppcn3073KE6tl6bjs2QrFaJGz5/SUsLqktiwsUTF55Jfv3qYSDhgCecCxMW52nD2"
        crossorigin="anonymous"></script>
    <script>
        window.watsonAssistantChatOptions = {
            integrationID: "1774ef45-3ec5-46e5-9f9d-92960c8af812", // The ID of this integration.
            region: "us-south", // The region your integration is hosted in.
            serviceInstanceID: "40a11d1b-c890-4ccd-960b-8b41485151bf", // The ID of your service instance.
            onload: function (instance) { instance.render(); }
        };
        setTimeout(function () {
            const t = document.createElement('script');
            t.src = "https://web-chat.global.assistant.watson.appdomain.cloud/versions/" + (window.watsonAssistantChatOptions.clientVersion || 'latest') + "/WatsonAssistantCha
            document.head.appendChild(t);
        });
    </script>
</body>
</html>
```

Integration & Deployment

Chatbot-Webhooks-Functions-DB2

Watson Assistant Chat bot

- Add new entity "@feedback
- On Dialog, configure Webhooks call

Webhooks

- Retrieve IBM DB2 public URL
- Configure webhooks to call IBM Cloud Functions

IBM Cloud Functions

- Create IBM Cloud Functions to connects to DB2.
- Send & store chat bot rating and feedback information in DB2

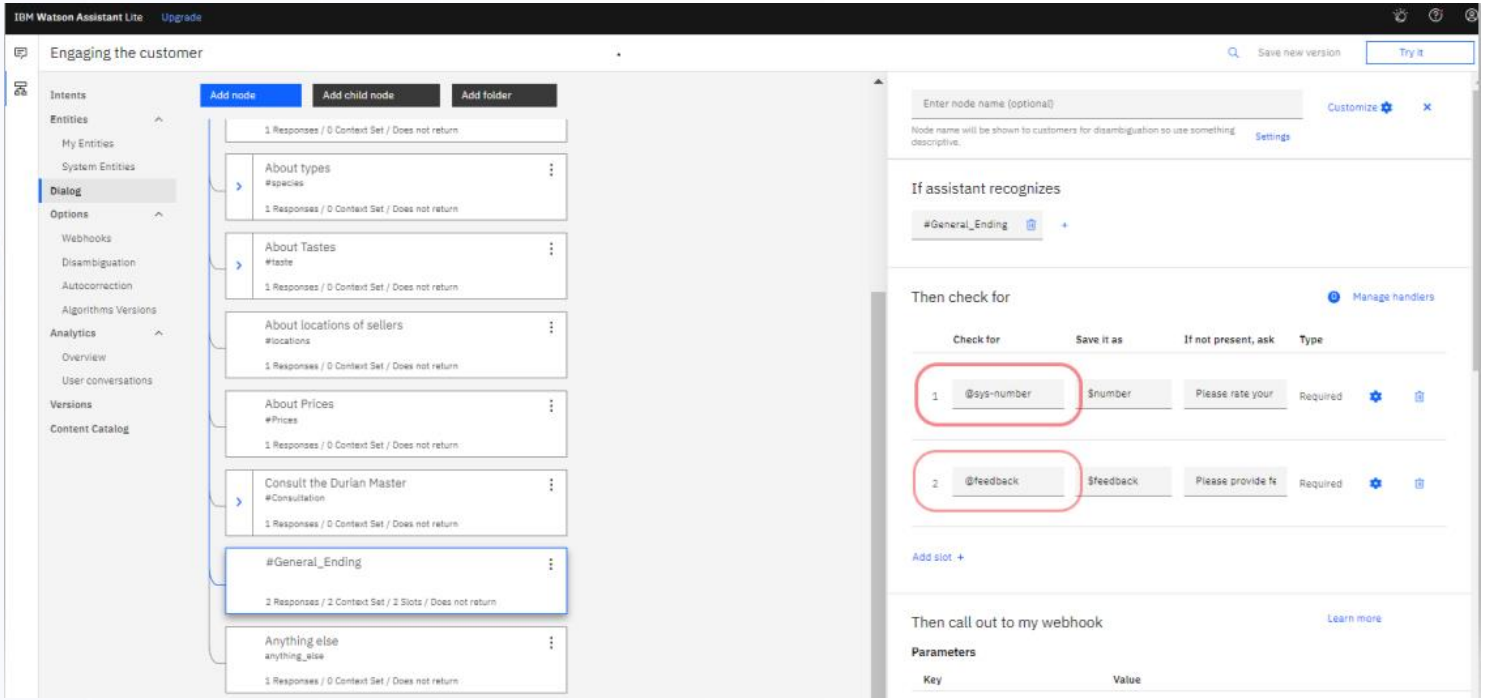
Database for Feedback

- On Db2, our table name "feedbacks" and structure of our database with 2 columns is created in DB2.
- One column for Positive feedback, the other for Negative feedback

Integration & Deployment

Chat bot – create entities & configure dialog node & call webhooks

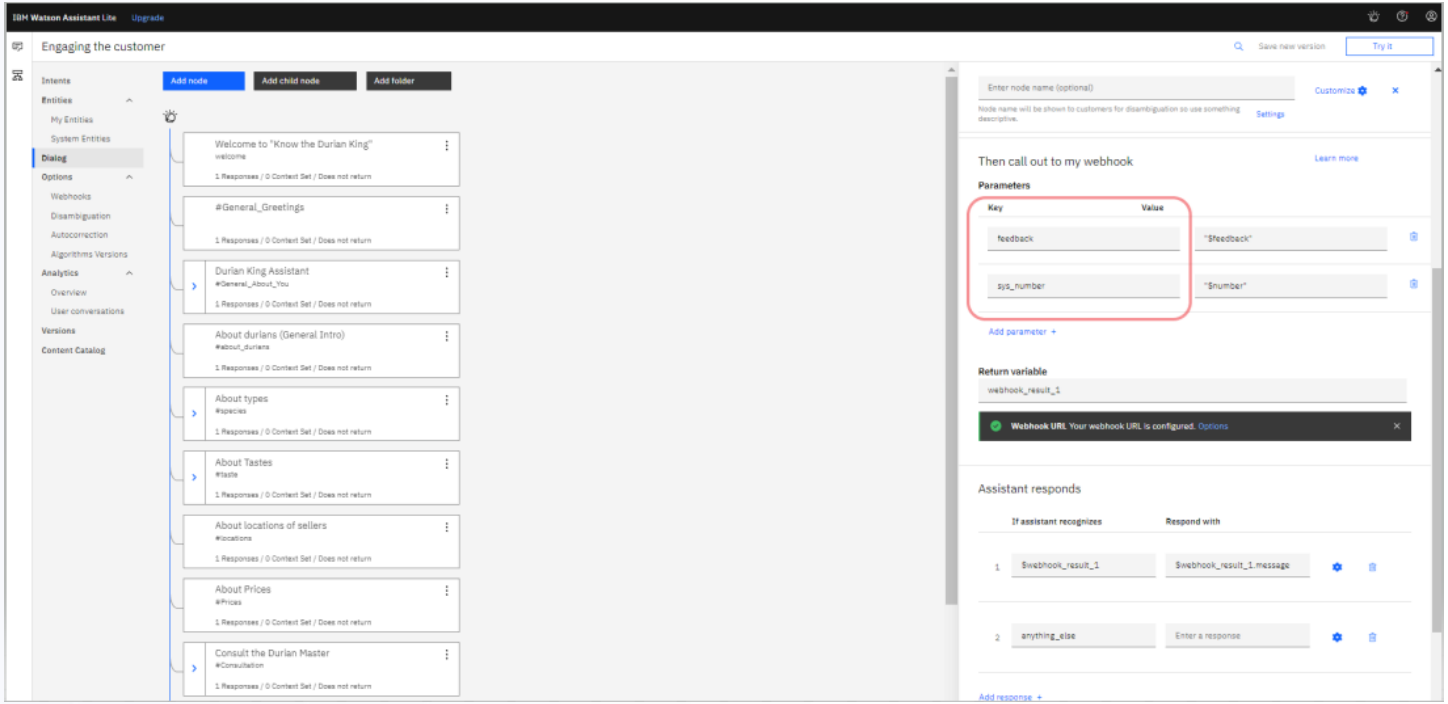
1. On IBM Watson, “#General_Ending” Node
2. Assign @sys-number for user rating
3. Assign @feedback for user comment



Integration & Deployment (cont'd)

Chat bot – create intent & add dialog node & call webhooks

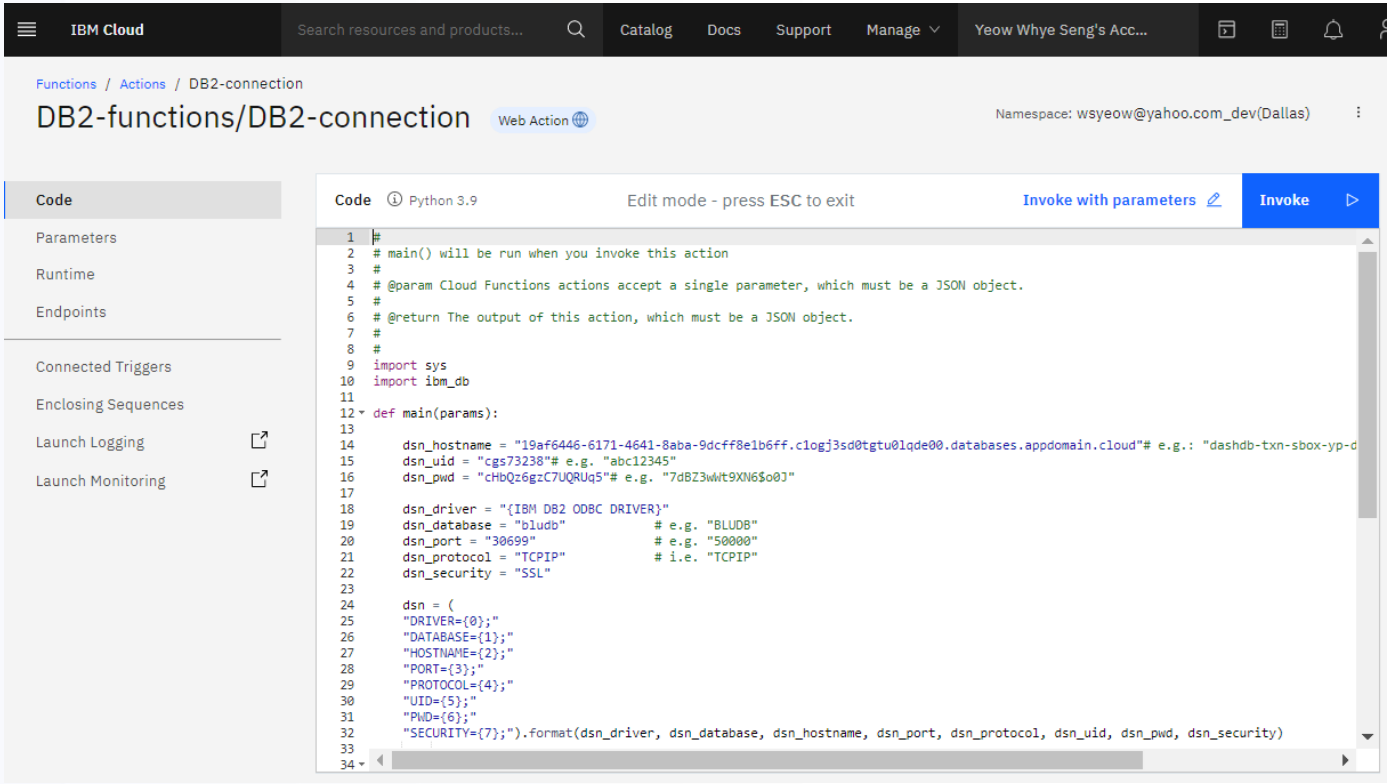
1. When call out to webhook, "sys_number" containing user rating and "feedback" with user comments will pass to IBM function in Python.
2. IBM Functions will connect to DB2 & insert user rating and comments into DB2 table "feedback_rating"



Integration & Deployment

IBM Cloud Functions

1. We first develop & test our cloud functions on VS Code, upon successful execution of code with no error.
2. We deployed the IBM Cloud function by cut & paste Python Function code on IBM Cloud Functions& save code



Integration & Deployment

IBM Cloud Functions deployment

2. select “Endpoints & copy DB2 public URL

IBM Cloud | Search resources and products... | Catalog | Docs | Support | Manage | Yeow Whye Seng's Acc...

Functions / Actions / DB2-connection

DB2-functions/DB2-connection Web Action

Namespace: wsyeow@yahoo.com_dev(Dallas)

- Code
- Parameters
- Runtime
- **Endpoints**
- Connected Triggers
- Enclosing Sequences
- Launch Logging
- Launch Monitoring

Web Action

☑ Enable as Web Action — Allow your Cloud Functions actions to handle HTTP events. Web Actions allow to control the response data and type by using a set of URL extensions, such as .json or .html. Learn more about Web Actions.
Note: The Web Action URL below requires to return a dict object that contains a body property.

☐ Raw HTTP handling — When enabled your Action receives requests in plain text instead of a JSON body

HTTP Method	Auth	URL
ANY	Public	https://us-south.functions.appdomain.cloud/api/v1/web/ _dev/DB2-functions/DB2-connection

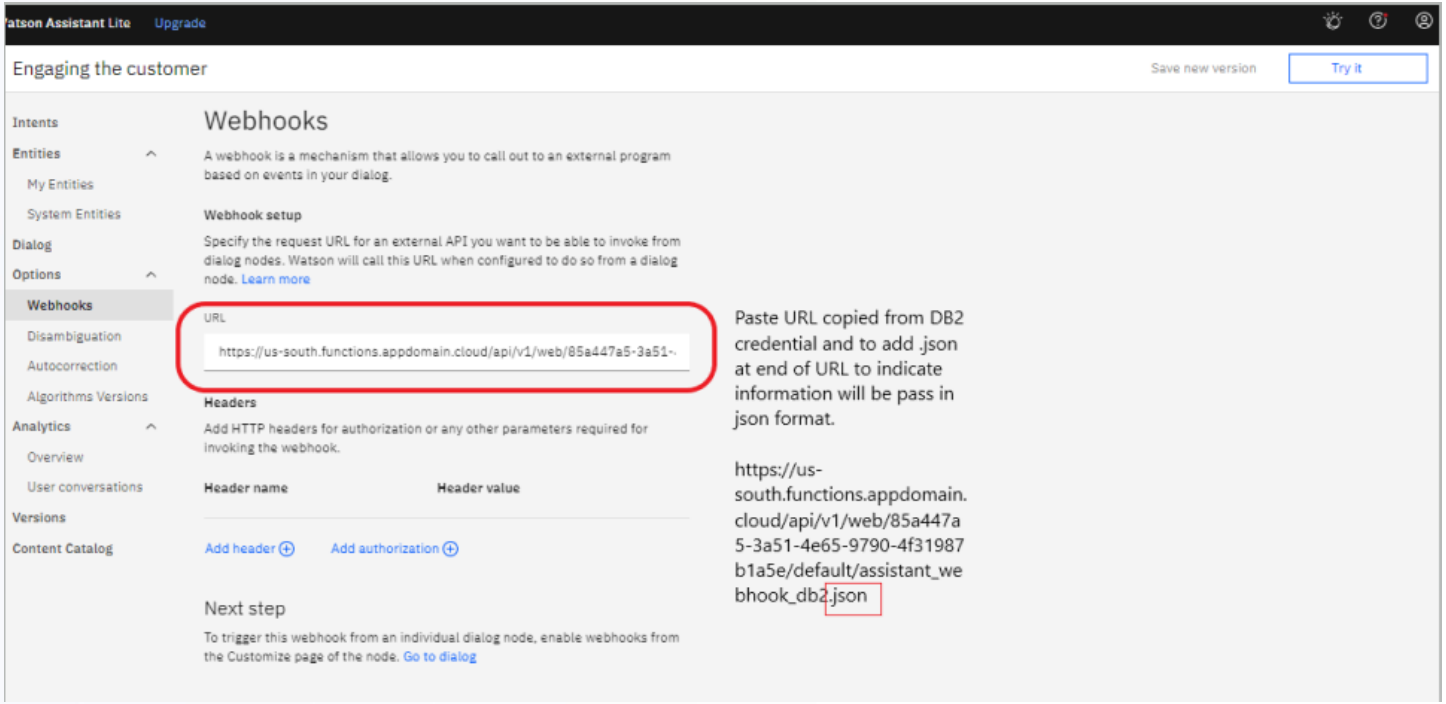
REST API

HTTP Method	Auth	URL

Integration & Deployment

Chat bot – configure DB2 URL on webhook

3. On Watson Assistant, select webhooks & paste copied DB2 public URL
4. Add ".json" to the end of paste URL



Paste URL copied from DB2 credential and to add .json at end of URL to indicate information will be pass in json format.

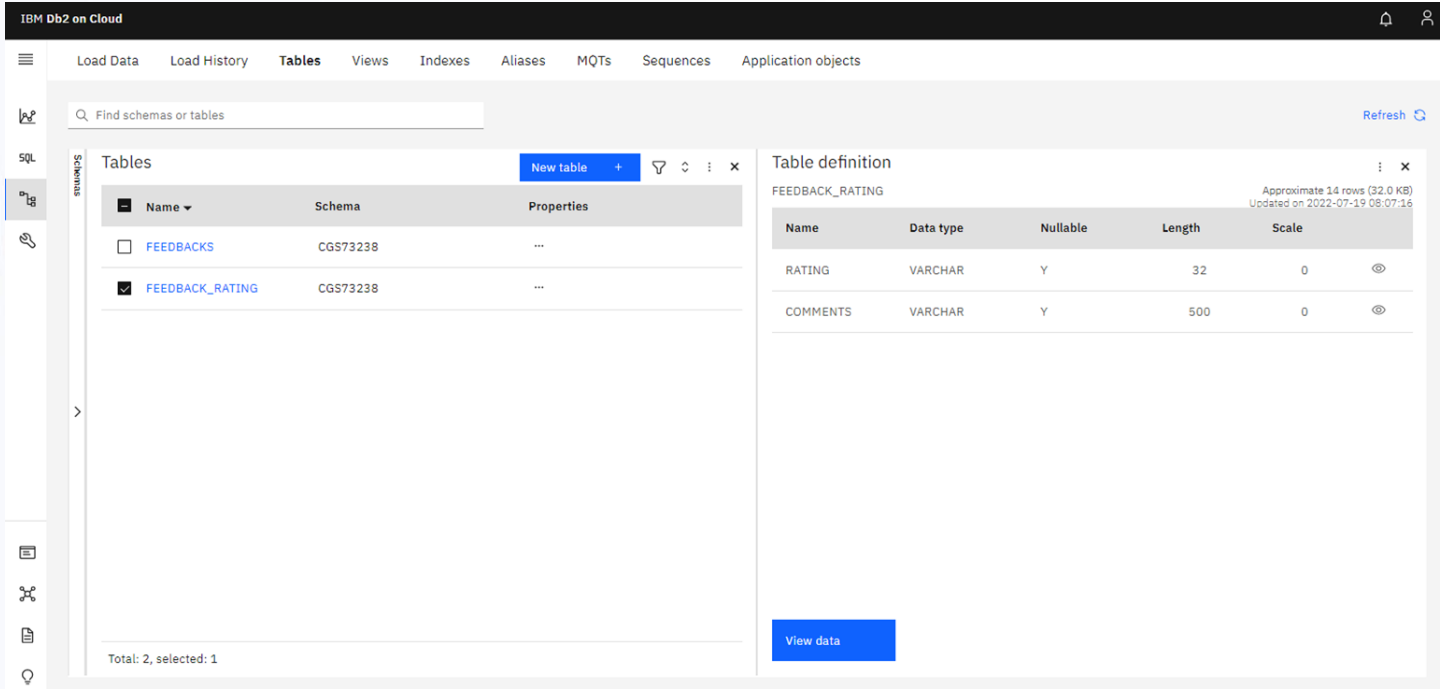
https://us-south.functions.appdomain.cloud/api/v1/web/85a447a5-3a51-4e65-9790-4f31987b1a5e/default/assistant_webhook_db2.json

Integration & Deployment

IBM Db2

Our DB2 tables

- Table name “feedback_rating” with 2 columns.
- One column for Rating, the other for Comments

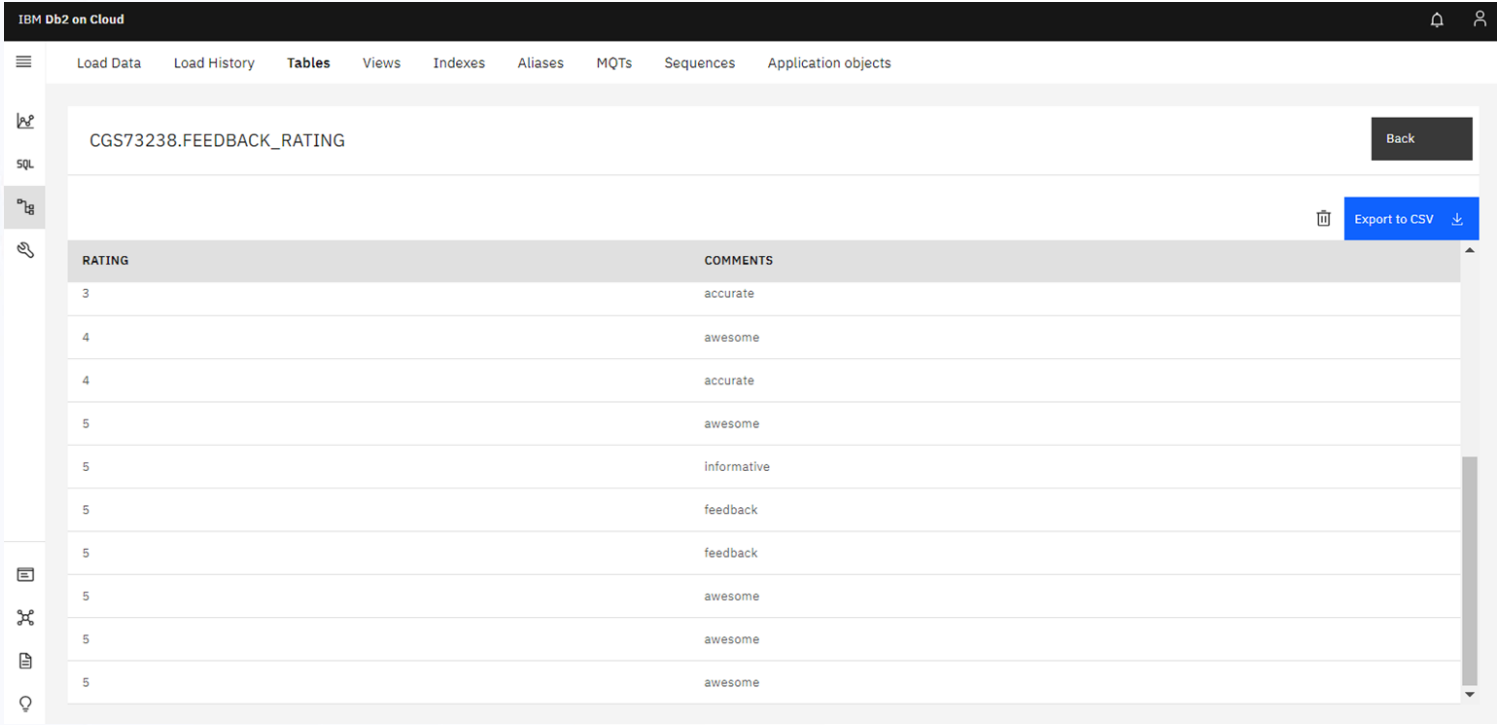


Integration & Deployment

IBM Db2

Data stored in our DB2 tables

- Table name “feedback_rating” with 2 columns.
- One column for Rating, the other for Comments



RATING	COMMENTS
3	accurate
4	awesome
4	accurate
5	awesome
5	informative
5	feedback
5	feedback
5	awesome
5	awesome
5	awesome

Project Planning & Live Demo

AI Model and Watson Assistant

Project Planning & Timeline

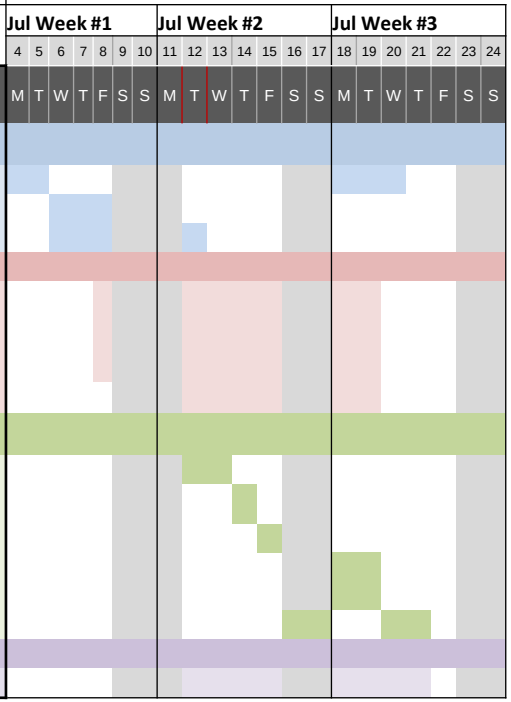
AI Practitioners Project - Durian Classification

Team 2

Desmond Fong Yew Mun **- Des**
Henry Lim Chin Thian **- Henry**
Kelvin Soh Kwang Weng **- KS**
Tan Ke Jie **- KJ**
Yeow Whye Seng **- WS**

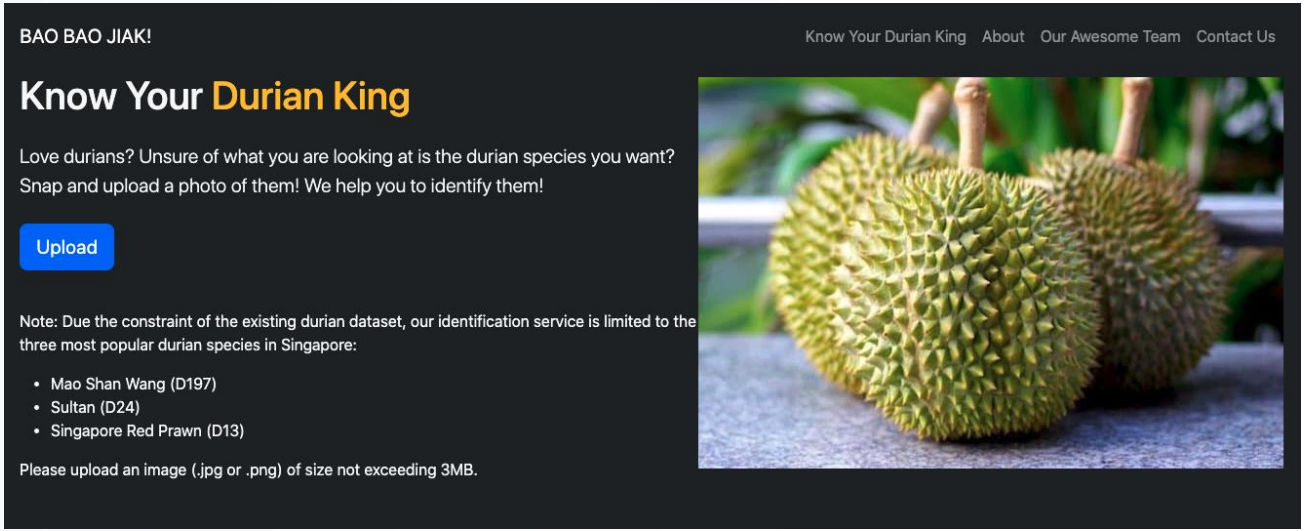
Project Start:	**Mon, 7/4/2022**
Project End:	**Thu, 7/21/2022**
Display Week:	**3**

TASK	ASSIGNED TO	PROGRESS	START	END
Phase 1 - Project Planning & Data Collection				
Initiation, Scoping, Acquisition	All	100%	7/4/2022	7/20/22
Data Cleaning & Exploration	WS, KJ	100%	7/6/2022	7/8/2022
Field Discovery	All	100%	7/12/2022	7/12/2022
Phase 2 - Design & Model Training				
Web Development	KJ, Des	100%	7/8/2022	7/19/22
AI model development (Training and Testing)	KJ, WS	100%	7/8/2022	7/19/22
Chatbot development	Henry	100%	7/8/2022	7/19/22
Applications Integrations	KJ, WS, KS	100%	7/12/2022	7/19/22
Phase 3 - Deployment, Testing & Maintenance				
Deploy Trained Model on website	All	100%	7/13/22	7/13/22
Midpoint Project Discussion with Suhaimi	All	100%	7/14/22	7/14/22
Re-train model, test locally	All	100%	7/15/22	7/15/22
Re-deploy trained model on website	All	100%	7/18/22	7/19/22
Trained model testing on website	All	100%	7/18/22	7/20/22
Field Test	All	100%	7/16/22	7/21/22
Phase 4 - Project Presentation				
Project presentation preparation	All		7/12/2022	7/21/22



Live Demo Online

<https://baobaojiak.herokuapp.com/>



Project Learnings

Constraints & Challenges

1) Data of different durians' varieties need to be arranged, categories to know the number of counts;
2) We were constrained by the dataset and the 25MB limit upload to GitHub.
3) Efforts of connecting the chatbot's feedback to DB2 thru Cloud Functions has not been successful
4) Training negative images to allow our model Deep Learning to respond to **non-durian** pictures e.g. *cats and dogs*. However, we are limited by the amounts of images that our model needs to learn.

Key Takeaway

1) It is important to identify a Domain Expert within a team as he behaves similarly like an expert consultant for the project to run smoothly.
2) Each and every team members are important, contributing to the successful completion of the project in every aspect.
3) The Technical knowledge of this project is very crucial as it requires years of experiences to work on the coding processes.

Appendix – test cases & Credits

Test negative samples

Conclusion

1. Business case development motivated by real case AI needs

2. Deep learning needs Pythonista's passion & perseverance to get the outcome

3. Conversational chatbot is improved with Users' feedback early

4. Flexibility to work within constraints to integrate and deploy

5. Project planning - encourage loops - should include fun!

Enjoy it while you can. Thank you!

The ochee durians that won the 'King of Kings' title at World Durian Championship 2022: Malaysia Edition. (Photo courtesy of Lee Kean Liang)

Breaking news!

Black Thorn (Ochee) is crowned champion in the World Durian Championship 2022: Malaysia edition (CNA, 16 July 2022)