iPhone Assignment Group Effort Form

Group Number:

Score range (10-7)	The group member made rigorous and regular contributions
Score (7-5)	The group member was mostly present and contributing, with minor lapses
Score (5-3)	The group member was average in terms of contribution, disappeared from time to time
Score (3-0)	This group member made minimal contribution and was disengaged for most of the project.

with a final score for each of the group members in the team. The values should reflect the relative percentage of contribution.

The scoring should be done by group consensus and should be updated weekly through the period of the assessment. If any student is rating low then the group should put in a plan for the student increase their contribution.

Group Member (Name | Student Number)	Score #
Student 1: Syed Sabih Ali | s3528350	10
Student 2: Omar Adnan | s3721552	10
Student 3: Ty T. Chau | s366849	5

2nd – Discuss this amongst yourselves and rate the efficiency of your group dynamics. Enter a score from 1 to 4.

1 = awful; 2 = average; 3 = most of the times; 4 = always

Group dynamics	Score #
We were in complete sync with each other.	3
We communicated on a regular basis.	3
We had positive disagreements.	3
We were very productive in terms of outcomes.	4
We took initiative.	4

iPhone Software Engineering

Assignment 1 - Report

Application Name: PokenDex

GitHub URL: https://github.com/rmit-S2-2020-iPhone/a1-s3528350_s3721552_s3668469

Group Members:
- Syed Sabih Ali - s3528350
- Omar Adnan - s3721552
- Ty Ty Chau - s3668469

Date: 03/09/2020

Agreed Final Contribution

Student Group	**Percent Contributed**
Syed Sabih Ali - s3528350	49.95 %
Omar Adnan - s3721552	33.3 %
Ty Ty Chau - s3668469	16.65 %
Total	*100 %*

Table of Contents

App Statement

Introduction:

Pokedex is a device in the Pokemon series that lets the people identify a Pokemon and look through its information. Similarly in the real world there are apps related to this aspect of Pokemon which shows all Pokemon and their information. Our app is called PokenDex which will be used to simulate a real Pokedex like in the series.

Slogan: If you want to catch'em all, you gotta know'em all.

Main Purpose: PokenDex is an app that provides the user to look up and identify any type of Pokemon.

Selling Points:

PokenDex is made to simulate how a real life Pokedex feels like:

- Search through all the available Pokemon and know useful information about them that will help you in games and in general.
- Identify any Pokemon image, toy or card with the help of Artificial Intelligence (AI).
- Make a personalised list of your own favourite Pokemon and have them stored on your phone.

Use Case:

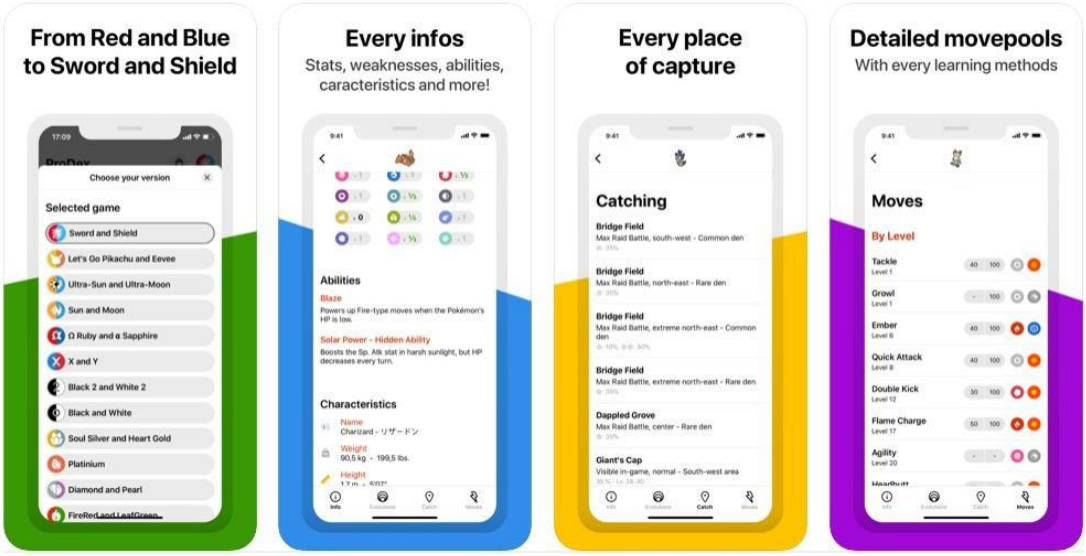
Have you seen a Pokemon toy or card or an image, but was unable to identify it? What's its name? What type is it? How good is it in battle? Well with the help of our app you can identify that Pokemon and our app will automatically show it's latest information. Or if you are playing a Pokemon game and want to look up a Pokemon to know what stats it has, then you can use our app to help yourself and familiarise yourself with that Pokemon.

Keywords: Pokemon, Pokedex, PokenDex, Search, Pikachu

Researched Apps

1. ProDex

App URL: https://apps.apple.com/au/app/prodex-gen-1-to-8/id1485409731

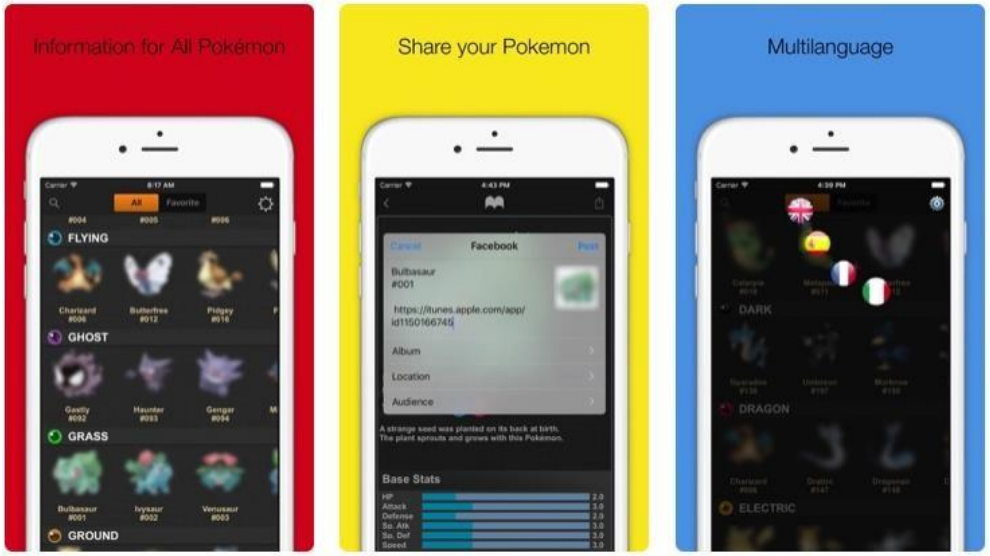


Summary:

- It has information about everything related to Pokemon, including things that we don't have in our app and felt unnecessary to add these things.
- ProDex has a simplistic and lite design that makes readability easy.
- The app has too many options and is really difficult to navigate due to many options.
- The apps UI is really good which influenced our design as well to use a lite white theme throughout our app.
- The app icon is minimalist and good looking which influenced us to make an icon of our own app.

2. PokePro

App URL: https://apps.apple.com/au/app/pokepro-pokedex-guide-for-pokemon/id1150166745

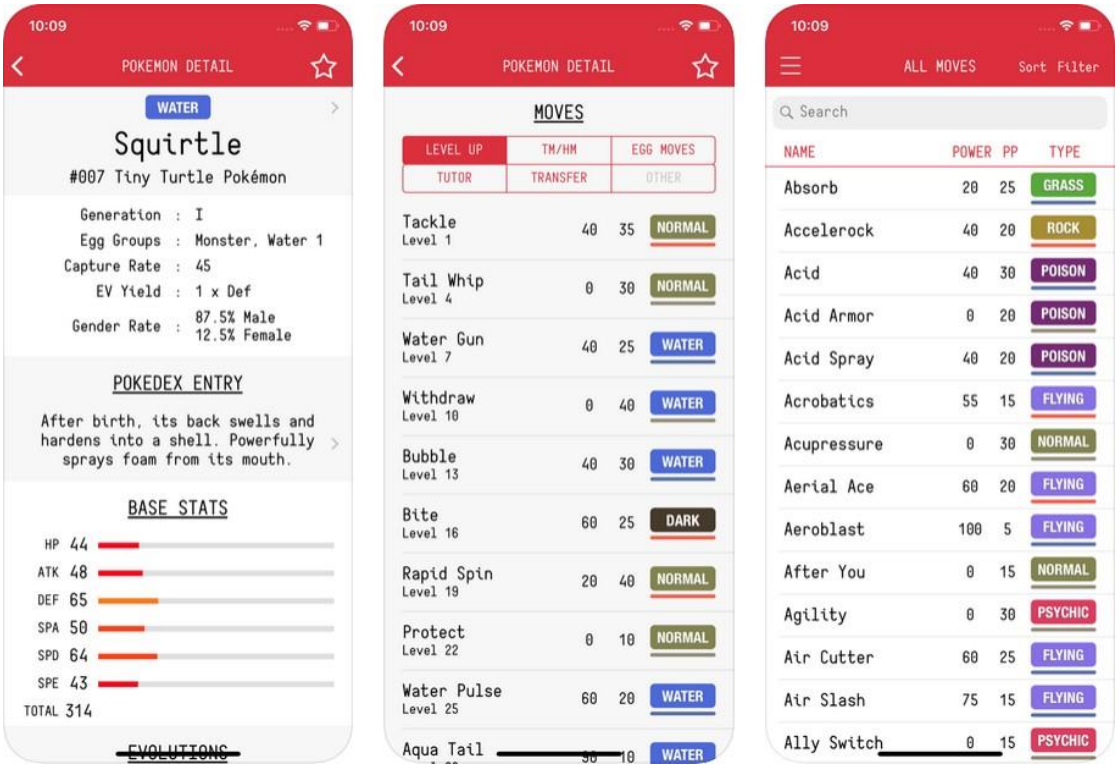


Summary:

- The app has a simple use case similar to our app i.e, information for only Pokemon.
- The collection display of Pokemon is not good looking and can easily confuse players. This app has displayed it's Pokemon according to it's type. Our app will display Pokemon according to proper ID and have coloured cells to indicate type. That is two things covered that this app fails to present.
- The option to share on social media is not necessary. The app should be for the user itself and not for others to see what Pokemon they like.

3. Déxter

App URL: https://apps.apple.com/au/app/d%C3%A9xter/id839232239

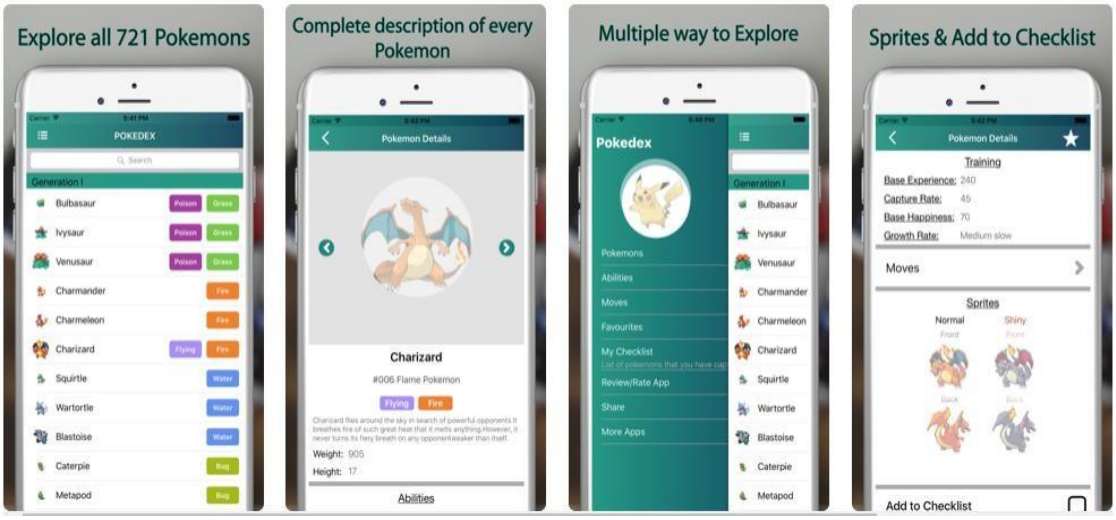


Summary:

- This app inspired us to make a “base stats” feature for our Pokemon detail view.
- The app’s Pokemon section is very nicely designed as our other sections for Pokemon moves and items but those are unnecessary in our app use case as we just want the user to be able to see basic information ofthe Pokemon.
- The UI/UX design is good for this app but the excessive information is not necessary and the app should try to keep the information basic just like we will do in our app.

4. A Dex for Pokedex

App URL: https://apps.apple.com/au/app/a-dex-for-pokedex-dexter-of-pok%C3%A9dex-for-pok%C3%A9mon/id1163167413



Summary:

- This app has a nice UI design however the UX design is not so great as it has multiple ways to search a Pokemon and that can confuse the user.
- The app has a nice table view display for all Pokemons and a nice master detail view.
- The app has a feature to favourite a Pokemon which influenced us to implement this type of feature in our app.

Selling points/features of our app:

- **Search/Identify Feature:**
  The main feature of our app is to show each Pokemon information, either by searching it or through the identify feature which uses AI to guess the Pokemon.

- **Favourite a Pokemon Feature:**
  Our app will be able to use the influence from researched apps and use the "add to favourites" feature which will help the user save their favourites and access the detail view through their favourites.

- **UI/UX Design:**
  Our app will have a collection view to display Pokemon by their respective "Pokedex ID" and each cell will be coloured according to the Pokemon type. Once the pokemon cell is selected a detail view will show which will have the same colour as the cell. For e.g: a grass type Pokemon will have a green cell and the detail view of this Pokemon will be green as well.

REST Based API

PokéAPI:

Our app is going to use PokeAPI which is a REST based API for everything related to Pokemon. It has all sorts of information from Pokemon to Pokemon items, berries, games history, contests etc. The API is broadly used by other developers and has good documentation and wrapper libraries for many programming languages.

URL: https://pokeapi.co/

Sample Response (Basic Info): The following is a GET response for Pokemon named "Bulbasaur" which retrieves its "name", "Pokemon ID" and its "type".

GET Request: https://pokeapi.co/api/v2/pokemon/bulbasaur


```
"forms": [
    {
      "name": "bulbasaur",
      "url": "https://pokeapi.co/api/v2/pokemon-form/1/"
    }
  ],
"height": 7,
  "held_items": [],
  "id": 1,
  "is_default": true,
"types": [
    {
      "slot": 1,
      "type": {
        "name": "grass",
        "url": "https://pokeapi.co/api/v2/type/12/"
      }
    },
    {
      "slot": 2,
      "type": {
        "name": "poison",
        "url": "https://pokeapi.co/api/v2/type/4/"
      }

  ]
```


Sample Response (Stats): The following is a GET response for Pokemon named "Bulbasaur" which shows everything related to it's "Stats".

GET Request: https://pokeapi.co/api/v2/pokemon/bulbasaur

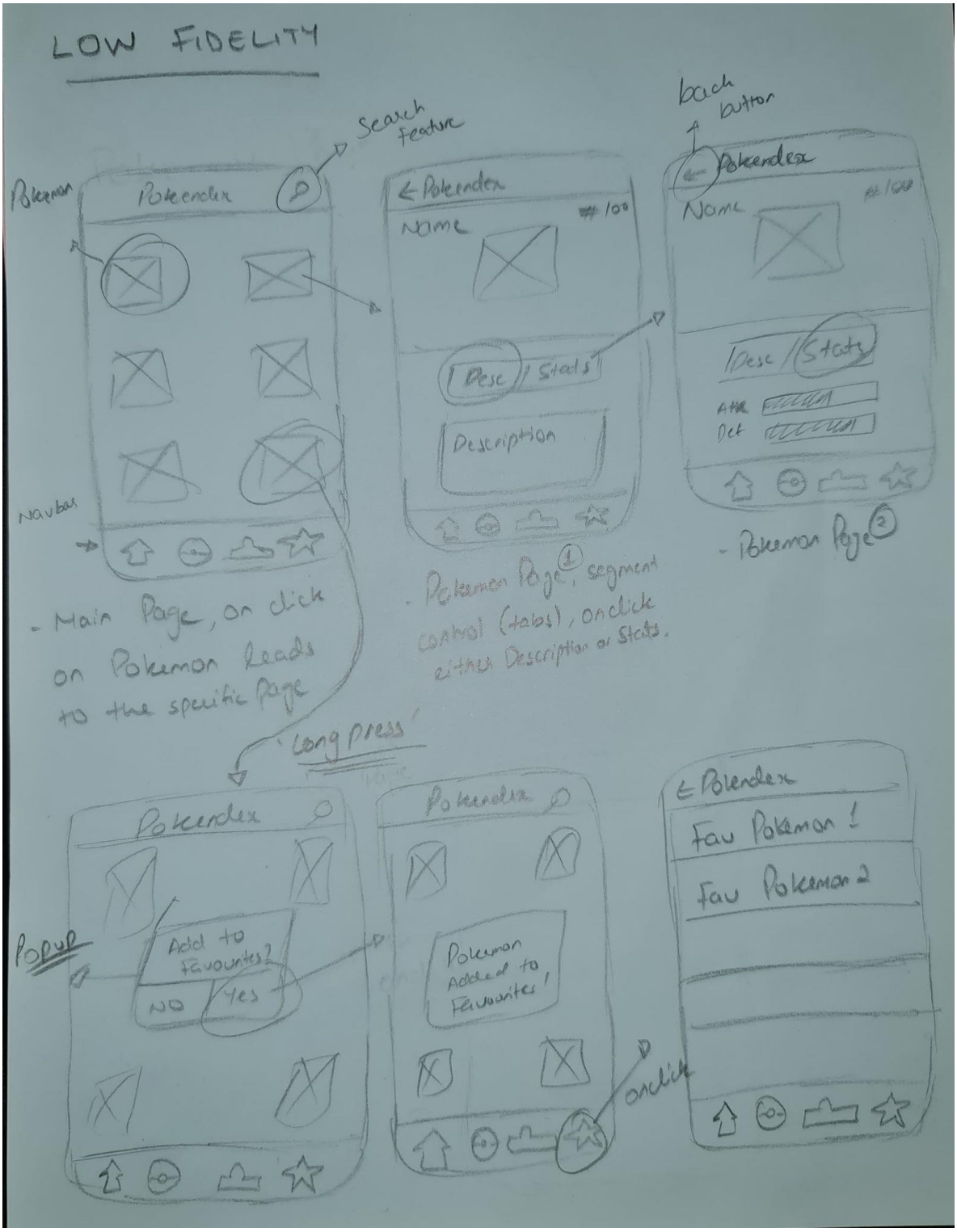

```
{
"stats": [
    {
      "base_stat": 45,
      "effort": 0,
      "stat": {
        "name": "hp",
        "url": "https://pokeapi.co/api/v2/stat/1/"
      }
    },
    {
      "base_stat": 49,
      "effort": 0,
      "stat": {
        "name": "attack",
        "url": "https://pokeapi.co/api/v2/stat/2/"
      }
    },
    {
      "base_stat": 49,
      "effort": 0,
      "stat": {
        "name": "defense",
        "url": "https://pokeapi.co/api/v2/stat/3/"
      }
    },
    {
      "base_stat": 65,
      "effort": 1,
      "stat": {
        "name": "special-attack",
        "url": "https://pokeapi.co/api/v2/stat/4/"
      }
    },
    {
      "base_stat": 65,
      "effort": 0,
      "stat": {
        "name": "special-defense",
        "url": "https://pokeapi.co/api/v2/stat/5/"
      }
    },
    {
      "base_stat": 45,
      "effort": 0,
      "stat": {
        "name": "speed",
        "url": "https://pokeapi.co/api/v2/stat/6/"
      }
    }
  ]
```

Sample Response (Description): The following is a GET response for Pokemon named "Bulbasaur" which retrieves its "description" from different games of Pokemon. We will be using a Pokemon game called "Ruby" for our Pokemon descriptions.

GET Request: https://pokeapi.co/api/v2/pokemon-species/1/


```
   {
      "flavor_text": "BULBASAUR can be seen napping in\nbright sunlight.\nThere is a
seed on its back.\fBy soaking up the sun's rays, the seed\ngrows progressively
larger.",
      "language": {
        "name": "en",
        "url": "https://pokeapi.co/api/v2/language/9/"
      },
      "version": {
        "name": "ruby",
        "url": "https://pokeapi.co/api/v2/version/7/"
      }
    }
```

Wireframes – Low Fidelity

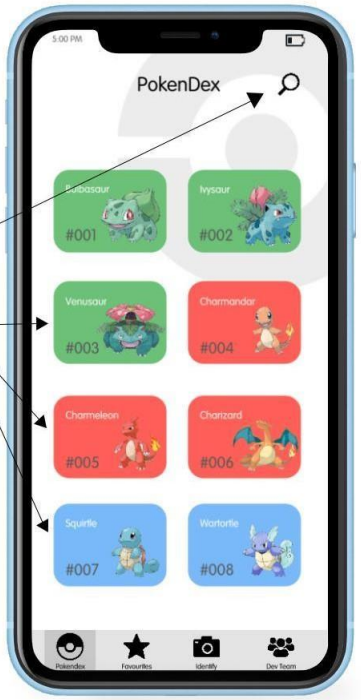


Wireframes - Medium Fidelity

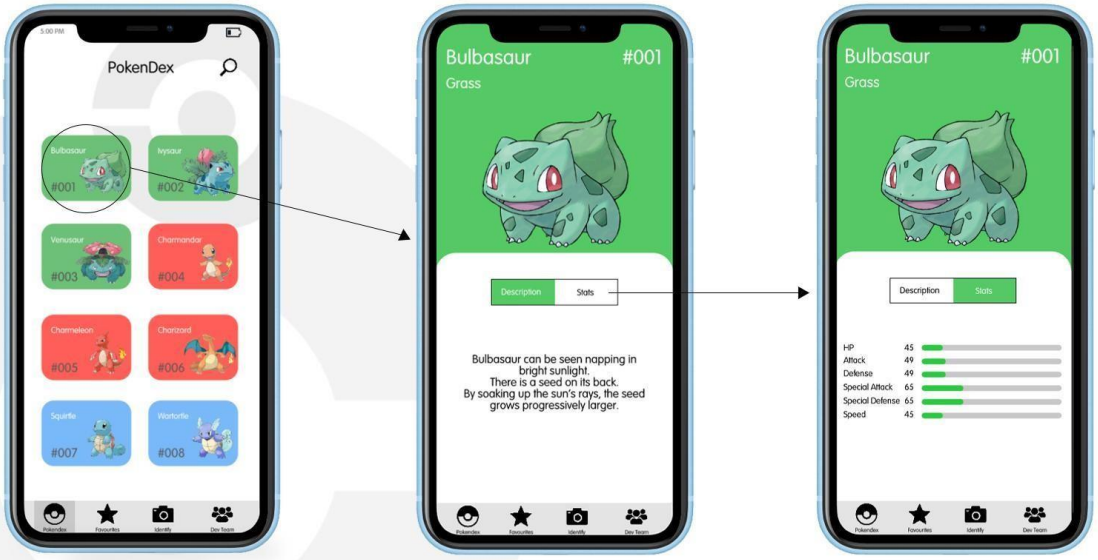
Note: All features presented in the wireframes have been successfully implemented into the prototype except for "Identify a Pokemon" feature which requires the use of Machine Learning and is out of our scope at the moment but will be implemented laterin Assignment 2

PokenDex Main View

- Has information of all 500+ Pokémon at your finger tips
- Search through all of them with the help of search feature
- Coloured cells makes finding the right type of Pokémon easy
- Light UI/UX design with each information displayed in adequate spacing for easy access to the specified information



Navigation Flow (Detail View)

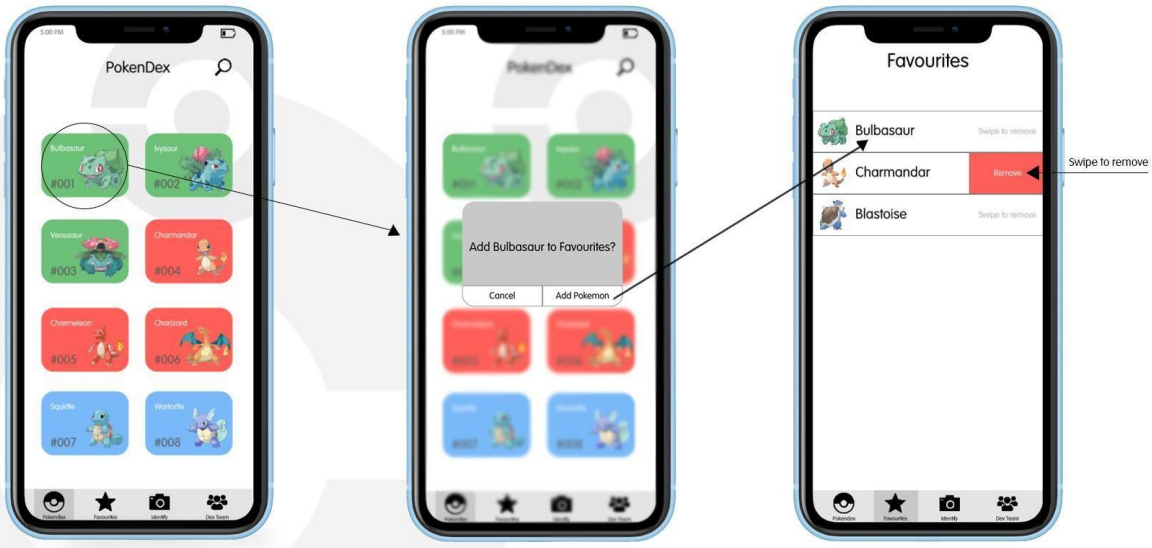


Main Collection View
On Click

Description Detail View

Stats Detail View

Navigation Flow (Favourites View)

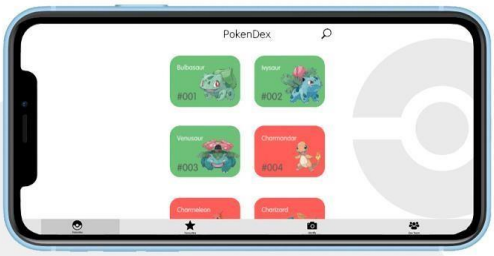


Main Collection View
On Long Press

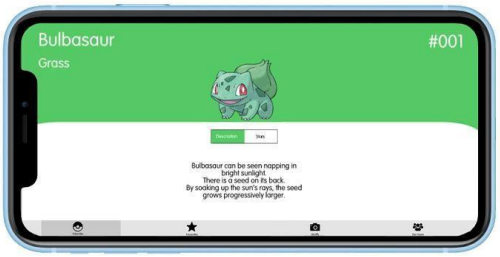
Popover with two actions

Favourites Table View

Landscape Orientation View



PokenDex Main View



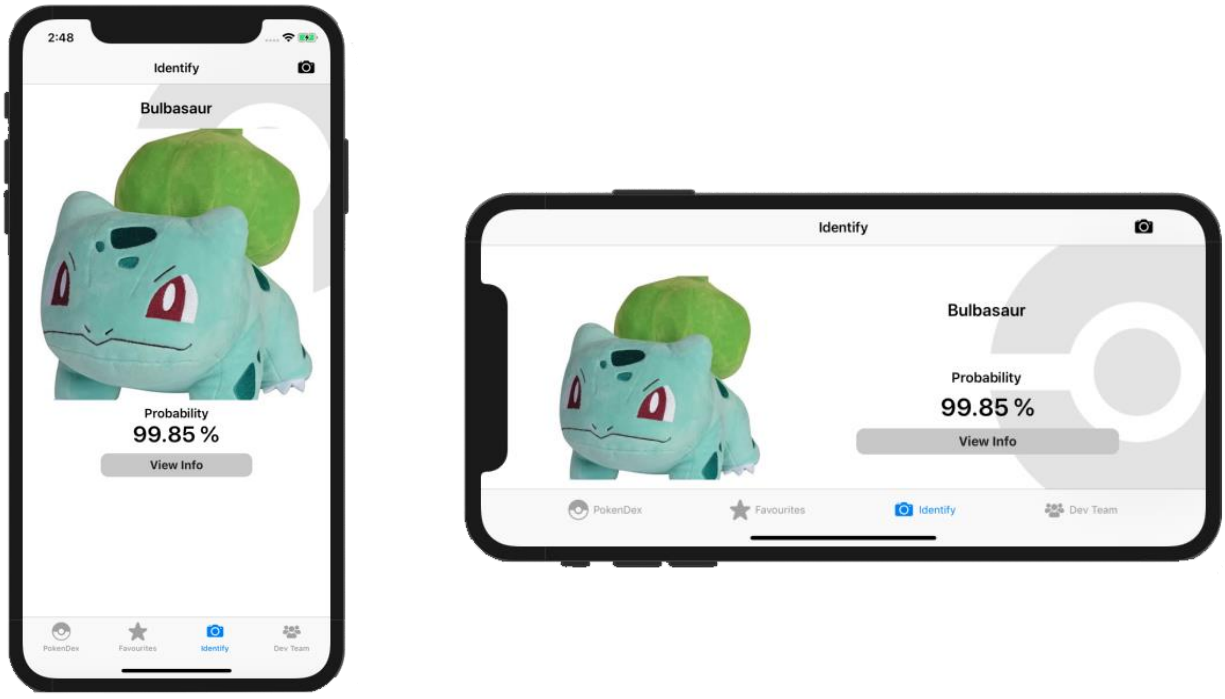
Description Detail View

Identify a Pokémon

- Identify any Pokémon toy, image, card with the help of this feature in our app
- With the help of Artificial Intelligence (AI) the app will correctly guess any Pokémon
- A unique feature which no other app has on the app store
- This is what a "PokeDex" actually is! In the series it is used to capture an image of Pokémon and present their information. So this can be called a real life Pokedex

Wireframes – High Fidelity

Xcode Simulator Screens of our app



Identify Pokemon Scene + Adaptive Layout Implementation

[Our README page of Github has some gifs to show off this feature]

App Store Page

App Store Preview

PokenDex 4+

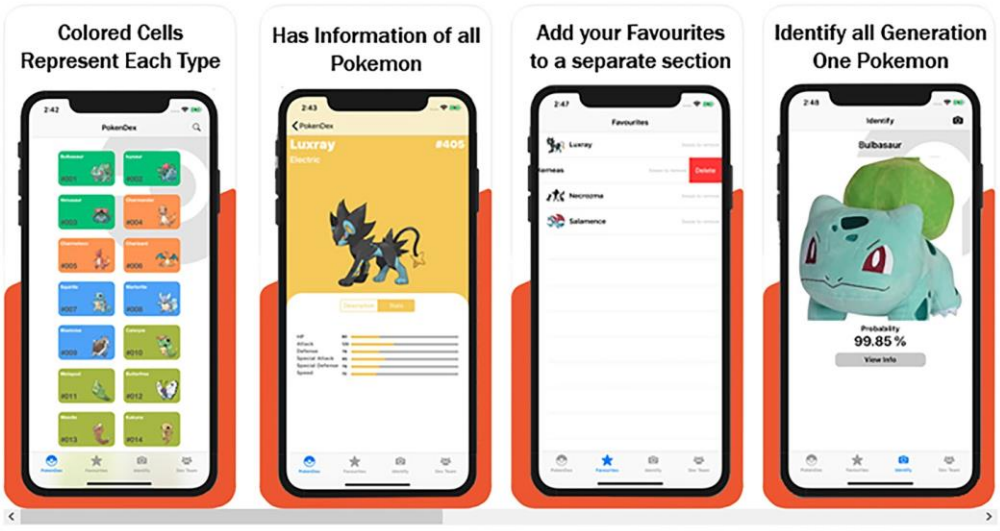
Sabih & Omar

#106 in Reference

4.7 • 1.4K Ratings

Free · Offers In-App Purchases

iPhone Screenshots



Description

If you want to catch'em all, you gotta know'em all.

PokenDex is made to simulate how a real life Pokedex feels like:

- Search through all the available Pokemon and know useful information about them that will help you in games and in general.
- Identify any Pokemon image, toy or card with the help of Artificial Intelligence (AI).
- Make a personalised list of your own favourite Pokemon and have them stored on your phone.

Have you seen a Pokemon toy or card or an image, but was unable to identify it? What's its name? What type is it? How good is it in battle? Well with the help of our app you can identify that Pokemon and our app will automatically show it's latest information. Or if you are playing a Pokemon game and want to look up a Pokemon to know what stats it has, then you can use our app to help yourself and familiarise yourself with that Pokemon.

Ratings and Reviews

See All

4.7 out of 5 — 1.4K Ratings

★★★★★
BelakeHogbean, 27/01/2020
One of the best
This app is the best Dex that I have ever more
Developer Response,
Thanks a lot for your feedback!

★★★★★
Cookie^d^au, 05/10/2020
Well made great app
Visually impressive from the get go, so I more
Developer Response,
Thanks a lot for your feedback!

★★★★★
Mthwstwrt, 25/01/2020
Feature request
This app is absolutely fantastic, only req more
Developer Response,
Thank you for your feedback. We are act more

Design Themes (Apple)

1. Clarity:

- **Colour Highlights:**
  Our app extensively focuses on the view colour according to the Pokemon type. For e.g: A grass type Pokemon has a green colour theme while a Fire type Pokemon has a orange colour theme. This makes the use of one of Apple's design principles "Clarity". It is clear what type you are clicking on as it is shown by the colour. The colour highlights make it clear for the user to understand what type stats they are looking at

- **Use of Flat UI Colours:**
  The use of colour was important for our app as we have kept our design to have a light theme but with lots of colours in contrast to it according to Pokemon types to heighten user knowability of what type of Pokemon they are looking at without having to read the type. So we used a flat UI colour palette so that we keep our minimalist vibe to our app and keep the design light and simple yet interactive to the user.

- **Readable Text:**
  The text is easily readable throughout our app and is wrapped around negative space for easy readability and clarity.

2. Deference:

- **Content Interaction:**
  The user is able to focus more on the content rather than the UI outshining the content so our app has kept a minimalist design of lite theme on the main PokenDex page and has added colour to cell according to Pokemon types so that user is always engaged to click on it and see more of it. With the help of this main page the user would want to understand and interact with it instead of competing with it.

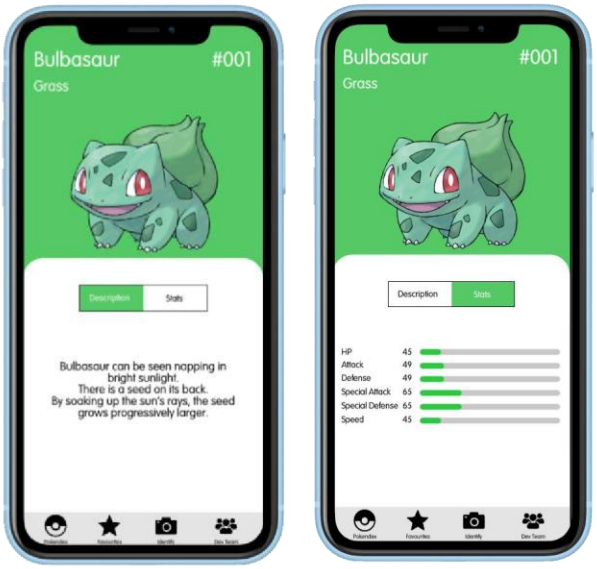
- **Light UI Design:**
  Our UI design has no use of gradients and drop shadows but everything is presented as flat, light and airy according to Apple's design principle "Deference".

3. Depth:

- **Use of Long Press Gestures:**
  Our app uses features that add depth to our app and heighten delight to the user for what is about to happen next. The app has a long press gesture embedded when you tap on the Pokemon and is presented with a popover that asks the user to add this Pokemon to favourites or cancel it.

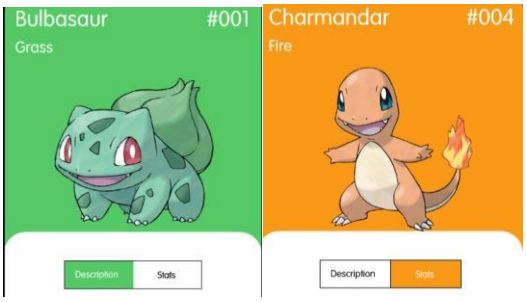
- **Swipe to Remove:**
  The swipe to remove motion adds more depth and creates a fluid motion effect that peaks user interactivity. This effect is used in the favourites section of our app where the user is able to remove their favourite Pokemon.

- **Segmented Control:**
  Precise segmented control is used in the detail view of Pokemon. Our detail view was too big to fit in one screen size so we decided to divide it into two parts through segmented control which will add interactivity among users and will add depth to the application as there are two layers of information in the same view.



Design Themes (General)

1. Contrast:



Our app has been designed with C.R.A.P. design principles in mind and one of the main aspects of this design concept is contrast which our app thoroughly relies on. The contrast aspect is used in our app in terms of colour design. Our app has a main colour white and in contrast to it there are several colours that depend on Pokemon types. This is done to let the users know which type of Pokemon they are looking at when they see the detail view. A grass type Pokemon which is green has all the options associated with it in flat UI green colour including the segmented control, progress bars, cells etc. Similarly a fire type Pokemon which associates to orange has all other options orange in colour to have high contrast on what type of Pokemon the user is looking at.

2. Repetition:

White colour is used throughout our app in every scene of the app. It is the main colour in contrast to other colours of our app that are being used to distinguish Pokemon types. Our app uses the same font size and same repetitive spots to display Pokemon name, it's type, ID, and has repetition in all of the detail view pages.

3. Alignment:

Proper alignment is used throughout the app which includes aligning the cells in the main collection view to be at the exact same size and height and alignment to keep the user interaction light and simplistic. The use of progress bars also has alignment to it. The font, the number and the progress bar have been centered horizontally to one another to keep the alignment aspect true to ourapp.

4. Proximity:

Looking back at the alignment example, our app has the use of proximity where all the stats components are closely grouped together as they are related to the "stats" aspect of the description similarly "description" is grouped separately through the use of segmented control. Another example of proximity is that the name, ID, type of Pokemon are wrapped in the same place to denote that this piece of information is related to each other.

Project Analysis

1. Design Patterns:

Our app uses MVVM design pattern thoroughly. We have created a single instance called "PokendexService()" and this service is used throughout our app to make networking GET requests. The Model folder contains lots of models files as the PokeAPI is designed this way and it contains lots of different details so it requires that lots of models have to be created when parsing the JSON. All the models created have been used in the app. The ViewModel files make the data ready to be presented to their desired controller files. Our app is only targeted towards iPhones and not iPads

2. Networking (REST):

PokeAPI is a unique API that caused us lots of trouble on how to approach this and parse it because it doesn't have one URL source it's main URL has properties that contain URLs as well. These nested URLs were of use for our app and so we decided to use 3rd party framework "Alamofire" which made the networking and parsing of this nested URL JSON quite easy and efficient.

3. Core Data:

Our app required persistence in the favourites section and we implemented Core Data to fulfill this requirement. The data can be created, retrieved, updated and deleted when need be and fulfills all 4 CRUD operations.

4. Machine Learning:

Our app consists of a model trained completely by us using CoreML. The data we used was a set of 10,000+ images of each Pokemon of the first generation. The model was trained for 9 hours in real time in CoreML. It can recognize all the first generation Pokemon which are a total of 151.

5. Group Dynamics:

Most of our group work has been done by 2 members alone and there were many issues that required help from our 3rd member but unfortunately they have been unresponsive throughout this assignment. One of our group member has put in extra effort due to unresponsive team member and sacrificing their own time to complete this app and make it functional.

Student Log

Week 1

Week 1	s3721552	s3668469	s3528350
Attended Meeting/Discussion (25%)	Y	Y	Y
Contribute to Week Task Assignment (25%)	Y	Y	Y
Completed Previous Week Task List (25%)	Y	Y	Y
Completed Previous Week Tutorial, Exercises and/or Research Learning (25%)	Y	Y	Y
Total	**100%**	**100%**	**100%**

Agenda
Schedule Weekly MeetingTimes
Pick Theme for App
Propose idea
Write App statement
Research similar app

End of Week Tasks Checklist	**Completed**
Write App Statement	Y
Research Similar Apps	Y
Create Git Repository	Y
Establish communication methods	Y

Week 2

Week 2	s3721552	s3668469	s3528350
Attended Meeting/Discussion (25%)	Y	Y	Y
Contribute to Week Task Assignment (25%)	Y	Y	Y
Completed Previous Week Task List (25%)	Y	Y	Y
Completed Previous Week Tutorial, Exercises and/or Research Learning (25%)	Y	Y	Y
Total	**100%**	**100%**	**100%**

Agenda
Research Similar Apps
Invite other team members to the repository
Form Google Drive

End of Week Tasks Checklist	**Completed**
All apps researched	Y
Further discussion about the app	Y
Created Google Drive	Y

Week 3

Week 3	s3721552	s3668469	s3528350
Attended Meeting/Discussion (25%)	Y	Y	Y
Contribute to Week Task Assignment (25%)	Y	Y	Y
Completed Previous Week Task List (25%)	Y	Y	Y
Completed Previous Week Tutorial, Exercises and/or Research Learning (25%)	Y	Y	Y
Total	**100%**	**100%**	**100%**

Agenda
Brainstorm for the application's functions
Further discussion about the app
Create low fidelity mockup

End of Week Tasks Checklist	**Completed**
Brainstorming done by everyone?	Y
Discussion to add identify feature to our app	Y
Low fidelity mockup done	Y

Week 4

Week 4	s3721552	s3668469	s3528350
Attended Meeting/Discussion (25%)	Y	Y	Y
Contribute to Week Task Assignment (25%)	Y	Y	Y
Completed Previous Week Task List (25%)	Y	Y	Y
Completed Previous Week Tutorial, Exercises and/or Research Learning (25%)	Y	Y	Y
Total	**100%**	**100%**	**100%**

Agenda
Create Medium fidelity wireframes
Discuss app functionality according to marking rubric
Start working on git repository
Update report – Research Component

End of Week Tasks Checklist	**Completed**
Medium Fidelity done	Y
Downloaded Pokemon data from PokeAPI	Y
Created CollectionView Setup	Y
Created all mockup scenes of the app	Y
Added design principles to the report	Y

Week 5

Week 5	s3721552	s3668469	s3528350
Attended Meeting/Discussion (25%)	Y	Y	Y
Contribute to Week Task Assignment (25%)	Y	Y	Y
Completed Previous Week Task List (25%)	Y	Y	Y
Completed Previous Week Tutorial, Exercises and/or Research Learning (25%)	Y	Y	Y
Total	**100%**	**100%**	**100%**

Agenda
Finalise Report
Add Master/Detail View in the app
Add API Data into the Model class

End of Week Tasks Checklist	**Completed**
Report Completed	Y
Master/Detail View Completed	Y
API Data Inserted	Y

Week 6

Week 6	s3721552	s3668469	s3528350
Attended Meeting/Discussion (25%)	Y	Y	Y
Contribute to Week Task Assignment (25%)	Y	Y	Y
Completed Previous Week Task List (25%)	Y	Y	Y
Completed Previous Week Tutorial, Exercises and/or Research Learning (25%)	Y	Y	Y
Total	**100%**	**100%**	**100%**

Agenda
Add Favourites to the app
Add Search functionality in the app
Research flat UI Colours for the app according to Pokemon types
Finalise the prototype app

End of Week Tasks Checklist	**Completed**
Favourites Functionality Done	Y
Search Functionality Done	Y
Added in Flat UI Colours as hex codes with the help of extensions	Y

Week 7

Week 7	s3721552	s3668469	s3528350
Attended Meeting/Discussion (25%)	Y	N	Y
Contribute to Week Task Assignment (25%)	Y	N	Y
Completed Previous Week Task List (25%)	Y	Y	Y
Completed Previous Week Tutorial, Exercises and/or Research Learning (25%)	Y	Y	Y
Total	**100%**	**50%**	**100%**

Agenda
Fix Medium Fidelity Wireframes according to app changes
Fix Auto Layout Problems
Enhance App UI
Submit Assignment

End of Week Tasks Checklist	**Completed**
Prototype Completed	Y
Assignment Completed	Y

Week 8

Week 7	s3721552	s3668469	s3528350
Attended Meeting/Discussion (25%)	Y	N	Y
Contribute to Week Task Assignment (25%)	Y	N	Y
Completed Previous Week Task List (25%)	Y	Y	Y
Completed Previous Week Tutorial, Exercises and/or Research Learning (25%)	Y	Y	Y
Total	**100%**	**50%**	**100%**

Agenda
Tackle how to parse PokeAPI
Prepare UI Testing
Introduction to 3rd Party Frameworks

End of Week Tasks Checklist	**Completed**
UI Testing Planned	Y
PokeAPI Parsed and displayed	N

Week 9

Week 7	s3721552	s3668469	s3528350
Attended Meeting/Discussion (25%)	Y	N	Y
Contribute to Week Task Assignment (25%)	Y	N	Y
Completed Previous Week Task List (25%)	Y	Y	Y
Completed Previous Week Tutorial, Exercises and/or Research Learning (25%)	Y	Y	Y
Total	**100%**	**50%**	**100%**

Agenda
Difficulties Parsing PokeAPI
Team issues unresponsive team member
Core Data Implementation

End of Week Tasks Checklist	**Completed**
PokeAPI Parsed	Y

Week 10

Week 7	s3721552	s3668469	s3528350
Attended Meeting/Discussion (25%)	Y	N	Y
Contribute to Week Task Assignment (25%)	Y	N	Y
Completed Previous Week Task List (25%)	Y	Y	Y
Completed Previous Week Tutorial, Exercises and/or Research Learning (25%)	Y	Y	Y
Total	**100%**	**50%**	**100%**

Agenda
Core Data Implementation
Unit Testing

End of Week Tasks Checklist	**Completed**
Core Data Completed	Y
Unit Testing Completed	Y

Week 11

Week 7	s3721552	s3668469	s3528350
Attended Meeting/Discussion (25%)	Y	N	Y
Contribute to Week Task Assignment (25%)	Y	N	Y
Completed Previous Week Task List (25%)	Y	Y	Y
Completed Previous Week Tutorial, Exercises and/or Research Learning (25%)	Y	Y	Y
Total	**100%**	**50%**	**100%**

Agenda
Added Commented Code
Fix/Shorten Methods & Organize Files
Add CoreML Model and code related to it to make it functional
Submit Assignment

End of Week Tasks Checklist	**Completed**
App Completed	Y
Assignment Completed	Y