Proposal for Planit:

Team Members	Role
Ryan Tan Jinn En	Project Manager
Neo Yong Tai	Development Lead
Lee Yu Sheng Daniel	Back-End Developer
Mamuduri Paulani	Front-End Developer
Frankie Ye Htet Myat	Release Engineer / Manager
Chen Xueyao	QA Manager
Kundu Koushani	QA Engineer

Name of Design Team: **Team Syan**
School of Computer Science and Engineering, Nanyang Technological University

Submitted to—
Dr. Yu Han
School of Computer Science and Engineering, Nanyang Technological University

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Executive Summary

Island nations such as Singapore have always relied on the importation of food to meet the nation's needs, with as much as 90% of all food imports being from overseas countries. However, the recent interruption of trade routes due to the Covid-19 pandemic and political unrest has showcased the severity of such effects and as a result, the need to find new avenues to counteract this problem has arisen.

One of the recent approaches taken by the Singapore government was to encourage the growth of local gardening communities around the country. This was achieved through the handing out of complimentary seed packets, the construction of more community garden spaces, and increasing awareness through advertising campaigns. Their "30 by 30" projected goal was to have 30% of the country's nutritional requirements be self sourced by 2030. Despite their efforts, however, the plan has not seen nationwide adoption.

One area we have identified in order to scale up adoption rate is to better imbue locals with key knowledge about sustaining a garden.

The proposed solution is to implement a go-to-guide in the form of a web application that allows users to keep track of plant growth and assist them in the journey to successfully caring for their garden. Through this, users will spend less time researching the type of plants they are looking to grow, and more on monitoring its growth and health throughout its lifespan. We also hope to alleviate some of the tedium that comes from garden maintenance, providing users with more free time with gardening remaining a hobby.

In short, our solution allows users to take up long term gardening without the indepth know-how on growing or troubleshooting their garden, reducing the barrier of entry and increasing the scalability of local gardening. Ultimately, reaching the projected goal of "30 by 30".

Statement of Problem

Summary:

      The recent Covid-19 Pandemic has forced the Singapore government into adopting the long term goal of having 30 percent of the total food consumption be sourced locally by 2030. However, the actual adoption rate by the local population has been slower than expected. Problems such as *lack of time, insufficient resources* and *highly discouraging results* have been cited as the main cause.

Background:

      Our company is focused on providing small scale digital solutions to the average homeowner. Our products range from energy tracking applications to WiFi Mesh monitoring software.

Relevance or importance of problem:

      The annual report released by the Global Food Security Index (GFSI) 2019 Asia Pacific regional report identified Singapore as the most food secure country in the Asia Pacific region. However, it was brought to our attention that 90% of the food was from imported sources. While Singapore as a whole may continue to function normally amidst a similar disaster, the volatility of the supply chain and the instability observed in other countries means that our supply lines may see another form of future jeopardy.

      In August of 2021 the Jurong Fishery Port, which supplies up to 30% of the nation's seafood imports, was forced to halt business temporarily when an outbreak was discovered to have originated there. Political instability and supply contamination in neighbouring countries such as Malaysia, Australia and China also threaten the stability of sourcing food externally. Thus, it falls upon Singapore as a nation to seek alternate means, one of them being increasing the self-sufficiency in the key food items: Eggs, Fish and Vegetables.

      Recently, NParks has launched a 'Gardening with Edible' program to encourage the public to grow their own vegetables. Each household was entitled to two packets of seed and some gardening soil. Therefore, in light of the efforts taken by the government, we aim to create an application that can make gardening more convenient and easy.

Background information:

      Currently, there are a few applications that aim to help gardeners with their plants. It includes a notification system to notify users to water and care for the plants

according to a suitable schedule for the plant and a platform to share gardening tips. However, there are some limitations to these applications:

1) Lack of plant growth monitoring functions
2) Current applications do not provide data visualisation functions for users to better understand the trends in their plants' growth
3) No suitable default schedules for different plants available for novice gardeners to follow
4) System not catered for Singapore climate

We believe that by acting on these limitations, we can build an application to help the budding gardeners to grow their plants well and conveniently in the Singapore climate.

Objectives

This document proposes the development of a go-to web application for plant owners. The objectives we wish to accomplish through this application are as follows:

(1) Monitoring Plant Growth

The web application will collect and visualise data such as the estimated number of seed types sown in a specified area of their allotment, as well track the number of days from the starting date the seeds were planted, to the projected harvesting date in order to return a projected average growth of the plant as reference. It will also provide a schedule for users to follow, including regular customised notification depending on the environmental factors. (*ie. Advising the user to not water for a specified period of time based on rainfall*), which can be further updated in the future to provide more relevant information.

(2) Seasonal Harvests Quantities and Feedback

Seasonal harvests in the form of either physical quantities or weight will then be used as a form of tracking, which can be compared to the average rates of other sources letting the user understand if theirs is above or below the mean. Information in the form of encouragement or advice will then be provided accordingly.

(3) Platform for Users to Connect

The online platform allows users to post their questions and gardening tips, as well as allow them to shortlist searches for gardening communities based on their preferences (ie Vegetable, Composting, Flower centric, etc.). Admins will also be able to post updates to users regarding software updates, news and information.

Technical Approach

The main problem Singaporean residents currently face is the lack of knowledge and team needed with regards to growing a plant. To achieve this goal, we first analysed customers' needs to better understand what our main focus points should be.

Customer Needs

After scouting gardening forums, conducting interviews with gardening communities as well as basing some of our research off personal experience as gardeners ourselves, we identified four main reasons as to why many Singapore residents choose not to grow their own food:

- Many did not have prior experience in nurturing a plant and may find the learning curve too steep.
- Many struggle with finding suitable resources for planting due to Singapore's unique climate.
- Many find nurturing plants to be a hassle as there is too much to keep track of.
- Some residents lacked an active centralised community to be part of.

In light of these reasons, we have identified the main needs of Singapore residents, which are:

1) Ease of learning on how to grow a plant.
2) Streamlined planting resources suitable and relevant to Singapore's hot and humid climate.
3) Making the process of nurturing a plant more convenient.
4) An accessible community where users can ask and connect with external communities with ease.

Target Specifications

Planit will be a spreadsheet and resource providing web application which focuses on streamlining the process of caring for a garden as well as reducing the guesswork involved, both in inexperienced and expert gardeners gardeners.

The first need is for a way to easily learn how to grow a plant. To target this need, it is crucial that our web application provides step-by-step guides on how to grow and care for each specific species. To reduce the burden on users when learning how to use our web application, it is important that the web application has a simple and user-friendly design.

The second need is for suitable and relevant planting resources. To target this, the planting guides within our web application must be adjusted to take into consideration

Singapore's hot and humid weather. In addition, common problems in plants that arise due to growth in a temperate environment should also be included.

The third need is for a convenient way to keep track of plant growth. To target this, we have included a notification/reminder system so that users do not need to take special notice of when to water each of their plants.

Lastly, our web application will include a social platform to satisfy users' need for a community. On this platform users can share their planting experiences, resources and recommendations.

Technology Consideration

Tool/Platform	Description
Language used	Javascript. The MERN Stack runs on javascript and is now one of the most common programming languages in the world with one of the more active developer communities.
Git	Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.
GitHub	Code hosting platform integrated with Git
VSCode	Open source IDE with many extensions to improve developer efficiency
Amazon Web Services (S3)	It offers reliable, scalable, and inexpensive cloud computing services. We will be using Amazon Simple Storage Service for the hosting of our application

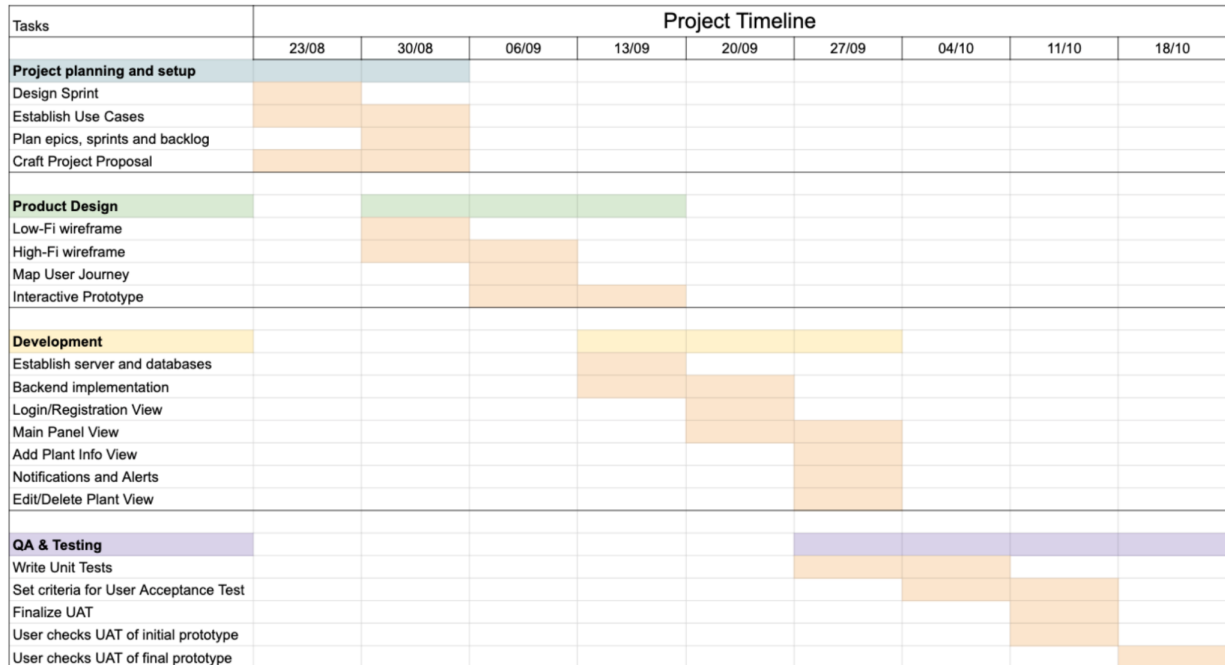*Table 1. Technology Considerations for Planit*

System Architecture/Platform

MERN STACK	
Technology	**Description**
MongoDB	The database tier of the 3-tier architectural pattern. It is a document database used to store JSON data and works with Node, making storing, manipulating and representing JSON data really easy.
Express	The application tier of the 3-tier architectural pattern. It is a server-side application framework that wraps HTTP requests and responses, and maps URLs to server side functions.
React	The front-end display tier of the 3-tier architectural pattern. It is a frontend JavaScript framework for building interactive user interfaces in HTML and communicating with a remote server.
Node	Javascript Web Server. It is used to run Express.

Table 2. System Architecture used for Planit

Project Management

Tasks	Project Timeline								
	23/08	30/08	06/09	13/09	20/09	27/09	04/10	11/10	18/10
Project planning and setup									
Design Sprint	�								
Establish Use Cases		▢							
Plan epics, sprints and backlog									
Craft Project Proposal	▢								
Product Design									
Low-Fi wireframe		▢							
High-Fi wireframe		▢	▢						
Map User Journey			▢						
Interactive Prototype			▢	▢					
Development									
Establish server and databases				▢	▢				
Backend implementation				▢	▢				
Login/Registration View					▢				
Main Panel View					▢	▢			
Add Plant Info View						▢			
Notifications and Alerts						▢			
Edit/Delete Plant View						▢			
QA & Testing									
Write Unit Tests						▢			
Set criteria for User Acceptance Test							▢		
Finalize UAT							▢		
User checks UAT of initial prototype								▢	
User checks UAT of final prototype									▢

The above figure shows the project timeline with the tasks planned. To efficiently utilize the time, some tasks will be carried out in parallel to others. For instance, backend development can be done in parallel while the interactive prototype on figma is being designed before commencing front end development. Testing phase will begin after the first iteration of the full product is developed. Finally the user acceptance test will be phased into 2 phases on initial and final prototypes.

Deliverables

The following are the project deliverables:

1. Planit web application source code
2. Backend servers hosted on AWS
3. Database instance on MongoDB
4. Design files (low-fi, high-fi, component library, working prototype) on Figma
5. Test cases and testing processes
6. Backlog, product roadmap & product usage analytics

Budget

The budget can be broken down into 3 main categories; equipment/infrastructure, human resources and miscellaneous which includes one time cost as well as recurring costs throughout the duration of the project.

		Year		
Category		Month 0	Month 1	Month 2
Equipment/ Infrastructure	Supplier			
Laptops	Apple	$21,000		
Server	Amazon	$400	$400	$400 ($1200)
Domain Name	GoDaddy	$15	$15	$15 ($45)
Database	MongoDb	$57	$57	$57 ($171)
Human Resources				
Technical Project Manager		$7,000	$7,000	$7,000 ($21,000)
Lead Developer		$6,750	$6,750	$6750 ($20,250)
Front-end Developer		$4,500	$4,500	$4,500 ($13,500)
Back-end Developer		$5,000	$5,000	$5,000 ($15,000)
QA Manager		$6,200	$6,200	$6,200 ($18,600)
QA Engineer		$4,000	$4,000	$4,000 ($12,000)
Release Engineer/		$2,500	$2,500	$2,500 ($7,500)

Manager				
Miscellaneous				
Workspace Rental	WeWork	$750	$750	$750 ($2250)
Refreshments	Various	$300	$300	$300 ($900)
			Total	$133,416

Table 3. Budget predictions for Planit

Communication and Coordination with Sponsor

The project manager will liaise with the sponsor on a monthly basis through Zoom to keep them updated. The monthly meeting will include all key stakeholders to report on the progress and future plans of the project. Due to Covid, meetings will be virtual by default.

Team Qualifications

The project team consists of capable and qualified individuals who could bring this project to a success. Their individual achievements can be found in their resumes attached to Appendix A.

1. Ryan Tan - Fluent in application building languages such as Flutter, Java and Pycharm, as well as data analysis tools such as Pandas. Has had experience helming project teams related to web application and game design in the past.
2. Chen Xueyao - Has experience in application building with languages such as Java, Python and Flutter. Has experience in the usage of data analysis tools such as Pandas.
3. Frankie Ye Htet Myat- End to end application building experience with Java, React and Python as a full stack developer. Experience leading a team as product manager driving product growth and established streamlined processes.
4. Kundu Koushani - Has experience with application building languages such as Flutter, as well as Java, C and Python.
5. Lee Yu Sheng Daniel - Has experience with Python and R for data analysis and visualisation, as well as deep learning. Created web applications using Flask and React. Specialises in Artificial Intelligence.
6. Mamuduri Paulani - Has experience in application building languages like flutter and the software development process. Fluent in other programming languages like Java, python and C.

7. <u>Neo Yong Tai</u> - Has experience with PHP and React to build web applications

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Appendix A: Résumés of Team Members

Ryan TAN | Mobile No.: 8379 9983 | Email: ryan.t.jinn@gmail.com
Internship Availability: Jan 2022 – August 2022 (7 Months)

EDUCATION

Nanyang Technological University, Singapore   Aug 2019 – May 2023 (Expected)
Bachelor of Science (Computer Science)
- Specialisation: Cyber Security
- Relevant Modules: (1) Computer Security Management (2) Data Science and Artificial Intelligence (3) Computer Architecture (4) Software Engineering (5) Databases

ACADEMIC PROJECT

Nanyang Technological University, Singapore

2nd Year project
Software Engineering and Design Project
Title: Smart Nation - Building A Better Tomorrow   Jan 2021 – May 2021
- Designed and programmed an application in Flutter and Python that utilises Government provided HDB resale flat data to forecast potential resale prices based on user selected HDB variables.
- Coded the Machine learning algorithm and API that resulted in a 10-year prediction with 95% accuracy, as well as ensures the data set is consistently updated to reflect time accurate results.
- Lead and organised the project team by overseeing the timelapse of the project, delegation of roles and assisting with multiple aspects of the software's development and documentation. Resulted in a project completion date 7 days prior to the deadline.

Data Science and Artificial Intelligence Project
Title: Machine Learning algorithm.   Jan 2020 – May 2020.
- Coded and optimised a Machine Learning algorithm in Python analysing the 2015 Nepal Earthquake dataset to determine the projected infrastructure damage relative to the magnitude of any given earthquake.
- Achieved a more efficient form of Machine Learning capable of interpreting datasets with 20% faster computation (10,000 entrees+) compared with previous iterations, as well as designed a simplified and easy to understand results chart displaying the projected results.

INTERNSHIP EXPERIENCE

MikeIT Pte Ltd   Nov 2014 – Dec 2014
School Internship Program
- Examined and advised in setting up a database server for a client, including resolving web hosting application for an offshore IT consultant firm.
- Consolidated company assets via utilising Microsoft Excel to tabulate and keep tabs on existing products under inventory and briefed the Logistics Department on their existing assets.
- Undertook pre-installing hardware and software onto 50 work machines being shipped out to a client, while maintaining a zero Return Merchandise Authorisation count.

WORK EXPERIENCE

Always Marketing   Mar 2017 – Apr 2017
Assistant Event Coordinator & Logistics Operations Assistant
- Planned and Coordinated a company-wide event for the Asia branch of Etika Pte Ltd at the Grand Hyatt Hotel that oversaw 120 guests including Chairman of the Asia Pacific Etika Board or Directors, on a budget of $50,000.
- Brainstormed and organised a movie promotional tie in with Cathay Cineplexes and Maki-San at Cineleisure Orchard, resulting in a 10% increase in ticket sales following a 2-week long promotional period
- Compiled and tabulated company spending and funds using Microsoft Excel as well as drafting event proposals using Microsoft Word.

Morsels sg   Mar 2014 – Apr 2017
Part-time Line Cook and Prep Cook
- Picked-up and showcased management skills while working within a high stress environment.
- Demonstrated and incorporated teamwork among an existing brigade, integrating seamlessly by end of Day 2.

- Acquired and executed logistical and inventory management skills for Morsels sg by utilising Microsoft Excel, resulting in a weekly average 15-20% decrease in food wastage.

LEADERSHIP & CO-CURRICULAR ACTIVITIES

Engineering Good Charity
Volunteer Learning Management System Designer + Coordinator
- Designed, implemented, and coordinated the frontend component of an LMS page online using Google Classroom for a charity which aims to provide accessible online learning for youths during the Covid-19 Pandemic.
- Oversaw 187 participants as well as sponsor partners by providing learning materials, meeting rooms, and managing sign-ups for workshops during the 3-month event.
- Assisted in hardware repair for old, discarded laptops with the goal of donating them to under privileged families that were struggling during the mandatory online learning and Stay-Home education period.

Foodcraft and Fermentation Club   Jun 2020 – Jun 2021
Event Coordinator
- Coordinated, formulated, and managed 7 sessions in total pertaining to fermentation within cooking, ranging from idea research to recipe development, to event coordination and organising manpower to work around the Covid-19 situation.
- Oversaw publicity efforts and devised outreach strategies to publicise FCFC's programmes across various platforms such as social media, achieving a breakthrough 10% increase of new club members despite the Covid-19 limitations ongoing.
- Learned and developed leadership skills via hosting and guiding participants during sessions, while also cultivating emotional and communication skills during engagements with club members and participants.

Freshmen Hall Orientation Camp   May 2020 – Aug 2020
Logistics and Programmes Committee Member
- Planned games and camp activities for 100 freshmen to encourage interaction and bonding via online platforms due to Covid-19 restrictions.
- Spearheaded and delegated camp volunteers on freshman facilitation and online interaction skills during a 2-day workshop to enhance ability to camp activities efficiently and without interruptions
- Resulted in a boost of 80-85% participant retention rate by Day 5, in comparison to 65-70% during previous years

SKILLS

Languages: Proficient in English and Chinese
Digital Skills: Python, Java, Visual Basic, GameMaker, Git, SQL, Microsoft Office

HOBBIES & INTERESTS

Cooking, Gardening, Playing musical instruments (Piano and Trumpet), Sports (Badminton and Archery)

NEO Yong Tai | Mobile No.: 8668 0557 | Email: neoyongtai1@gmail.com

EDUCATION

Nanyang Technological University, Singapore   Aug 2019 – May 2023
Bachelor of Engineering (Computer Science)
- Expected Honours, Current CGPA: 3.41/5.00

Singapore Polytechnic   Apr 2013 – Mar 2016
- **Diploma in Information Technology**
- CGPA: 3.65/4.00

ACADEMIC PROJECT

Nanyang Technological University, Singapore   Apr 2015 – Jul 2015
Final Year Project – Implement an online web portal for management of operations in a tuition centre.
- Designed the database using EERD to reduce redundancy in data and accounting for date and multiple file formats upload.
- Developed the system using PHP and MYSQL to perform CRUD operations with state management based on 3 primary roles. Administrator, Tutor and Student.
- Utilised Facebook API, I have included their login, comments and albums interface into the system for convenient usage and powerful validation.

INTERNSHIP EXPERIENCE

Accenture Pte Ltd   Nov 2015 – Feb 2016
Software Engineering Department, Intern
- Collaborated closely with supervisor and team of senior developers using IBM Cognos to create and maintain 2 reports for client to use for their daily operations
- Written and edited structured query language statements into stored procedures to make execution faster and more efficient for large amount of data used in reports
- Created test documents for features that had been implemented or modified by the team for the client to use and entrust me for the further creation of 2 more test documents
- Executed frequent testing of reports whenever there are modifications made or new features needed.

WORK EXPERIENCE

Youth Guidance Outreach Services   Sep 2015 – Oct 2015
Youth Work Associate
- Collaborated with a team of social workers, visiting 3 secondary schools with partnership to undergo programmes for troubled youths
- Explained the programme structure and leading students for the entirety of the programme
- Fostered by a mentor into building good relationship with 4 youths and have him come to the youth centre at least once a week for follow up.

SKILLS

Languages: Proficient in English and Chinese
Skills: HTML, CSS, Javascript, PHP, Java, Python, SQL, UML

HOBBIES & INTERESTS

Listening to music, Table Tennis

Lee Yu Sheng Daniel

Address: Block 353 Kang Ching Road #04-47, 610353, Singapore

Mobile: +65 9451 4934 | Home: +65 6265 8019 | Email: C170184@e.ntu.edu.sg

EDUCATION

Nanyang Technological University   Aug 2017 – Dec 2021 (Expected)

Bachelor of Engineering in Computer Science

- Specialisation: Artificial Intelligence

River Valley High School, Singapore   Jan 2009 – Dec 2014

Singapore-Cambridge General Certificate of Education Advanced Level

- Specialisation: H2 Physics, Chemistry, Mathematics and H1 Geography

WORK EXPERIENCE

Singapore Armed Forces, SAFTI Services Centre   Dec 2015 – Dec 2016

Personal Assistant

- Reviewed and updated standard operating procedure for centre's duty room operations
- Assisted in planning of Officer Cadet School Commissioning Parade; coordinated traffic control and marshalling for actual event
- Managed water points for Army Half Marathon 2016

Biotransformation Innovation Platform (A*STAR)   Aug 2019 – Dec 2019

Intern

- Wrote algorithm for identifying and visualising differential gene expression; research paper published on Scientific Reports in October 2020
- Improved the functionalities of ABioTrans, a biostatistical tool for transcriptomics analysis

CO-CURRICULAR ACTIVITIES AND COMMUNITY SERVICES

NTU Piano Ensemble, Cultural Activities Club   Aug 2017 – Present

Member since Year 1 and Peer Coach

- Performed for club events including Evening at the Theatre and Tickling the Ivories
- Conducted piano improvisation workshops for Nanyang Arts Festival 2018
- Tutored students keen in learning piano under the Peer Coach Programme

SKILLS

- Proficient in Microsoft Word and PowerPoint
- Proficient in Python and R
- Have knowledge of Java, JavaScript, C, C++, HTML, and SQL
- Bilingual in English and Mandarin Chinese
- Patient and humble

HOBBIES AND INTERESTS

- Piano: Transcribed over 20 contemporary songs for the piano, shared online for free download and usage
- Trading card games: Hosted informal tournaments for trading card game enthusiasts

Mamuduri Paulani | Mobile No.: 96195384 | Email: mamuduripaulani9@gmail.com

EDUCATION

Nanyang Technological University, Singapore   **Aug 2019 – May 2023 (expected)**
- **Bachelor of Engineering (Computer Science)**
- Specialisation: Data Science
- Relevant Modules: Database System & Principles, Databases, Software Engineering

ACADEMIC PROJECT

Nanyang Technological University, Singapore   **Jan 2021 – May 2021**
Title: Database system for contact tracing
- Designed an appropriate database scheme given the user requirements for contract tracing
- Implemented the database using MS SQL Server software
- Performed Queries to gather useful information

Nanyang Technological University, Singapore   **Jan 2021 – May 2021**
Title: Mobile application for finding carparks
- Implemented the application using flutter and google firebase where users can find near empty carparks to reduce time waste
- Designed and implemented the front-end of the application
- Set - up and managed the firebase used for login/registration and the 'favourites' function
- Wrote the software requirement specification document

WORK EXPERIENCE

Kumon Tampines   **June 2020 – Aug 2020**
Teacher (Part –Time)
- Taught students ages 5 to 16, Math and English
- Communicated with the Centre Head to ensure student's needs are met
- Helped students understand key concepts

CO-CURRICULAR ACTIVITIES

Archery (JC)   **Jun 2017 – Jun 2018**
Publicity IC
- Led with other EXCO members to ensure CCA runs well
- Designed the CCA shirts and took care of production of shirts
- Addressed team member's feedback to improve CCA activities
- Build team spirit through organising lunch and activities for the team

Freshmen Orientation Camp   **Aug 2020**
Game Master
- Conducted games for orientation for freshmen to bond with peers
- Created an open, safe and fun space for freshmen to interact and enjoy

SKILLS

Languages: Proficient in English, conversant in Telugu and Hindi
Coding: Java, MySQL, JavaScript, Python, HTML, C, C++, Python, Flutter, NumPy and pandas
Software Applications and Frameworks: Microsoft Office 2019
Other Skills: Zoom, Google Meet, Microsoft Team

Frankie Ye

Growth Product Manager @ Workato

Computer Science (Major) Entrepreneurship (Minor) Graduating 2021

PROFESSIONAL SUMMARY

Forging great products via research-driven approach and improving with data. Passionate in web technologies with several **startup experiences**. Team player. Leader. Problem Solver.

EXPERIENCE

Growth Product Manager   Mar 2020 - Present, 6 months

Workato   Mountain View, CA, USA

A leader in enterprise automation platform named by Gartner and backed by investors such as Salesforce Ventures, Workday Ventures and ServiceNow.

· **Growth PM** owning inbound web traffic data and helping to **define product vision and strategy** for the website.
· Implemented a more seamless demo request process by removing friction points which **increased lead acquisition to meetings** booked by **105%**.
· Launched a redesigned homepage in collaboration with designers and SEO expert, driving a **25% increase in traffic** to demo form page.
· Led experiments and **A/B testing efforts** for conversion rate optimization, resulting an **increase of 50%** from demo request form visit to submission
· Streamlined processes between design and dev for rebranding efforts and reduced overall **development time by 2x**.

Growth Product Management Intern   Sept 2019 - Feb 2020, 6 months

Workato   Mountain View, CA, USA

· Assisted Product Manager with **developing product roadmaps, task prioritization and estimation**.
· **Implemented reporting process** for inbound web traffic data and **presented product launches** to upper management.
· **Launched 6 solutions** on the Automation Marketplace in collaboration with partner and customer success teams **driving 1000 monthly unique visits**.
· Wireframed and launched new pricing page in collaboration with VP of marketing convey our new pricing model which reduced **page bounce rates by 12%**.
· **Collabrated with internal security team** and implemented **cookie consent form** which complies with GDPR and CCPA for new website visitors.

frankie.ye.hm@gmail.com
+65 9777 9407
Based in SF Bay Area,
Currently in Singapore

Skills & Frameworks

Agile Software Development, Scrum, React.js, Redux.js, Responsive Design, UIUX, Wireframing, Product Design

Programming Languages

Javascript (HTML & CSS), Python, PHP, SQL ,Java

Tools

Google Analytics (Certified), Google Search Console, Salesforce, Jira, Figma, Sketch, AdobeXD, Git

Languages

English (professional)
Burmese (native)
Mandarin (basic)

Social

linkedin.com/in/frankie-ye/
github.com/frankie9793
twitter.com/frankie_ye95
medium.com/@frankieye

Software Engineering Intern

Foglogic

A CloudAIOps platform for SAP applications powering consumer enterprises and backed by Shasta Ventures.

· Improved app loading speeds by **optimizing SQL queries to** databases which contains millions of rows of systems data.
· Developed **knowledge base feature** using React.JS and Redux.JS for end users to collaborate on troubleshooting system errors.
· **Automated UI testing** by building unit tests with Jest and Enzyme to catch costly errors before deployment.
· **Automated Machine Learning Scripts** to run nightly by setting up cronjobs in PHP laravel framework.

Co-Founder

Photobox

Jan 2018 - Nov 2018, 11 months

Singapore

· **Co-founded a startup** which provides a one stop web service solution for print photography.
· **Launched multiple packaged decors** themed based on seasonal holidays.
· Implemented an e-commerce website for all inbound sale and **broke even after 6 months** of launch.
· Strategized ways to market the product with limited budget by engaging influencers on social media platforms which **increased sales by 150%**

PROJECT EXPERIENCE

Movie Ticket Console

· Designed a movie ticket booking console app conforming to **Object Oriented Design Principles**, carefully planning classes, properties and methods prior to development.
· Implemented the app using **vanilla Java** which allows console admins to perform CRUD operations and ensured strict in-app error handling.
· Developed a mock database using CSV files and to store movie related information and ticket purchases .

EDUCATION

Nanyang Technological University

Bachelor of Engineering (Computer Science)

Aug 2016 - Present

Singapore

Hobbies

Memorizing rap lyrics
Reading self-help books
Writing
Going for long walks

Alternate Universe Career

Fried Chicken Connoisseur

Chen Xueyao

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EDUCATION

Nanyang Technological University   Aug. 2019 - Present
- Bachelor of Engineering in Computer Science, Year 3
- Expected Graduation: April 2023
- Relevant Modules: (1) Software Engineering (2) Human-Computer Interaction (3) Data Science & Artificial Intelligence

ACADEMIC PROJECTS

Android App Development Project   Oct. 2020 - Apr. 2021
Title: DengueGo Application for Dengue Tracking
- Implemented a technological solution to track dengue clusters using Java and Dart in Android Studio; evaluated and analysed project tasks.
- Applied a notification system to warn users within 10 seconds when they come into proximity with known dengue clusters.

Stock Analysis Project   Sep. 2020 - Apr. 2021
Title: Analysis into Factors Affecting Stock Prices & Price Predictions
- Predicted stock data by conducting statistical analysis and implementing machine learning methods via Python
- Visualized data through graphs and correlation matrices
- Ensured project development adhered to a predefined schedule

SQL Database Project   Aug. 2020 - Nov. 2020
Title: E-Commerce Database
- Created and modified a sample eCommerce database using SQL
- Performed data analysis on database to find basic statistical information
- Provided new insights into sample data by extracting and transforming useful information in database

WORK EXPERIENCE

Tuition Teacher   Dec. 2020 - Jul. 2021
- Customised tutoring and used various methodological approaches to improve students' understanding in subjects
- Motivated students' interest in learning and guided groups of 5-6 students to develop better study habits
- Elevated student performance in subjects by at least one grade within a period of 5 months

Administrative Assistant   Feb. 2019 - May 2019
United Overseas Bank (UOB)
- Maintained correspondence between merchants and company
- Produced productivity reports, spreadsheets, correspondence letters and memos
- Conducted error-checking on daily reports to detect anomalies

SKILLS

- Technical Skills: Android Studio, Flutter, SQL, Python, Dart, Java, C, C++, Microsoft Office
- Soft Skills: Strong Team Player·Effective Communicator·Active Listener

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EDUCATION

Nanyang Technological University, Singapore   Aug 2019 – May 2023 (Expected)
- **Bachelor of Engineering (Computer Science)**
- Achieved Distinction in: Engineering Mathematics II
- Relevant Modules: Introduction to Databases, Introduction to Data Science & Artificial Intelligence, Database System Principles

ACADEMIC PROJECTS

Nanyang Technological University, Singapore
Introduction to Databases Project   Jan 2021 – May 2021
Title: Implementation of a Database Application
- Implemented sample queries using SQL DDL commands in the MS SQL Server software.
- Designed two additional queries as a group; learned something new and different.

Software Engineering Project   Jan 2021 – May 2021
- Implemented a real-world application as a team of 5 using concepts and skills learnt in lectures and tutorials; was mainly in charge of the Class Diagram, System Architecture diagram and UI Mockups.
- Learnt more in detail about the different types of diagrams, coding, design and testing; submitted all deliverables within 10 weeks.

Object Oriented Design & Programming Project   Aug 2020 – Dec 2020
Title: NTU Course Registration System STARS
- Implemented an application as a team of 4 that emulates the STARS system that NTU is currently using.
- Gained knowledge of Java in detail through this project; met the requirements with relatively good accuracy.

Algorithms Project   Aug 2020 – Dec 2020
Title: Algorithm Analysis; Graph Traversal
- Analysed different algorithms as a group by comparing between their time complexities and efficiencies.
- Learnt how to modify algorithms to achieve better efficiency for the same problem.

Introduction to Data Science & Artificial Intelligence Project   Jan 2020 – May 2020
- Analysed information from a chosen dataset and carried out different techniques on the data using Python in Jupyter Notebook as a group.
- Showcased good data analysis skills through this project; learnt about various data modelling techniques such as regression, classification, clustering, and how to predict relationships between variables.

LEADERSHIP & CO-CURRICULAR ACTIVITIES

Indian Dance Club Nanyang Technological University   Oct 2019 – Mar 2021
- Performed as a member of the NTU Indian Dance in several events within and outside NTU.

Bengali Association Singapore (BAS)   Apr 2013 – Sep 2019
- Performed in numerous dance-drama events organised by the Bengali Association Singapore.

DPS International School Singapore   Jul 2017, Nov 2017
- Was selected as a member of the Student Council.
- Led a dance team to teach and coordinate one of the performances during annual day

SKILLS / INTERESTS

Languages: English, Bengali, Hindi
Programming: Python, HTML, MySQL, Java
Software Applications and Frameworks: Microsoft Office
Online Courses: Introduction to Python Programming (Udemy), Java Programming – From Beginner to Advance from scratch (Udemy)
Other Skills: Zoom, Google Meet, Microsoft Teams

Interests: Dance, Drama, Photography