

Hwa Chong Institution

Project Work

Category 3 Inventions Log Book

Title of Project: Bon Appetit
Group Name: Bon Appetit
Group Members: 1) Jayden Ang 2) Anderton Lim 3) Jordan Tan 4) Asher Wong

1. Problem Finding

(The beginning...)

Identify a problem you would like to solve. You may want to brainstorm for problems using different approaches e.g. thematic, survey or general brainstorming etc.

1 A Document a list of problems you have identified. Your documentation should show clearly how your group came up with the problems.

List of problems we identified:

1. Many customers experience difficulties in terms of placing orders when eating at restaurants, especially when using an online ordering system.
 - We came up with this problem after having a meal at a restaurant and facing difficulties when using the online ordering system, in terms of how to navigate the system and how to place orders, call for billing, etc.
2. The blind find it difficult to look for their items.
 - We came up with this problem after we watched a documentary about the problems that the blind have faced, like the difficulties they face when they need to find their items.
3. Wearing masks can cause our voices to become muffled and hard to hear.
 - We came up with this problem after noticing that some of our classmates, especially those sitting in the back rows, said that it was difficult to hear some teachers when they were teaching.

1 B You should have selected a problem based on some considerations. Identify and justify these considerations.

We have selected the problem of the online ordering system at restaurants/establishments. This is due to the rapid modernization and the constant improvements in technology, therefore there is a rising number of establishments that use the online ordering system. Therefore, the problem is prevalent in our society. We believe that by adding more features while at the same time simplifying the user interface of the system, more users will be able to successfully use the system.

1 C List some problems your group would like to solve. List also the considerations for selection of problems in the evaluation grid below. Score the considerations, against the problems, with points 1 (least significant) to 4 (most significant). Sum up the total points for each problem. Identify that problem you would like to solve.

Problem Evaluation Grid

Considerations for Selection	Problems		
	Many customers experience difficulties in terms of placing orders when eating at restaurants, especially	The blind find it difficult to look for their items.	Wearing masks can cause our voices to become muffled and hard to hear.

	when using an online ordering system.		
Feasibility	4	3	2
Scale of existing problems	3	2	4
Cost	4	2	2
Total Score	11	7	8

2. Define the Problem (This is one...)

Now that the problem has been identified. It is important to gather information on the extent of the problem and/or evaluate the usefulness of existing solutions based on *some criteria*. You may need to conduct surveys and research on existing solutions.

2 A Extent of problem (Research and discuss the problem and write down the problem statement)

Many restaurants such as Genki Sushi and many others use digital ordering systems to facilitate the ordering of food, and an increasing number of establishments are also adapting digital systems. Therefore, this problem is prevalent in society. Our aim is to improve the system in terms of efficiency, features and user interface, allowing establishments to use more features for increased convenience while also allowing users to navigate the system with ease for increased user satisfaction.

Problem statement: Digital ordering systems at establishments have limited capabilities and confusing user interfaces.

2 B Compare and contrast the existing or similar solutions.

1. MenuDrive

Similarities: -Tracks customers' ordering data
-Allows customers to order food

Differences: -Does not help chefs prioritise orders
-Customers have to use their own devices to access the app

2. Upserve

Similarities: -Helps restaurants manage their inventory of ingredients
-Allows customers to provide feedback

Differences: -Does not track customers' ordering data

3. Restolabs

Similarities: -Tracks customers' ordering data
-Helps restaurants manage their inventory of ingredients

- Differences:
- Can be used for delivery orders
 - Customers have to use their own devices to access the app

3. Your BIG IDEA[#] (Developing the idea....)

Write down your proposed invention and why you want to do it. State also how you think your proposed invention is better.

3 A Describe your proposed invention.

A digital ordering software which can benefit both restaurants and customers.

It allows restaurants to:

- Gather information on frequently ordered items
- Keep track on the amount of stock of food
- Prioritise which dishes to cook first based on how many tables ordered that dish or how long the customer has waited

It also allows customers to:

- Order food
- Request for service
- Create accounts so that presences can be saved for future visits
- Provide feedback or criticism

3 B Explain the purpose of your proposed invention and the potential benefits to users.

The purpose of our proposed invention is to make ordering through digital ordering systems easier by giving recommendations to customers to make choosing items easier, and to allow restaurants to gather information on menu items, and help chefs prioritise which dishes to prepare first to reduce waiting time and overcrowding.

3 C In what ways would your proposed invention be different and/or better than existing solutions, if any?

Our proposed invention will give the diners the best dining experience compared to other existing apps, as it is:

- Easy to order from
- Able to give recommendations to diners
- Able to help chefs have the most efficiency in preparing meals for diners

3 D What are some problems you expect in the course of your proposed invention?

- Finding the best algorithm to calculate the most efficient order of food preparation for the chefs making the app might be difficult
- The code may not work as intended initially and will require several rounds of trial and error to get right

3 E What and when are the major milestones (project timeline) in your invention?

Date	Activity
February 2021	Finalisation of Project Idea
February - March 2021	Research on proposed invention and similar ideas
March 2021	Finish Needs Analysis and begin collection of data
6 April 2021	Proposal Evaluation
April 2021	Begin output design
May 2021	Begin input (code)
July 2021	Finish output design
8 July 2021	Mid-Term Evaluation (Cancelled)
August 2021	Finish input (code)
12 August 2021	Submission of Written Report
18 August 2021	Final Evaluation

4. Construction or Modelling Process*

(This first... then that...)

You are now onto the fabrication of your prototype/ product. You need to select material and understand how to put them together so that your prototype/ product can perform its function.

4 A Explain how and why the materials were chosen for the prototype/ product of your invention

MIT App Inventor

- Can be used for both the design and code
- Easy to use
- Easy to learn how to use it
- Everyone is able to collaborate together at the same time
- Able to test out our code on a device

4 B Explore these considerations that may guide the construction of your prototype/ product.

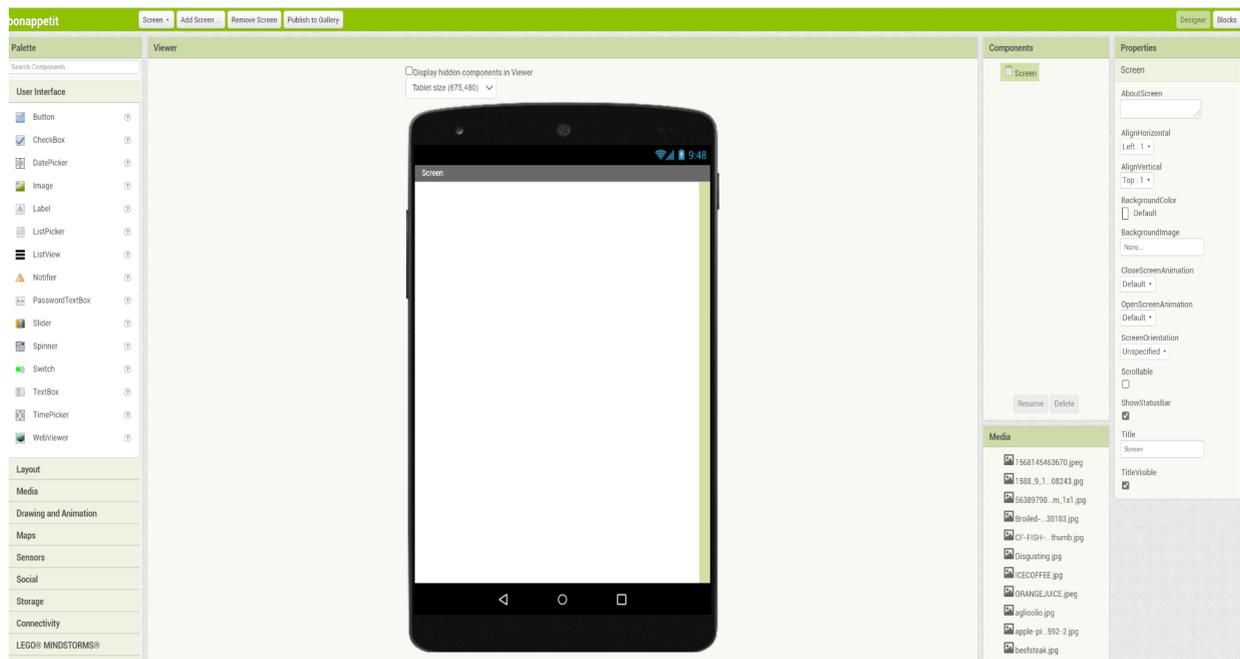
- Easy to use - Simpler and more efficient way to create our app
- Easy to learn - Facilitates learning for some group members who may have lesser knowledge of the app inventor

- Able to collaborate - Facilitates easy group work especially in the midst of COVID-19 where it is harder to meet up
- Able to test our code - Facilitates identification of possible errors in code for us to rectify.

4 C Document the prototype/ product development stages. You may use drawings, photographs or videos.

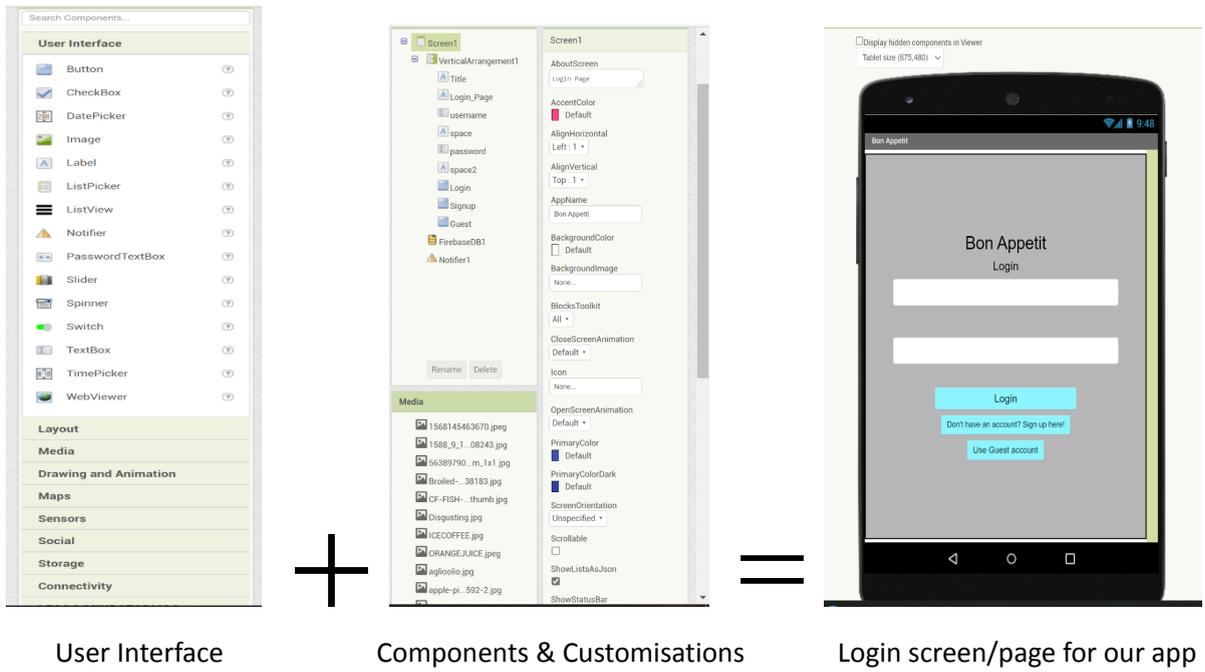
First stage: Blank Screen

This is a blank screen that we will customise and code to be included in the app. Different screens are used for different purposes. For example, this screen will be used for our login screen/page.



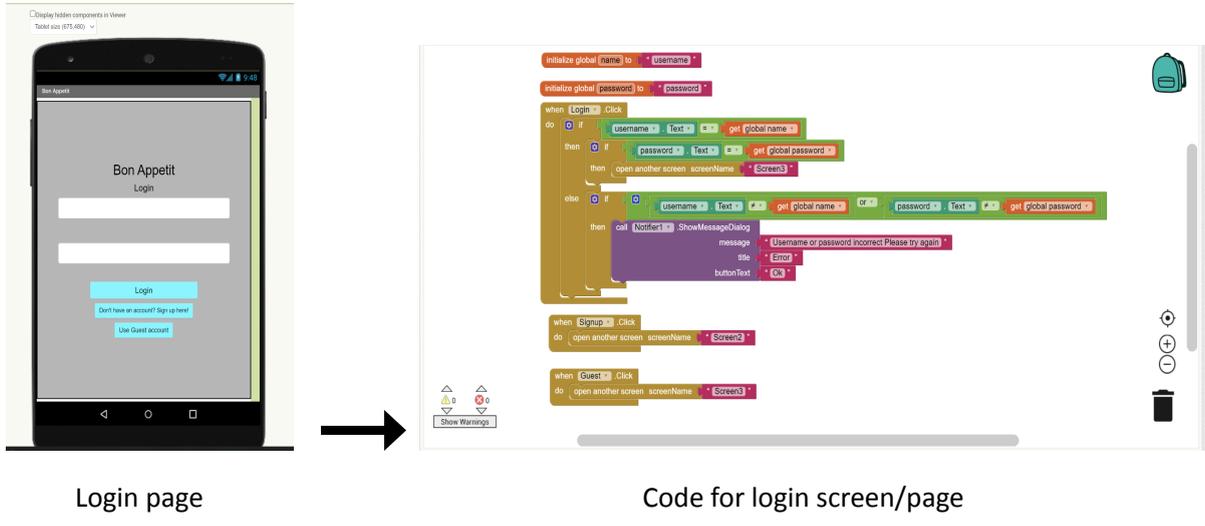
Second stage: Design

We used the interface to add different components to the screen such as buttons and labels. For example, for the login screen/page, we used the different components available to customise the screen and design the page. This will then form the base for the next stage of coding.



Third stage: Coding

We add codes to the different components on the screen such as the buttons and textboxes so that they can perform their intended actions and functions, allowing the app to work. For example, this is the code used for our login screen/page.



5. Modification and Evaluation

Upon the completion of your prototype/ product, you would need to see if it is working the way you want it to work. Check if your product has met the identified purpose and the user's need; and implement necessary modifications and improvements. This process may take several rounds.

5 A Write down your prototype/ product test criteria and check against it if it works. Identify areas of weakness for modification. Indicate the test iteration and date of test.

Test Iteration: 1	Tick			Remarks
Test Date: 1/8/21	Pass	Fail	Potential Failure	
Usability	✓			The app is easy to use
Fast loading time			✓	Could be due to the app used to test the code
Compatibility		✓		Only can be used on android devices
Effectiveness			✓	The app does not work as intended in specific situations
Aesthetics	✓			The app design is aesthetically appealing

Test Iteration: 2	Tick			Remarks
Test Date: 10/8/21	Pass	Fail	Potential Failure	
Usability	✓			The app is easy to use
Fast loading time			✓	Could be due to the app used to test the code
Compatibility		✓		Only can be used on android devices
Effectiveness	✓			The app can be used effectively
Aesthetics	✓			The app design is aesthetically appealing

6. References

Read <http://www.bibme.org/citation-guide/apa/> on how to cite references.

6 A Cite the references you have used for your project work. Your source of reference should come from different types (e.g. books, magazines, websites, journal articles, interviews, photographs, product brochures, reviews etc.)

- Restaurant Online Ordering System -New Home. (2021, June 14). Retrieved from <https://www.menudrive.com/>
- Restaurant Management Software to Become Wildly Successful. (n.d.). Retrieved from <https://upserve.com/>
- Online Ordering System For Restaurants: 30 Days Free Trial. (n.d.). Retrieved from <https://www.restolabs.com/>
- Firebase Authentication in App Inventor Using Javascript. (n.d.). Retrieved from <https://appinventor.mit.edu/explore/ai2/firebase>
- How to Make a Login and Sign Up Application in MIT App Inventor using Firebase? (2021, June 06). Retrieved from <https://www.geeksforgeeks.org/how-to-make-a-login-and-sign-up-application-in-mit-app-inventor-using-firebase/>
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- Boidron, J. (2020, June 29). Why brands need to take a strategic approach to personalization. Retrieved from <https://www.clickz.com/why-brands-need-to-take-a-strategic-approach-to-personalization/262054/>