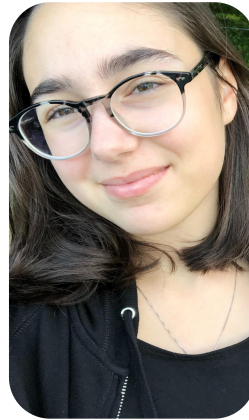




By Kayla Bariteau, Daniel Deiros Hernandez, Sydney Vanderburg, and Ammar Shakir

Hello, Welcome to Sort It!

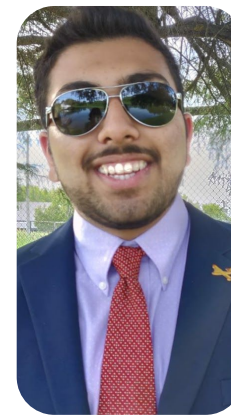
- The group was assigned with the task of creating an application which would aid users in sorting recycling
- The app is designed to use AR so that a user can simply scan an object
- Then, the app tells the user where to put that object



Kayla Bariteau



Daniel Deiros
Hernandez



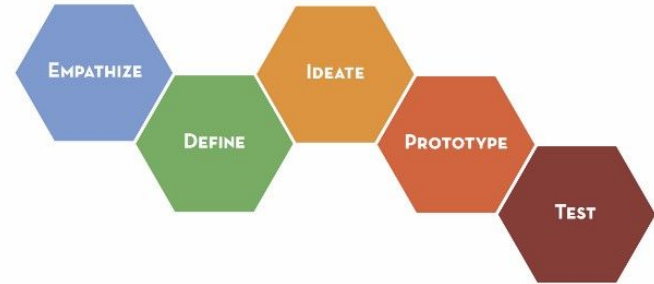
Ammar Shakir



Sydney Vanderburg

Design Process

- Empathize
 - Too many recyclable items end up in landfills
- Define
 - Citizens need guidance to correctly recycle
- Ideate
 - Make an AR sorting app to encourage recycling
- Prototyping
 - Make the app
- Testing
 - See how effective the sorting component of the app is



So What's The Problem? Define!

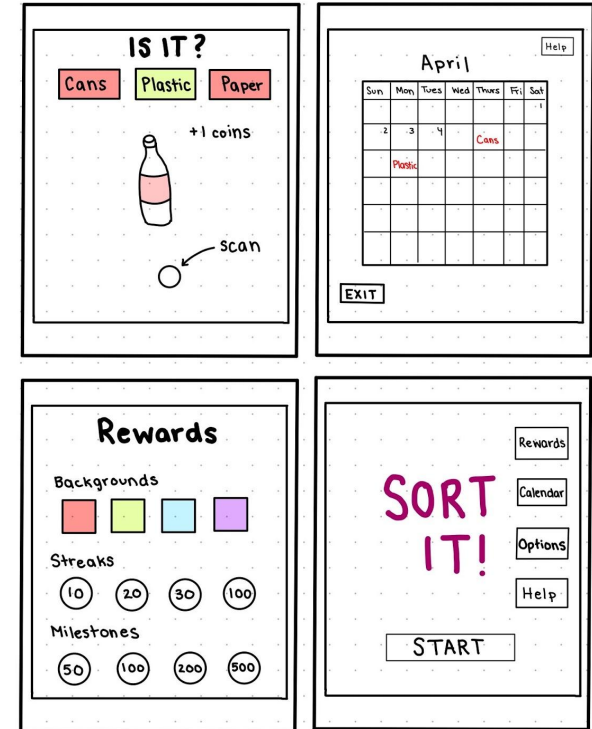
- Recycling is vital
- Landfills continue to be filled
- There must be a way to reduce waste
- How do you convince a population to recycle more?

Problem Statement: There is a need for citizens to be guided in organizing their recyclable materials in the simplest possible manner such that recycling bins are used correctly and waste in landfills is drastically reduced.



Ideate A Solution...

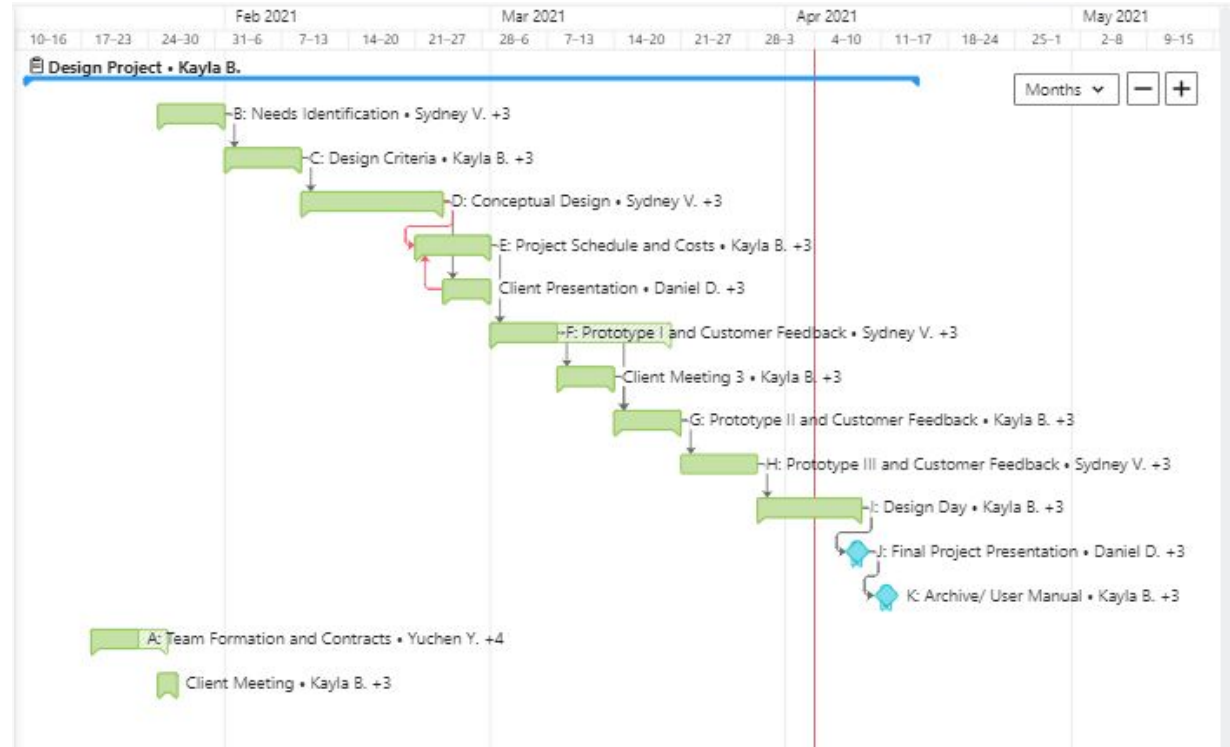
- **Homepage:** Rewards, scanning page, calendar, options and help button
- **Calendar:** Inform user of recycling dates in their area
- **Scanning Page:** Identifies the item
 - *Game* appears where you drag the item to the correct box and get rewarded
- **Reward Page:** Streaks, milestones and can purchase backgrounds
- **Options:** Adjust settings
- **Tutorials:** User can learn about recycling and how the app works



Conceptual Design

So What's the Plan?

- Project Schedule
 - Discuss dates and deadlines using Wrike
- Risk Assessment
 - Discuss probability, impact and contingency plans
- Bill of materials
 - Vuforia
 - Unity



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Risks	Probability	Impact	Contingency Plan
Issues with Code not working/not compiling	Very High	Moderate	Use online resources and ask people with experience to help the team correct the errors
Losing All Data/Progress	Low	Very High	1 of the team members will back up files locally
Schedule conflicts of team members - University-Based	High	High	Team Members will have to plan their schedules carefully, and any large conflicts such as a midterm should be brought up to all team members.
Internal Group Conflicts	Very Low	Very High	The team will use the conflict solving procedure learned in class to resolve disputes and work together.
Members Not finishing tasks	Low	High	Team members will be reminded of their responsibilities, and if they are still not doing the correct work, action will be taken against them, and the work will be divided among the other team members.
Issues With code IDE	Low	Very High	Have a backup IDE
Restriction in Meetings caused by virtual meeting software	Low	Very High	Have other means of communication and coordinate different ways of having team meetings

What to Test?

Prototype I:

- Get vuforia working
- Create a basic UI (i.e. create required scenes and buttons needed to link them)

Prototype II:

- Test on unity, IOS and Android (find any bugs/errors in the code while debugging)

Prototype III:

- Be fully functioning on Unity and IOS/Android devices

Getting Feedback

Conceptual Design:

- The client was impressed with the group's work and ideas
- The most important step was to **execute**

Prototype I:

- Work on training vuforia
- Make the main home page

Prototype II:

- Work on app aesthetics
- Add return button to scanning page
- Create a currency which is global throughout the scenes

Prototype III:

- Keep uniform background colours
- Link currency to the game



Let's Talk Benchmarking...

Competitors				
Specifications	Region of Waterloo Waste Whiz	Recycle Coach	Ottawa Collection Calendar	Sort It
Developer	Region of Waterloo	Municipal Media Inc	City of Ottawa	Sort It by Group 4
Size	69.2MB	40.7MB	69MB	40-50MB
Platform	IOS and Android	IOS and Android	IOS and Android	IOS and Android*
Game?	Small Sorting game	No	No	Sorting Game
Sorts Material	Yes	Yes	No	Yes
Explains Bin Colours	Yes	Yes	Yes	Yes
AR	No	No	No	Yes
In Game Rewards	No	No	No	Yes
Calendar with pickup dates	Yes	Yes	Yes	Yes

Competitors Analysis					
Specifications	Importance	Region of Waterloo Waste Whiz	Recycle Coach	Ottawa Collection Calendar	Sort It
Size	1	1	3	2	2
Platform	4	3	3	3	3
Game?	5	3	1	1	5
Sorts Material	5	4	4	1	4
Explains Bin Colours	3	3	3	3	3
AR	5	1	1	1	3
In Game Rewards	4	1	1	1	4
Calendar with pickup dates	2	2	2	2	2
Total	n/a	70	62	45	103

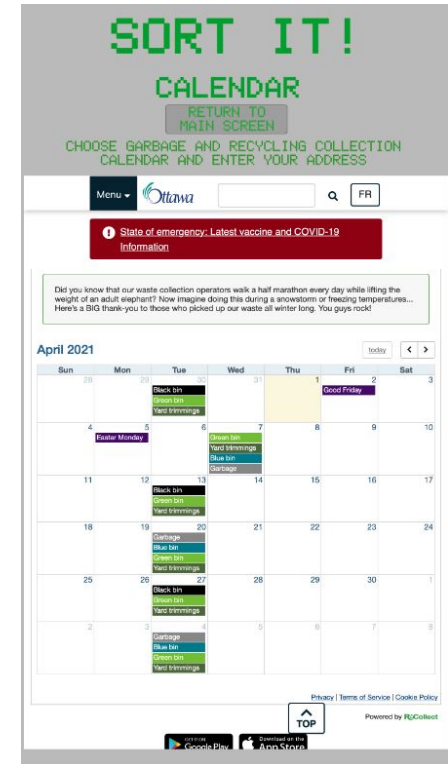
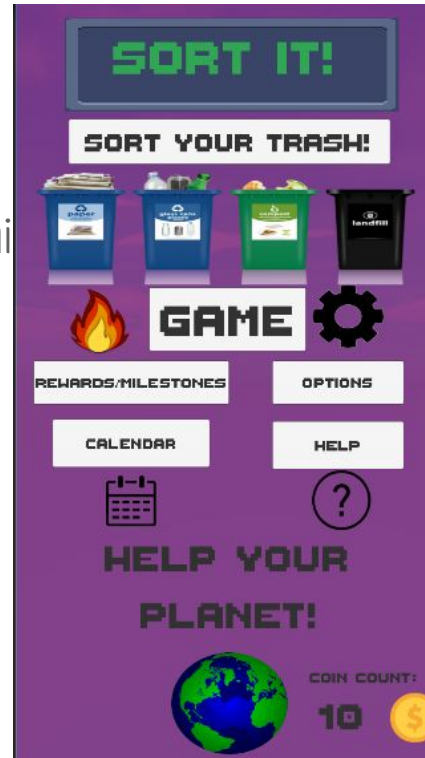
*Expected to be available on both in next stage of development



Let's Build an App!

This app features...

- A simple interface
- A small game that entices users to use the app daily
- Rewards that create motivation for users
- An opportunity to learn about recycling



Some Important Lessons Learned!

- Incorporating the scanning page into the game didn't work out
- Not able to get mobile testing functioning

So What are the Next Steps?

- Implement the application into mobile devices (upload to App Store and Google Play Store)
- Add more images to Vuforia

