Go Green

Museum of Discovery and Science

Alissa Kushner *Cypress Bay High School*
Savannah Gross *Everglades High School*
Samantha Maldonado *Marjory Stoneman Douglas High School*

Mobile Applications for Google's Android
Dr. Shankar and Prof. McAfee
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Abstract

The Go Green application was created for the Museum of Discovery and Science for the purpose of aiding visitors in understanding the Go Green exhibit as well as enhancing their experience. The creators' main goal in constructing this application was to thoroughly explain the overall message of the exhibit and its relation to the museum. As a group, the creators worked in their designated fields - coding, user interface, and graphic design - in order to successfully develop a fully-functioning application.

Background

Select students from Broward County were accepted into the APP-titude Internship Program at the Museum of Discovery and Science (MODS) in October 2014. These interns were split into groups that each specialized in their own exhibit. Each team spent the next eight months learning about the museum and outlining what each exhibit lacked. Weaknesses in content, layout, and coherence were noted in the Go Green exhibit. The Go Green team created a thorough outline of what they wanted to include in their exhibit application to facilitate the educational experience visitors gain when coming to the museum. These plans were taken to the Mobile Applications for Google's Android course at Florida Atlantic University in July 2015.

Methods

In order to successfully incorporate the general theme of the Go Green museum exhibit into the application, the creators scrutinized the area for missing information and vague presentations. They listed content ideas, photographed the exhibit, and recorded the audio features to better represent them through the application. When starting the course at Florida Atlantic University, the first activity was to plan out a fundamental layout of the application using a Balsamiq mockup. This mockup was used as a guide throughout the developing process. Each of the three group members were assigned a specialized position to learn independently. The divisions included Java coding, user interface, and graphic design, in which each member worked with a different professor and teacher's assistant.

The Java member, Alissa Kushner, worked primarily with Dr. Shankar and Alain Edwards who taught how to use and work with Android Studios to create the application. She worked to create a comprehensive Go Green exhibit app for the Museum by working off templates from previous years of the Mobile Apps for Google Android class at FAU, eventually diverging to create her own versions to satisfy the needs of the Museum.

The User Interface member, Samantha Maldonado, worked with Santiago Aguerrevere who taught the basics of interface design using the Android Studio program. Here, they created

layouts of the content which were then connected and enhanced with appealing graphics. The primary work involved using a variety of Android tools to make a user-friendly app that can be easily navigated by visitors.

The Graphic Designer, Savannah Gross, created graphics for each page of the application. Professor McAfee and Demetrius Dukes assisted in demonstrating how to work with programs such as Adobe Photoshop and Maya to produce those graphics. Using these systems, Savannah Gross designed and constructed each page of the application.

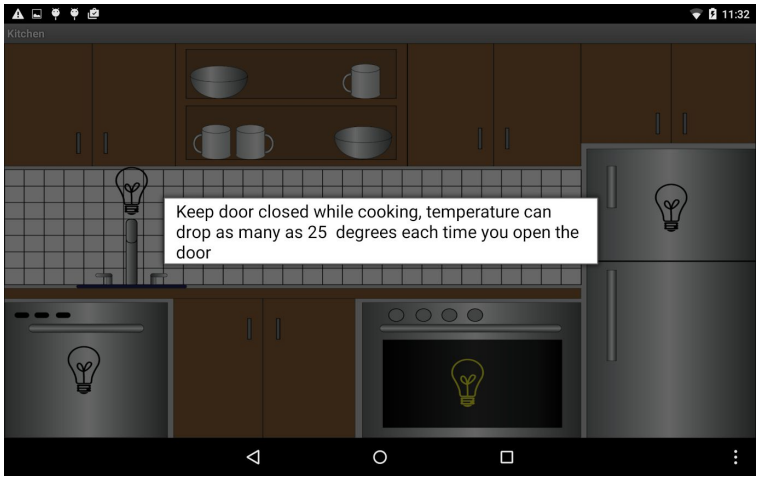
After individually learning about the different components of application development, the team began to combine their content. The Java member used the different user interface designs to link activities together and incorporated the images of the graphic design member. Much of the team's interaction consisted of emailing designs, layouts, and photos amongst each other. Alissa, the Java member, compiled these pieces to create the final project.

Throughout the course, the team faced many challenges including uncooperative codes. Their professors provided much needed assistance through their problems. A method for problem solving used when the professors were helping other teams was finding answers online or simply asking peers who had similar complications.

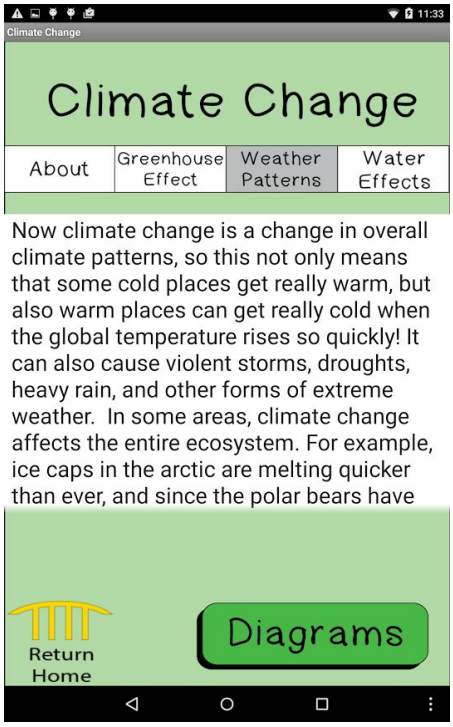
Results

The Go Green application was a success. The team was able to incorporate aspects of the museum exhibit while going beyond that content to provide additional information and activities to increase the visitor's experience. One activity the Go Green team created was a home energy efficiency portion of the application. The Go Green exhibit features two homes that exemplify energy inefficiency and energy efficiency. However, this is displayed by two bullet point texts listing aspects of each house. To make this feature more interesting and interactive, the team made an activity for the application that allows users to enter the house and click on household objects to learn how to make them more energy efficient.

Beyond simply enhancing the Museum of Discovery and Science's Go Green exhibit, the team worked to make an app that could be used even outside of the museum with many pages containing outside information, helping people become more energy efficient through awareness in their own lives.


11:32
Kitchen
Keep door closed while cooking, temperature can drop as many as 25 degrees each time you open the door


11:35
What Should YOU Recycle?
What Should YOU Recycle?
DO recycle glossy, white, colored papers, magazines, junk mail, and file folders.
DON'T recycle plastic coated papers, food/wrappers. And did you know you don't need to remove the staples or tape on a paper before recycling?
Return Home


11:33
Climate Change
Climate Change
About
Greenhouse Effect
Weather Patterns
Water Effects
Now climate change is a change in overall climate patterns, so this not only means that some cold places get really warm, but also warm places can get really cold when the global temperature rises so quickly! It can also cause violent storms, droughts, heavy rain, and other forms of extreme weather. In some areas, climate change affects the entire ecosystem. For example, ice caps in the arctic are melting quicker than ever, and since the polar bears have
Return Home
Diagrams

Discussion

The completion of a general MODS application that can access each exhibit's pages and activities will further the accessibility and conveniency of this application. To enhance the Go Green section in particular, new, updated information can be added, as well as additional games.

Conclusions

Throughout the team's 10 months interning at the museum, combined with the 3 week mobile application development course at FAU, the team has made a fully functional, completed app for the Go Green exhibit of the Museum of Discovery and Science. Its stages of development can be found at *https://github.com/MODSApps/GoGreen-App*, and the final version thus far, under the "Project Assignment 3" folder. The team will remain interns at the museum for another year, in which they will continue to improve their app through observing user interaction.

Acknowledgements

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