Title: AppInventor vs. Appery.io
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AppInventor and Appery.io are used to create mobile phone applications (apps). These tools are excellent for anyone who wants to learn how to create mobile applications without having previous computer programming experience. They are simple for beginners to understand and use. Even though both tools serve for the same purpose, they offer different features that are appealing to different users. Appery.io might feel easier tool to use because it allows users to create complex applications with little programming. However, AppInventor is more suitable to actually learn computer programming, since it requires programming in order to make a mobile app work. In this paper we describe the main features of each tool and their pros and cons.

A major similarity between these two programs is the screen designer or screen editor. This is a simple drag and drop interface used to create the graphical user interface (GUI) of the app to be developed. The screen editor provides a set of components such as buttons, inputs, lists, image containers, etc., that can be used to create the windows and elements the user will see in the screen. App developers can arrange the components on the screen to their liking, by dragging and dropping them. In addition, developers can also change the appearance of the screen by configuring the properties of the screen components, properties such as the height, width, position, fonts, text, and color.

Once the screen design is completed and the components are configured accordingly, developers take care of the app's functionality. That is, developers have to make the application do what is expected to do. Here is where the first difference between the two tools comes in.

On AppInventor, developers must open up a separate page called the *blocks editor* where the logic for the components functionality is coded or programmed. On the *blocks editor*, developers can see a list containing all the components they placed on the screen design; and additionally, they also can find other built in components in the form of puzzle blocks. These blocks represent instructions for the computer or phone. Thus, by dragging and dropping the instructions blocks in the right order and place, developers code the logic or functionality of the screen components and the whole app. For example, if the developers were to have a button component to display a message when is clicked, they would simply take

the block that represents the click event handler of that button and codify the messages, using the right instructions blocks in the right order.

In Appery.io, the way the logic or functionality is created is completely different than in AppInventor. Once the component is placed on the screen, developers must click on the events tab to give their components a function. The number of options provided in the events tab is what really sets Appery.io apart from AppInventor. Appery.io offers way more complex features in the events tab than the blocks editor of AppInventor. Some of these features include opening a URL, creating a pop up message or menu, setting an HTML attribute or even running a JavaScript code created by the user. In addition to these features, Appery.io also has its own online database backend service where developoers can store information from their application.

Although it is clearly more complex than AppInventor, Appery.io does not make the developer create every aspect of the application. Most of the "programming" work is reduced to configuration, by linking or connecting, in a graphical environment, outputs to inputs from one component to another. Some of the functionality is already preconfigured. Thus, developers do not have to utilize as much computer programming knowledge. Working with the preconfigured functions of Appery.io is nice, easy, and quick. On the other hand with AppInventor, developers must program every part of the application using the blocks editor. Having the option to create very sophisticated applications with Appery.io does not mean that developers will know how to do so. Developers being able to incorporate their own JavaScript code is great, but many amateur developers will not know JavaScript and they would have to resort to using the JavaScript coding that is provided to them by Appery.io. Having the code given to you is great, but developers who just simply receive the code from Appery.io are not learning any computer programming. They are just simply following steps instead of working off their own knowledge. Even with a low level of sophistication, AppInventor requires the user to understand computer programming in order to make the application function properly. Programming applications using the blocks editor is a greater learning advantage rather than having everything preconfigured like in Appery.io. AppInventor provides a better learning environment for amateur programmers.

Both tools provide learning resources in form of tutorials and examples. The AppInventor tutorials teach users how to create basic applications by showing the steps that users must take in order to have a complete functional application. Appery.io offers tutorials and support for their users too, but is not as educational as AppInventor. Some of their

examples are preconfigured coding that the user has to modify. In the AppInventor tutorials there is no pre-configured coding like in Appery.io; AppInventor forces the user to learn computer programming. The developer has to actually use variables, expressions, if-then and loops statements, and all the techniques a computer programmer should know. While Appery.io is an amazing professional tool that can be used to create sophisticated applications, its purpose is to allow amateur developers to create applications without having programming skills. On the other hand, AppInventor is a tool created entirely for educational purposes, to learn computer programming.

One more advantage that AppInventor has over Appery.io is the cost. AppInventor is completely free and users can create as many applications as they want. To use Appery.io a developer has to create an account. Free Appery.io accounts only allow you to create one project at a time. Standard accounts allow 3 projects at the time for $19.00 per month. Premium accounts allow you up to 40 projects at the time for $135.00 a month.

The greatest advantage that sets Appery.io apart is the platforms in which the created app can be used or ran. With AppInventor, developers can only deploy their apps on an Android based devices. Appery.io allows developers to create applications for Android, Apple iOS, Windows Phone, and other devices. This is a major advantage since not everyone who wants to create mobile applications has an android device.

In conclusion, while both presented tools allow creating mobile applications, the learning process is much simpler with Appery.io than AppInventor. The former is a professional tool, much more complex and than later. Appery.io allows amateur developers to make applications without any computer programming knowledge. While that sounds very appealing, AppInventor is the better tool to gain computer-programming knowledge, since developers actually have to use the essential logical tools that a computer programmer should know to make an app work. AppInventor is more of an educational tool for teaching or learning computer programming or computer science. AppInventor is completely free. Appery.io provides free accounts; however, it requires a paid subscription to use the tool to its full advantage. Finally, the greatest advantage of Appery.io is that those apps created with it can be deployed in different types of phones, including Apple iOS and Windows Phone. AppInventor's apps are restricted to Android based devices.