

# Mobile Project Monitor App

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## **I. Introduction**

Project planning is crucial at the beginning of a project but remains necessary throughout the whole life of the project. Project planning is the single most important tool for ensuring that a project will be completed successfully. Without project planning it is very likely that a project will fail. In this project, a project/assignment monitor prototype will be developed using Appery.io Cloud Based Mobile Development Platform. This prototype will allow the user to enter the project description, starting date, ending date, select the project manager team member, meeting date and enter Notes from the meeting. Once the information has been entered, the user will click the submit button, a warning message will display to the user when the deadline is approaching.

## **II. Relative Works**

There is a huge variety of project management applications out there. Most are general purpose apps, not aimed at any one industry. But there is a growing number of project management apps aimed specifically at one industry or another. Applications geared to creative types are becoming more readily available, and some of the offerings are really quite good. Here are some applications related to this project: 1. Lighthouse, 2. Springloops, 3. CreativePro Office, 4. Jumpchart, 5. Basecamp, and 6. Trac Project.

## **III. Technical Approach**

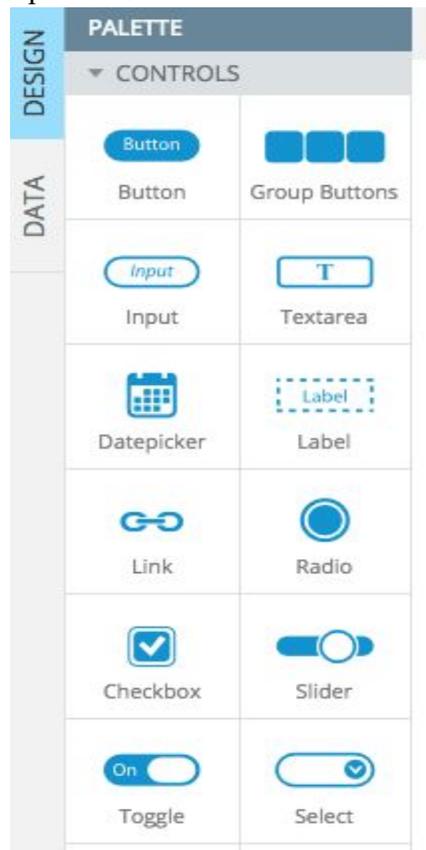
The technical approach used to develop this application is different from the normal approach for developing applications. To take a step back let's look into a brief technical approach for developing applications. When you make an application there are three components: The front end, application logic and back-end (if needed). With the creating of web connected apps (especially multiplayer games), a mobile backend is needed. This will house the users, information (in this case meeting/project info) and it's all done with a database. Then there is someone that will have to develop the application logic and there is the design or front end of the application. All of these parts of the project will have to take a programmer/designer for each role: front-end developer, back-end developer and application programmer. After that is all created then you will need to hire at least one, possible two more programmers for the front-end and application logic because of the difference in programming logic it takes with an iOS and Android application. When programming using

iOS it is done with the Objective-C programming language and for Android the language used is Java.

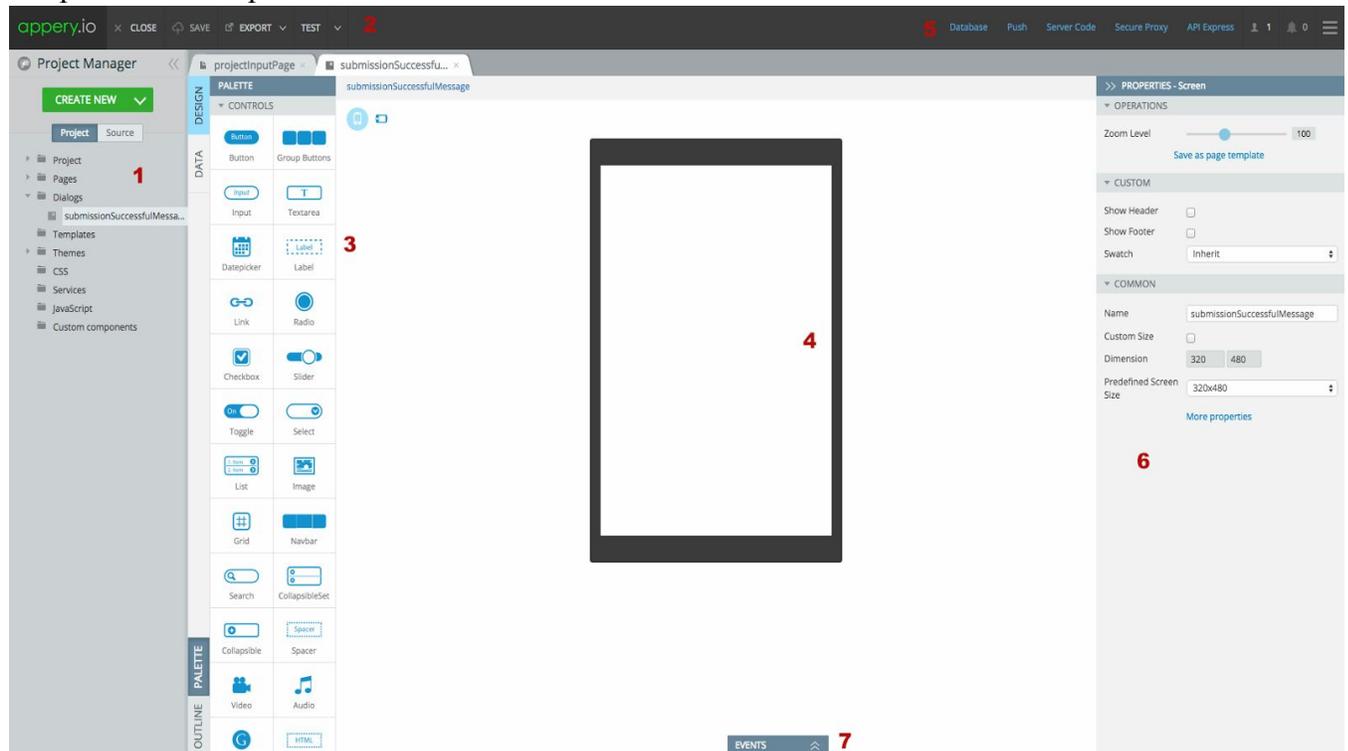
For this application we are using a cross development approach. Instead of developing for just one platform at a time, we are using a cloud based platform that utilizes web programming technologies such as HTML, JavaScript and CSS. This allows you to design the front end from a drap-and-drop interface, program the logic using both drag-and-drop interface and JavaScript, then implement CSS to tweak the design and use PhoneGap to process and compile the project into a functioning application for iOS, Android, Windows Phone and a standalone HTML website. This is all done from the Appery.io platform without the need for seperate programmers for each platform. This platform single handedly compiles for you all the platform specific binaries (final application package) that is ready for submission to each respective app store or available to launch on a web hosting account. Also this platform gives you the option to export the project to Eclipse for Android development, XCode for iOS development and Visual Studio for C#/Windows Development <sup>(1)</sup>.

#### IV. System Implementation

Appery.io is a Cloud based Mobile Application development platform. The platform is accessed via <https://appery.io/> You are able to develop cross mobile applications using a visual IDE. Each application that is built uses the latest in mobile and web responsiveness <sup>(1)</sup>. The visual element of the applications use a palette of different elements.



These are a few elements you are able to add but it allows you room to add text boxes, buttons, groups of buttons, date pickers, checkboxes and more<sup>(2)</sup>. These elements will represent the native components that will be translated when the application is compiled to the native platform. The way that is done is using a Javascript framework called JQuery Mobile. JQuery Mobile is an HTML5 user interface Javascript framework that is created to design responsive web sites and mobile applications<sup>(3)</sup>. Along with JQuery, Appery uses AngularJS by Google which is another Javascript framework<sup>(4)</sup>. There are other JS frameworks this platform uses, Bootstrap and Ionic, but for the sake of this project we are using JQuery Mobile. When you login to the platform, you are presented with your starter page and tools to get started and here we will highlight different components of the platform:



1. This is your project tree. Here you are able to view each component and file of the project. You are allowed to see the pages, UI elements and add new components to the project. Under the source tab, you are able to view the individual source code components for each platform (iOS, Android, and Web).
2. Here is your main project menu. The first option allows you to close this project and return to the main project list. The second option allows you to save any current changes you have made to the project. The third option gives you the ability to export this current project. Here is where you can export it to Eclipse or the Android binary(.apk), XCode or iOS binary (.ipa), Visual Studio Project or Windows Phone binary (.xpa) or Website in HTML/JS/CSS. The final option allows live testing of the application. When you click to test, it gives you two options: Test in a mobile frame (simulated mobile device) or without mobile frame which gives you the web application standalone.

3. Here is the list of components available on the palette. You are able to select any object and drag it to the canvas (middle device/4) and edit the properties (right side panel/6) or add some events/actions to each component (bottom tab/7).
4. This is the visual design of the application. Here you are able to see the actual layout of each component you add to the visual editor and how a prototype of it will look to the user.
5. This menu includes a few different options that interact with the Appery Platform. The first option is Database. Appery provides included with your app an option to use a backend database. This database can serve as storage for information from the application that you can view and add/delete. The database uses the standard relationship database management system with rows, columns and unique keys. The next option is Push. You are able to configure push notifications for the application to send to users. Here it allows you to configure with each platform the required permissions and certificates to enable push notifications. Next is Server Code. This allows you to give the server certain logic to perform on an automated basis such as automated push notifications. Secure Proxy gives you the ability to create additional secure features and filters to your application. API Express is gives you the ability to “easily and securely integrate apps with any back-end system. With additional features like offline synchronization included, Appery.io raises the bar as the most complete platform for the development of mobile and responsive apps”<sup>(5)</sup>. The other remaining options, starting from left to right, shows you how many collaborators are currently working on the project, a notification menu and an additional menu for media storage, return to main platform start page and the “Dev Center” that gives you extensive documentation on the entire platform.
6. The properties panel will show you the different attributes you can change depending on the object selected. Here you can add different styling options such as color, text size, margins, namespaces, swatches, icons and more.
7. The events tab is a major part in the logic of your application. Here you are able to add features to components such as a button click event or invoke a Javascript script to run. It will list all of the events you have created for the application based on the component name.

## V. Result

Below are screenshots of the application, both in development and the final product. You are also able to visit the testing page. Click here if viewing from desktop browser: <http://appery.io/app/mobile-frame?src=http://appery.io/app/view/519d945b-7e80-4bae-a449-5e2a3e5ffd03&type=mobile>

Or Click here if viewing from Smartphone:

<http://appery.io/app/view/519d945b-7e80-4bae-a449-5e2a3e5ffd03/projectInputPage.html>

You are also able to use a QR Barcode scanner app on your phone to view from your smartphone:

Scan with QR code reader



## Main App layout

The image shows a screenshot of a mobile application development IDE. On the left, there is a sidebar with 'DESIGN' and 'DATA' tabs. The 'DESIGN' tab is active, showing an 'OUTLINE' view of the 'projectInputPage' and a 'PALETTE' of various UI controls like Buttons, Inputs, Datepickers, etc. The main workspace displays a mobile app preview titled 'Project Info'. The app layout includes:

- A blue header with the title 'Project Info'.
- A form with three date input fields, each with a label: 'Project Start Date:', 'Project End Date:', and 'Meeting Date:'. Each field contains the date '11/10/2015' and a blue grid icon for date selection.
- A blue button labeled 'Select Team Member Name...' with a dropdown arrow.
- A text input field labeled 'Enter Meeting Notes'.
- A blue button labeled 'Submit Info' at the bottom.

## Events Tab for button activity

The screenshot displays the 'EVENTS' tab for a button activity. At the top, there's a visual representation of the UI element: a date field showing '11/10/2015', a text input field with the placeholder 'Enter Meeting Notes', and a blue 'Submit Info' button. Below this, a table lists the configured events:

ENABLE	COMPONENT	EVENT	ORDER	ACTION	DETAILS
<input checked="" type="checkbox"/>	returnToProjInfo	Click	1.	Close popup	Component name: popWarningMessage
<input checked="" type="checkbox"/>	submitProjectInfoButton	Click	1.	Open popup	Component name: popWarningMessage, Transition effect: pop

To the right, the 'COMMON' configuration panel for the 'submitProjectInfoButton' is visible, showing properties like Name, Visible (checked), Margin, and Class Name.

## Javascript and Database Mapping after the Submission

The screenshot shows the 'Mapping action editor: restservice1, Before send event'. It illustrates how data from the form is mapped to a REST service request. On the left, a list of form components is shown, with arrows indicating the mapping to the request body on the right.

**Form Components (Left):**

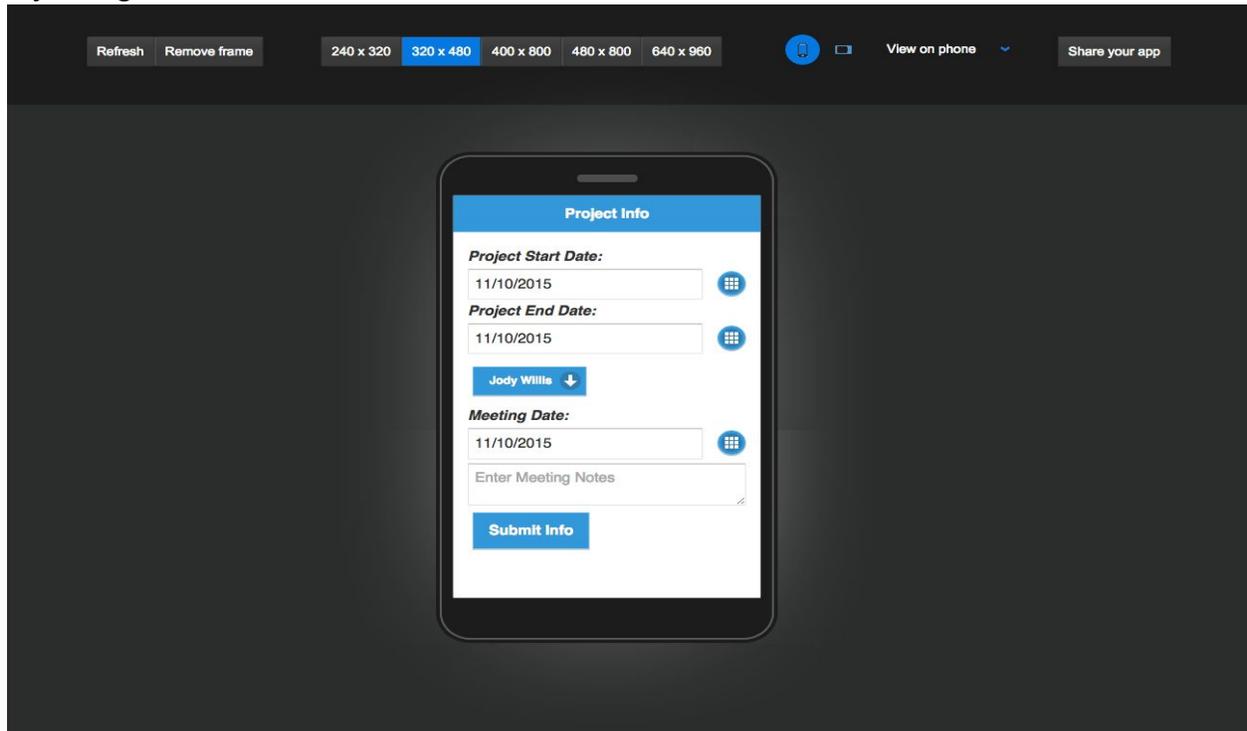
- projectStartDateSelector (Date value)
- projectEndDateLabel (Text)
- projectEndDateSelector (Date value)
- teamMemberSelector (Selected)
- teamMemberSelector-0 (Value)
- meetingDateLabel (Text)
- meetingDateSelector (Date value)
- projectDescriptionTextArea (Text)

**REST Service Request (Right):**

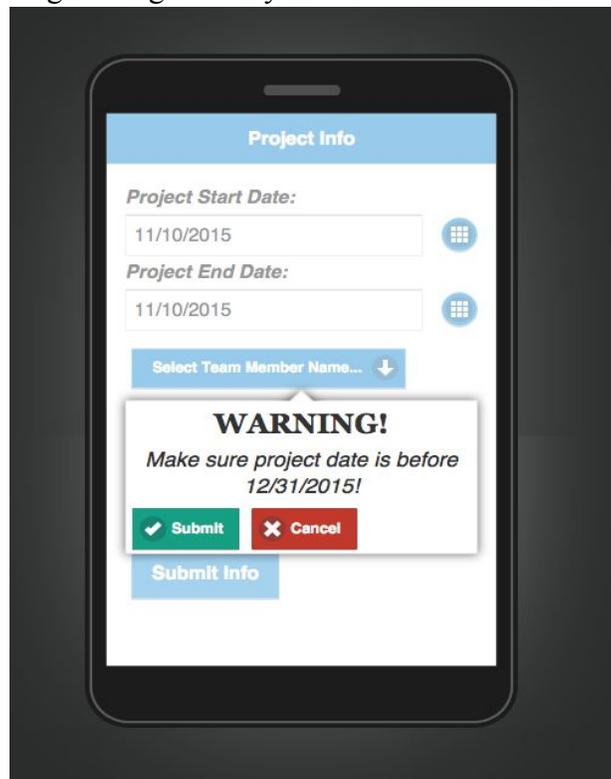
```

{
  "headers": {
    "X-Appery-Database-Id": "{database_I",
    "X-Appery-Brand": "{account_gu",
    "X-Appery-Session-Token": "",
    "Content-Type": "application/j"
  },
  "body": {
    "projectDescription": "Text",
    "projectStartDate": "Date value",
    "projectEndDate": "Date value",
    "teamMemberName": "Value",
    "meetingDate": "Date value"
  },
  "acl": {
    "write": true,
    "read": true
  }
}
    
```

Mobile Testing Emulator - You can change the device dimensions, orientation and refresh after any changes are made.



Warning message when you click the Submit Info button



The confirmation message when submitted successfully



## VI. References

1. Accelerate Mobile Innovation in the Enterprise. (n.d.). Retrieved October 29, 2015, from <https://appery.io>
2. Cross-Platform Development. (n.d.). Retrieved November 11, 2015, from <https://appery.io/appbuilder/>
3. A Touch-Optimized Web Framework. (n.d.). Retrieved November 11, 2015, from <https://jquerymobile.com/>
4. AngularJS. (n.d.). Retrieved November 11, 2015, from <https://docs.angularjs.org/misc/faq>
5. Appery.io API Express. (n.d.). Retrieved November 11, 2015, from <https://appery.io/api-express/>