Embedded Software Development:   
Design paper

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In the class *Embedded Software Development,* the main project was to create an android application capable of communicating with the smart clock created in the other embedded course: Embedded Product Design. All code can be reviewed in the project folder *ESDAndroid* included. First, we’ll go through the functions of this android app.

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Through this application we could create alarms to play at a certain time. We could designate for each day of the week if the alarm should be played. The length of the alarm was set by giving a number of seconds. The sound that plays is the mp3 name you give through the application. You could also set that after the mp3 has finished playing the next song in that directory starts playing.

A screen shot of a social media post

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On the bottom of the screen you have an overview of each created alarm. In this view panel you can choose alarms and edit each parameter. If you wish you can also remove the selected alarm.

Next, we’ll look at how we designed our application. First, we made a wireframe: a simple representation of what our application should look like. The user interface is an important part when making a mobile application, so we put a lot of thought in how we should place the multiple functions. We chose to put all application functionality in one view. But if we ever want to expand on the app capability, we need multiple views. So, we also designed a multi-view wireframe, for future reference.

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Then, using the wireframe as reference, we placed all elements into Android Studio, the platform we used to develop the application. Step by step we implemented the desired interactivity on each button. So that eventually the user input can come together in a json file, which can be send to the smart clock.

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Parallel with the UX design, we developed the TCP necessary to connect with the smart clock. With this we have all elements necessary to deliver the necessary information to the smart clock.