Adiza Awwal
Project Progress Report
Professor Gail Kaiser Due: Thursday, April 18, 2019

What I would like to investigate:
I would like to investigate application development process for traditional programming in comparison to low-code development. This project idea comes from my midterm paper research that studies the maintainability of low-code software systems. Professor Kaiser made the valid criticism that my paper did not actually test maintainability. This is because I did entirely encapsulate an entire development life cycle of a product. In order to truly evaluate maintainability study would be needed where the same participants return to their apps at a later period in time and are required to add a feature. Plus some people not originally involved would have to be tasked to modify apps developed by others.

How I would like to investigate:
I plan to implement a mobile application with a fair amount of complexity using traditional programming techniques and then implementing that same application using low-code development. Throughout the process of developing these two applications, I can then document the development process to address instances when one type of platform should be prefered over another. Secondly, I can conduct a user experience study to understand the difference in reception from an end user.

More specifically in order access some ideas or concerns expressed in the original midterm paper, I would like to document the difficulty and utility of developing an application using low code and using an application built on low code. The project is more so an overview

Project Status:
I am currently in the low code app phase. I have not begun the any traditional programming and I am still deciding which features both applications will have.

Data:
I'm still deciding what the app will actually do. I will likely implement some functionality utilizing an API and that will probably the only external data usage.

What's interesting about the system:
This concept should address the three main criteria for the project: software developer productivity, software product improvement, and/or novel use cases for software engineering techniques, practices or concepts. This is a forward facing research in that

there are a lot of unknowns surrounding low-code and/if if should or should not be prefered over traditional techniques.

Additionally, I think this is a novel idea just because there are a lot of private companies which make significant claims about low code development but, there is little to no existing research the limitations for low code. Ultimately that is the biggest question surrounding low code as well as the scalability of the low code development. For this particular it is important to understand the limitations and best practices for the low code development (e.g. the best cases in which low code can be preferred to traditional software development.)

Areas to document while developing:
As pointed out by Professor Kaiser, all topics surrounding the applications have to be discussed for the research portion. Testing, maintenance, version control, development methodology etc. are all portions of the project that will be reviewed and compared. I plan reference COMS 4156 testing material.

The application itself:
For the actual application, I first plan to complete as many features available in the low-code development environment first and then complete the application using traditional systems. Professor Kaiser suggested this as doing the reverse could foster issues within the low-code platform (e.g. building features low-code development environment does not support.) The app will be an “everything” app - utilizing as many features within low-code as possible - without necessarily making cohesive sense.

Team:
I’m working alone on this project but, I plan to consult Professor Kaiser and Ashna as needed.

Research Questions and Assessment:
1) What are the limitations of low code platforms?
2) In what instincts should low code be prefered over traditional techniques?
3) How does low code impact the life cycle of software development?

Because this study is bit more qualitative, I think will only be able to compare and contrast between traditional engineering precedence and what reveals itself using low code.

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Prospective User Community:
I think this research would be helpful for enterprise or organizations that are exploring developing some type of application but, do not necessarily understand the best methodology for their purposes. This research is helpful to understand the gradient distinction between low code and traditional development.

User Study and Demo:
For the user study, I plan to have a few developers/engineers and non-developers test the both applications and attempt to differentiate between the two (assuming I can make the applications incredibly similars.) Otherwise, I would just document the development lifecycle of the the two apps in detail.

Also for the demo, I plan to walk through both applications highlighting the nuances and distinctions between both in the code and the application itself.

User Study Recruitment:
I plan to reach out to people I know personally because I find that is the best way to get people to actually complete the user study. Participants will have to have had either development experience (e.g. internship) or no technical experience at all (e.g. English major.)

Code Delivery:
I plan to share a public Github repo with class instructors for the traditional programming portions.

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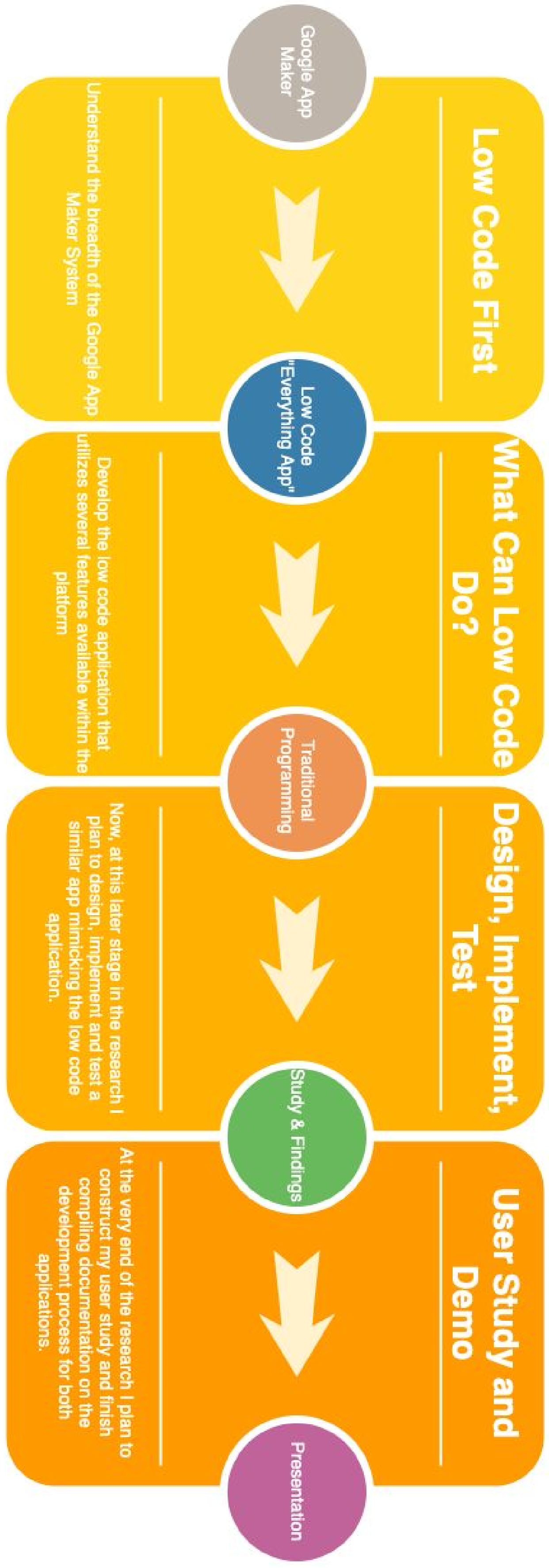
Google App Maker
Low Code First
Understand the breadth of the Google App Maker System
Low Code "Everything App"
What Can Low Code Do?
Develop the low code application that utilizes several features available within the platform
Traditional Programming
Design, Implement, Test
Now, at this later stage in the research I plan to design, implement and test a similar app mimicking the low code application.
Study & Findings
User Study and Demo
At the very end of the research I plan to construct my user study and finish compiling documentation on the development process for both applications.
Presentation