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Competitive Analysis

One of the most similar products to what I plan to create is the iOS and Android app, Photomath. It largely inspired my idea for the project and a lot of the features that I plan on having. Its main features include computing various mathematical expressions, including fractions, exponents, logs, and radicals, as well as solving simple linear equations and systems of linear equations. I think that one of the strengths of this app is that it has a diverse feature set that can work with most forms of mathematical expressions that it could be given. I used this app, and was impressed with its speed and accuracy, as well as its having a relatively nice user experience. Another one if its features that I think was a good idea was its ability to make slight changes if it almost recognizes an equation correctly, but reads a single digit incorrectly. I think that one of its weaknesses is that it lacks any way to visualize math through things like graphing. Further, it has no good way of dealing with math it does not understand that the user might want to know more about. It also cannot do anything with plain text, which could make for some interesting and useful features.

Another similar app that I found was mathpix. This app is like Photomath in a lot of ways, but one key difference that I saw was that it offered a more educational way of showing the solutions to various problems, as it would show the user the different steps along the way. Another new feature that it had was the ability to display 2D and 3D graphs within the app. It can even do 3D graphs with vector functions parameterized by some other variable, which I thought was cool. This app didn’t have any noticeable anti-features, except for that it was harder to edit inputs if the camera read it wrong. For me, this app inspired some features that I think it would be interesting if my app had, although they would be rather hard to achieve. I think it would be cool if my app had more interactivity with functions that it graphed – like it would bring the math on the page to life in a way.

A third similar app that I studied allows the user to answer various homework questions, including mathematics through their phone’s camera. I think that the variety of inputs it could recognize and successfully deal with were a big plus with the app. Since it had a database built in, it could access it quickly and efficiently with the different inputs that it was given. I think that this also led to one of its weaknesses – once it understood the input, it gave a very simple explanation of its answer or how to solve it. It did not let the user interact with the input.

I think that these apps are successful in their own way and are all in fact very similar. From looking at all of them, I learned that I want my app to have a decent amount of interaction with the inputs after my program converts the picture into an equation it can work with. I think that this would lead to a more fun user experience, and my app being generally easier to use. Another app that I think would be helpful would be the ability to deal with a variety of inputs, which would make it harder to create my own algorithms to recognize all of them, so I would need to find a balance between that and the user experience.