Physics Tool Schematics

Help

Settings

Simulation

Lesson5

Lesson4

Lesson3

Lesson2

Lesson1

Unit 1-Kinematics

Learn

Conversion

equals.java

EquationSet.java

EveryButton.java

Workspace

Main Activity

Distance

Mass

Project Purpose-

To make a physics tool that both helps students with physics and teaches them. This tool allows users to simply plug in values and get an answer from complex physics equations, in order for students to double check their work, and to find their mistakes quicker. It also includes many common conversions people studying physics often need, so they don’t need to look up the conversion factors. Overall, my aim for this app was to have a tool that a physics student could rely on to execute calculations and make their lives easier.

Users can run this app on their android device, to operate, they only need to touch the screen to engage the buttons they wish. There is a help page that tells the user how to use the app. In the workspace, once an equation is selected using the choose equation button, the user needs to tap on the variable fields and input using the number pad at the bottom of the screen (the calculator’s). The apk is available at <https://drive.google.com/drive/folders/0Bygp8t-edKyLeExZZlBFOU0xUGM?usp=sharing> for download.

Progress Reports

|  |  |  |
| --- | --- | --- |
| 29/03/2017 | Starting creating app design |  |
| 30/03/2017 | Working on workspace part of my calculator, design and some coding just to get a few buttons and text fields |  |
| 31/03/2017 | designing equations and making equation list and program that reads equation list and outputs data in desired manner |  |
| 03/04/2017 | programming calculation class that calculates formulas |  |
| 04/04/2017 | Programming calculator's calculation class. |  |
| 06/04/2017 | Started creating settings activity and updating main menu |  |
| 07/04/2017 | Designing app's workspace to fit all screens with a relative layout to produce a consistent user experience. |  |
| 10/04/2017 | Made equation solver better incorporated storing values into variables for later use. |  |
| 11/04/2017 | Started making more graphical equations to be displayed. |  |
| 12/04/2017 | Fixing bugs with trig functions in calculator |  |
| 13/04/2017 | Still fixing bugs with trig functions in calculator |  |
| 17/05/2017 | Added support for multiple negatives consecutively, added resources for many equation including pictures and array resources. Started making calculator calculate things in fractions by default, to increase reliability and accuracy. |  |
| 26/05/2017 | Continued working on making fractions default and making fractions better as well as watching tutorials on creating visual simulator. | plit  main(StrLng  String String  String  retu rnVaI ue s  currentChar•,  String first  St r L buffer  String secon |
| 05/27/2017 | Adding conversions |  |
| 06/01/2017 | Continued adding conversions, added lessons, added simulation for projectile motion. |  |
| 06/03/2017 | Added more equations |  |
| 06/04/2017 | Finishing touches, fixing bugs. |  |

Next Steps:

I want to include more lessons, simulations and conversions in the future. Also, I want to include a collaboration space where users can create classrooms and interact with each other, and solve problems together. As well as making the calculator automatically use fractions for calculations for more precise results, and adding exact sin and cos values.