

Project: Multiview and Multifunctional Calculator
Team Moc

1. Calculator Modes With Different Views

1.1. Basic View: Arithmetic Calculator

- 1.1.1. The user **shall** be able to add, subtract, multiply, and divide real numbers.
- 1.1.2. The user **shall** be able to use parentheses.
- 1.1.3. The user should be able to exponentiate numbers.
- 1.1.4. There shall be buttons to input operators and operands.

1.2. Scientific View: Calculator

- 1.2.1. The user should be able to use sin, cos, and tan.
- 1.2.2. The user should also be able to use inverse trig functions.
- 1.2.3. The user should be able to store variables.
- 1.2.4. The user should be able to use common mathematical constant.

1.3. Programmer View: Base Converter Calculator

- 1.3.1. The user should be able to convert between decimal, binary, hex, and octal.
- 1.3.2. The user should be able to use bitwise 'and', 'or', and 'xor' operators.
- 1.3.3. The user should be able to use left and right shifts.

2. Calculator Conversions

2.1. Unit Converter

- 2.1.1. The user **shall** be able to convert units for mass, length, volume, area, and temperature

- i. Sub-screen A: mass conversions
- ii. Sub-screen B: length/area conversions
- iii. Sub-screen C: volume conversions
- iv. Sub-screen D: Temperature - C, F, K

- 2.1.2. Functionality: Typing in one box for one unit should update the other automatically

3. Other - *Optional* Built-on Features (time-permitting)

3.1. The user should be able to view and share calculation histories

3.2. Secret area

- 3.2.1. Typing a code into the arithmetic calculator should open a secret image gallery

- 3.2.1.1. The user should be able to add, view, share, and remove images.
- 3.2.1.2. The gallery should be encrypted.
- 3.2.1.3. The app shall ask for password on first install.
- 3.2.1.4. The user shall be able to change the password in the secure area.

3.3. Arithmetic Quiz

- 3.3.1. The app should show random basic arithmetic problems.
- 3.3.2. The quiz should have a timer.
- 3.3.3. The user should be able to see their high score.

3.4. Date calculation

3.4.1 The user should be able to add and subtract dates.

3.4.2. The user should be able to add and subtract durations from dates.

3.5. Different themes

3.5.1. Users should be able to choose from a light or dark mode.