Class Identification

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GUI Classes

**LoginScreen**

* Contains Java Swing text fields for login authentication
  + Username
  + Password
* Contains Java Swing buttons for navigation to other windows
  + “Login” button to use calculator
  + “Register New User” button for new user registration

**CalculatorScreen**

* Contains Java Swing buttons for performing calculations as well as navigation to other windows
  + Keypad buttons
  + Operation buttons
  + “Account” button for navigating to Account Settings
  + “Logout” to logout

**RegisterScreen**

* Contains Java Swing text fields for registering new users
  + Username
  + Email
  + Password
  + Password Confirm
* Contains Java Swing buttons for navigation to other windows
  + “Register” button to confirm Registration

**PasswordRecoveryScreen**

* Contains Java Swing text field for entering email
* Contains Java Swing button to confirm

**AccountSettingsScreen**

* Contains Java Swing text fields for changing email and password
  + Email
  + Current Password
  + New Password
  + New Password Confirm
* Contains Java Swing buttons for navigation to other windows
  + “Register” button to confirm Registration

**ErrorScreen**

* Notifies user of various errors (e.g. invalid password, invalid email, etc.)

Interface Classes

**Interface EmailHandler**

* Methods to:
  + Generate passwords for password recovery
  + Send email using Java Gmail server API

**Interface DatabaseHandler**

* Methods to:
  + Perform login authentication
  + Register new user
  + Get account info
  + Change email
  + Change password
  + All using Java JBDC with MySQL database

Regular Classes

**ComputeEngine**

* Methods to:
  + Convert expression from *infix* to *postfix* (Shunting Yard Algorithm)
  + Compute expression