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Final Project Report

For my final project I created a conversion calculator app in J2ME. I made two reusable libraries in order to do this, 'Convertible' and 'ButtonItem'. I then used both libraries by creating a MIDlet form with user input for initial value, initial units, and desired new units. The form also includes a 'Calculate' button, making use of the 'ButtonItem' class, as well as a text display of the converted value of the original measurement.

The 'Convertible' library calculates the conversions between the supported measurement units through a single public method: `convertTo(String unit)`. This method evaluates the given string and calls the appropriate private conversion method. The return value will be the converted measurement, unless the string is not recognized by the library or if you cannot convert between the current unit and the provided one, in which case the method will return -1. The supported units are: cups, tablespoons, teaspoons, ounces, gallons, liters, pints, pounds, kilograms, grams, centimeters, meters, inches, feet, yards, miles, kilometers, minutes, hours, days, and weeks. When creating this reusable library I considered adding the capability to correct slight mistakes in user input of the units. However, when dealing with abbreviations such as 'tbsp' and 'tsp', which are both valid, I was unsure how I could go about making these corrections while still ensuring the desired units are used. I decided instead to implement my app with drop-down menu selections for the units, thus eliminating, for my purposes, the possibility of incorrect user input. That said, the library will accept the incorrect input and simply return -1 when attempting to convert.

The 'ButtonItem' library is relatively simple. It extends `CustomItem`, accepts an image to display, and implements the `paint` method and a `keyPressed` method. I also pass the MIDlet form as a parameter in the constructor. This is so that the `keyPressed` method can change the form that the item was created through instead of just altering the item's own appearance.

The biggest problem that I ran into in creating the application itself was the functionality of this 'ButtonItem'. I tried several different options, but a button just seemed to be the most logical and user-friendly. However, J2ME doesn't directly support any button objects, you are forced to create one on your own, and I was pretty clueless on how to do that effectively. After some googling I was able to patch the above-mentioned 'ButtonItem' library together, but it is still pretty simplistic. It would have

been nice to be able to create a button, write my desired text on it, etc, etc as you can in a Java GUI. Instead I went through several online pictures of 'Calculate' buttons that I could save as images to use for the 'ButtonItem'. Like I said, this doesn't give exactly the java button feel that I had hoped for, but it was certainly the best option that I came up with.

Summary Text

Converts unit measurements based on user input.

Screen Shot

