# Overview

The program will run a window, with a form that will allow the user to enter numbers and operators to perform calculations. As the user clicks the buttons the numbers and operations will be added to a register that will be used to attempt to perform a calculation once the user clicks enter. Clicking the ‘File’ dropdown menu, the user will then be able to click ‘Exit’ to terminate the program. Clicking ‘Edit’ the user will be able to click ‘Undo’ to undo the last operation. If no numbers or operators have been clicked the register is empty the ‘Undo’ menu item will be greyed out. Clicking ‘Help’ then hovering over language will allow the user to select one of three languages available. Clicking ‘Help’ then clicking ‘About’ will display a quick overview of the Calculator program.

# Assumptions

* Users will enter logical operations into the calculator.
* Users who speak English, Chinese or French will use the calculator.
* Users will not need advanced calculator operations like exponents or square roots; e, log, ln etc.

# UML

# A screenshot of a cell phone Description automatically generated

# Justification for Language Selection

The language selection was based on the regions to which the application was to be deployed. In North America, the most common spoken language is English, followed closely by Spanish, and then French (Dylan, 2019). Because English and French make up two of the top three languages the Calculator application would be usable by a majority of people in North America. Bias was eliminated from the language choice for North America by researching how to appeal to the most wide-ranging group of people in the North American region.

The most spoken language in Europe is Russian followed by German then French and English. Although adding a Russian option to the language selection would have made the application accessible to those people, adding up English speakers and outpaces the number of Russian speakers in Europe by about 30 million people (Clarke, 2019) so leaving just the two options of English and French keeps the application simple while appealing to the most people in Europe.

In Asia, the spoken language by far is Chinese. Having menu options that display how to navigate the application in Chinese is a must if the application is going to deployed to Asia. Within the Chinese language there is a family of dialects of different types of Chinese, so Mandarin was chosen as the Dialect since it is the most widely used (Madry, 2020).

The languages chosen were grounded in accessibility, and usability and bias were eliminated by looking at the facts of how widely used the languages of each region are. Although it may have made sense to add a Russian language option for Europe, almost half of the population of Europe are bilingual so there is a good chance that many of the native Russian speakers will know either English or French thus eliminating the need to support an additional language (Piller, 2012). That being said a good future enhancement for the app would be complete language support for all languages to further eliminate bias.

References

Clark, M. (2019, September 11). The 10 most spoken languages in Europe. Retrieved from https://www.tandem.net/10-most-spoken-languages-europe

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Piller, I. (2012, July 18). Multilingual Europe. Retrieved from https://www.languageonthemove.com/multilingual-europe/