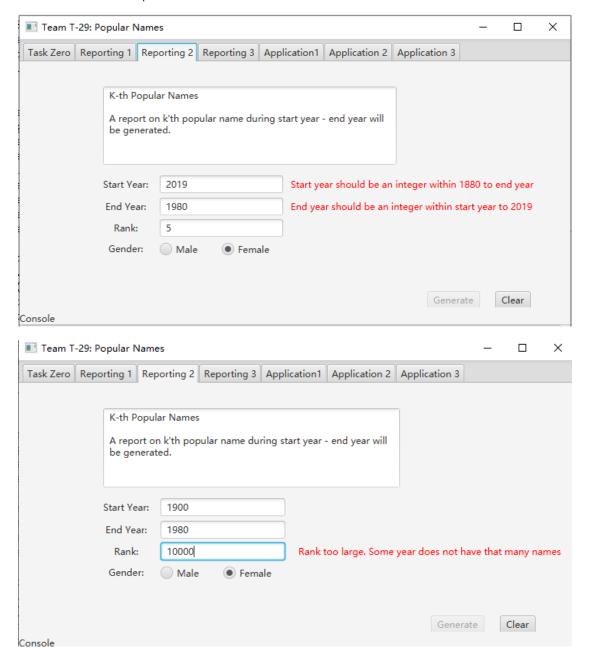
WANG, Zeyu's notes

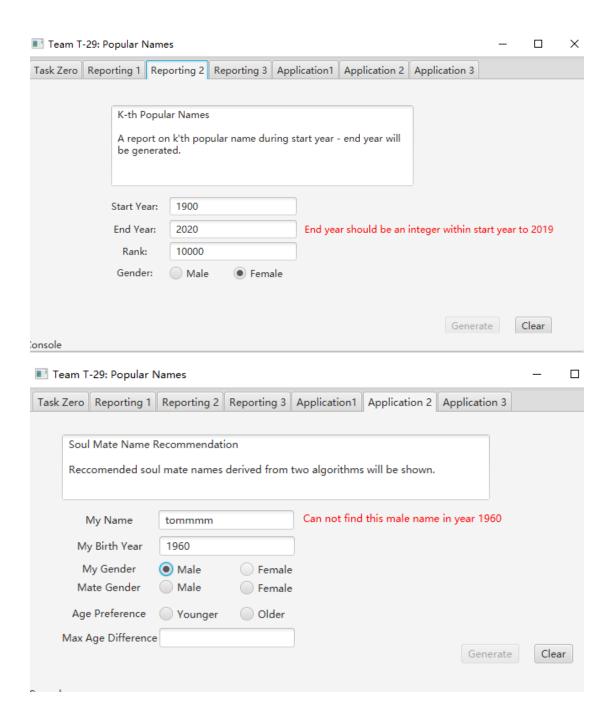
1. Characteristics:

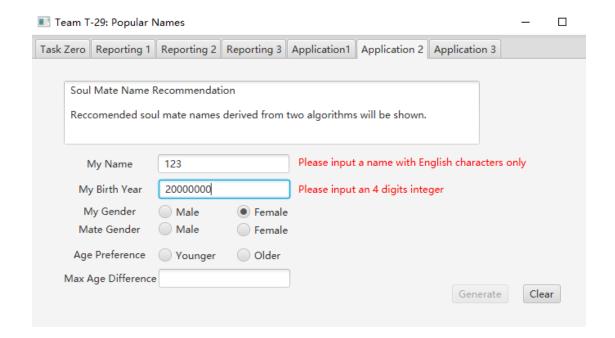
Realtime Input Checking Logic

I developed an automatic input checking function using boundary class (InputChecker classes in my source code) for my tasks. If the user input is invalid, for example, the input year is not between 1880 and 2019, it will disable the generate button and show a corresponding warning message next to the invalid input. This will guarantee that no input can actually go into the system and cause exception or crash the software.

Here are some examples







2. Algorithm Analysis

My recommending algorithm runs as follows

- (1) First according to the user's age preference calculate the period to analyze (e.g., if user prefer a younger soulmate who is at most 10 years smaller than him, the period will be the user's birth year -10)
- (2) For each year in the period, find the rank of user's name in that year, and then calculate a range (in current setting, range = myRank / 100 + 2) and discover all names in that year that is ranked within user's rank range till user's rank + range.
- (3) Sort all the names discovered for this period by the total number of being discovered and the first one will be recommended because this name is "close" to the user's name.

The range need to be set appropriately because:

For names with high ranks, their ranks in recent years are more likely to be similar (e.g., Mary is always the top-ranked name in 1900's and Dorothy is always ranked around 3rd), thus the range needs to be smaller to find the best matching.

For names with low ranks, their ranks may be very distinct in consecutive years, thus the searching range needs to be larger to find a good matching.

Also the range should not be too large otherwise the program will run too slowly.