* One problem is that of finding out the matches for the 100 physicians and to find their country in which they speak the language. Another problem is that calculating the probability of participants matching based on language fluency.
* Solutions that are being implemented within the project are that of utilizing a string array for both languages and specializations. And then proceeds to ask the user for their preferred country then randomly selects a country based on their language. After that, it calculates the probability for the random country and their preferred.
* The calculations that are involved in this program are that of probability of the country that is being chosen. The calculation follows as one of the languages could be randomly matched with the possible 70 countries, (1.0 ÷70.0) for the first probability. And the second probability is that of their preferred country in relation with their language, ((1.0 ÷7.0) ÷ 70.0). The other probability that is followed with this is that of having one of the physicians be placed in the random country which is done by multiplying the first probability with that of 100. (probability\_1 × 100.00).
* The program objective is to assist the user with providing accurate calculation of the probability of being assigned a country based the user input of their language fluency, while also giving the probability of their own preferred country. With user input the program can generate a random selection from the various countries assign and calculate the percentage of probability.
* Discrete structure is implemented by the srand function to generate a random number which is assigned to a specific country, also with the probability as it takes the sample size and divides it by the number of options in this case being 1/70 or 1.43% or in the case of being assigned their preferred country it would be (1/7)/70 or .20%.
* The limitations on the program would have to be it does not consider the user being bilingual or fluent in more than one language this changes the probability percentage as the user would have a larger sample size to being assigned their language. Another limitation is that of having the individual being limited to only one single language and not being given the option to be fluent in more than one language.
* The program could be improved by asking the user if they are fluent in more than one language with a Y or N question, and allowing taking more than one language into account the percentage changes. By giving the user the ability to choose more than one language it would increase the probability of being chosen in a country that they can speak fluently the native language.
* **Pseudo code**

Displays specializations to choose from

User chooses fluent language

Displays languages to select

Displays options of preferred country selected

If user country == random country

Randomly chooses country depending on user input

If(true) displays probability of being assigned country

If(false) displays probability of assgiend random & preferred country

* **Flowchart**

Included different page