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This program uses a match selection based on two variables, these are language and specializations. Five languages are generated which are connected to 10 different countries, there are a total of 5 specoalizations to choose from. The country variable depends on the match based on the language and specialization, there are a total of 50 countries listed. Once a country is diplayed we display to probability of that specialization and language. The probability comes from taking the total amount of countries and total amount of specializations. The task that I am is solving is creating a program that uses a match selected based on the language and specializations based on the user, and determining the matched probability of that language and specialization. I am using discrete structure concepts like when asking for the perferred language I use if/else if statements to display the language they have selected. I displayed the menus and used if/else if statements to display the user input. With a specialization selected I use 2-d array to store and hold all the countries that could possibly be matched with their selection. For the country I am using a random number generator. Then for porbability I use the total number of languages and total number of countries, and multiplying the two, this gives me the sample space. The limitations of this program include the user inputting option that is not displayed. To fix this I can possibly implement a if statement with a loop so if they enter an option out of range it will loop and display the options with an error message prompting the user to select again.

**Pseudocode**

// Goal: Create a program that uses a match selection based

// on the language and specialization the user selected. Once

// a country is generated, determine the probability of someone

// matching based on the language and specialization.

// #include <iostream>

// #include <string>

// #include <cstdlib>

// #include <ctime>

// using namespace std;

// int main()

// List the variables needed that will be

// used later on (language, specialization)

// Find out what language the user is most fluent in.

// Print out a list of 10 languages that the user

// can choose from.

// Once user enters an option from above, print out

// their choice of language.

// Using if/else if statements to print out the

// language they have selected

// Find out what the user's specialization is.

// Print out a list of 5 specializations that the user

// can choose from

// Once the user enters an option from above, print out

// their specialization.

// Using if/else if statements to print out the

// specialization the user has selected

// Create a 2-d array to connect one language with a

// different country. With 10 rows and 5 columns,

// this will hold a list of 5 countries for each of

// the 10 languages

// Create a random number generator

// to generate a different country no matter

// if the same options were chosen

// Initialize random seed

// Generate random country from the language selected

// Print Sample Space

// Display the math used to calculate the sample space

// Print out the matched probability by using the sample

// space we calculated.

// system("pause");

// return 0;