

Lab 5: Partners

You will write a program that receives the names of several people on a team. It will then sort the people, count the number of possible pairings of them, and output every one.

For example, it might look like this:

```
How many people are there? 4
Please enter the names of those people:
  Dana
  Bob
  Alice
  Charlie

Thank you. There are 6 possible pairings. They are:
  Alice & Bob
  Alice & Charlie
  Alice & Dana
  Bob & Charlie
  Bob & Dana
  Charlie & Dana
```

Here are some hints:

- The formula for counting possible pairs from among n people is $n \times (n - 1) \div 2$.
- You will probably want to store the people's names in an array of strings. First allocate the array when you know how big it needs to be, then do a for loop through the array to gather all the names from the user.
- The people should be alphabetized before printing out the pairs. You can do this via the `Arrays.sort()` method. In order to use `Arrays.sort()`, you must `import java.util.Arrays;` before beginning your class block.
- You will need to use nested for loops to print out the pairings.
- Try to fit everything you can into subfunctions. A professional programmer might have only two lines in his or her `main()` function!
- Your program should behave reasonably well if the user enters 0 or 1 as the number of people, or even a negative number. In the latter case, it should just politely inform the user that a negative number isn't allowed, and terminate. To immediately terminate the program without executing any further, run the instruction `System.exit(1);`.

This class should be called `Partners`.