

CSE 143

Homework 3

(Stable Marriage)

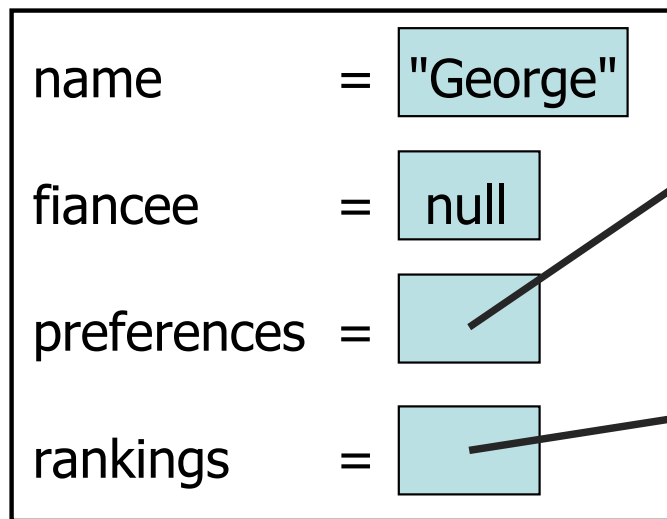
slides created by Marty Stepp

<http://www.cs.washington.edu/143/>

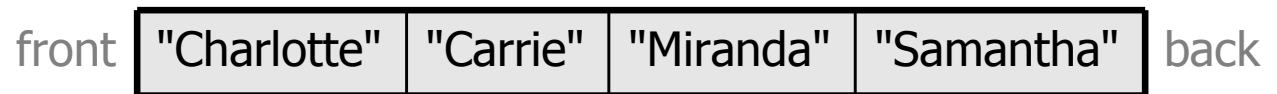
Person

- has a name, a reference to a fiancée, a reference to a Queue of names ordered by preference, and a reference to a Map of names to rankings

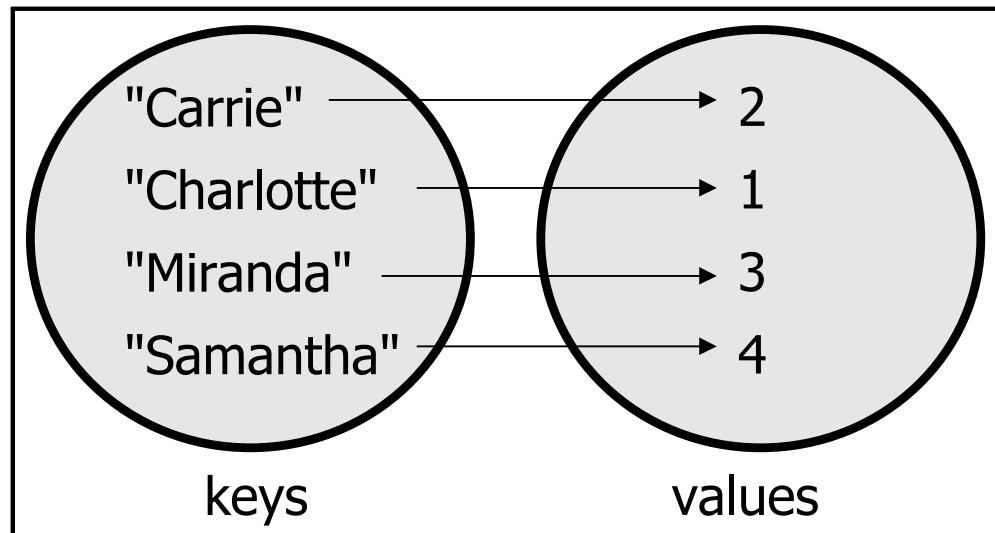
Person



Queue<String>



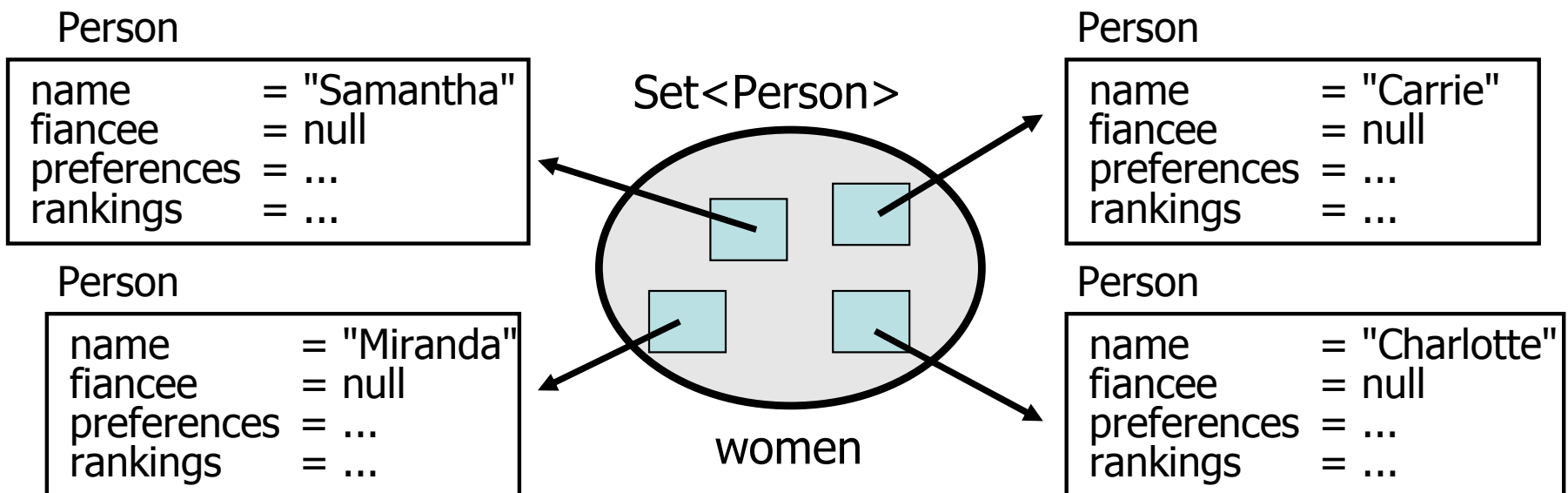
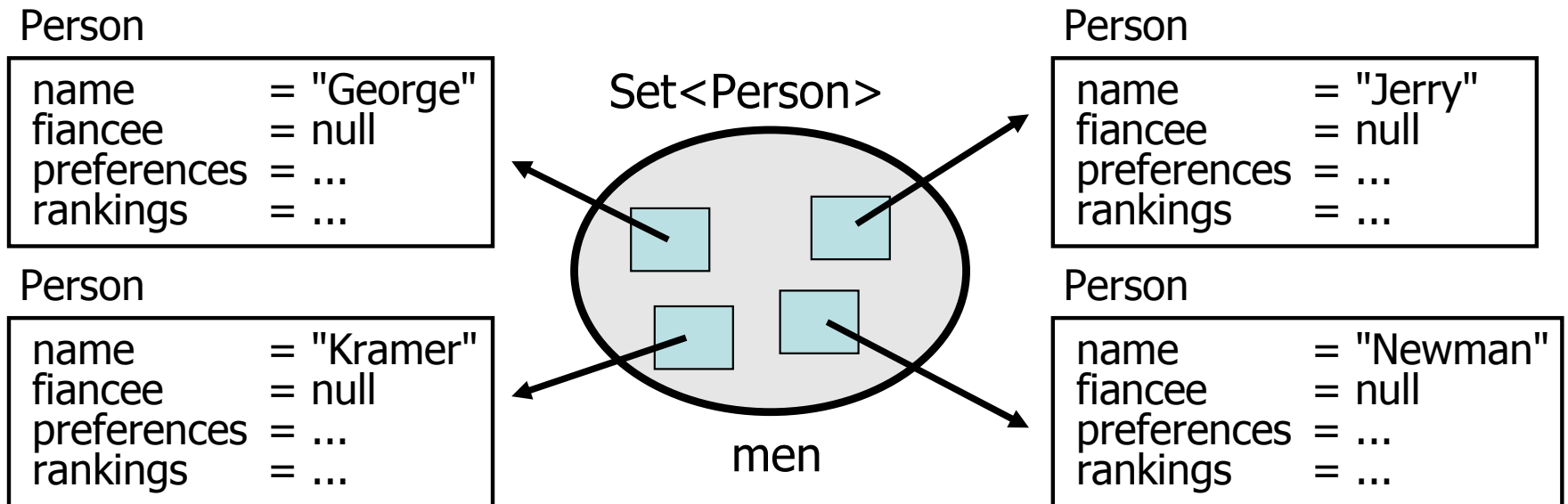
Map<String, Integer>



Note that "rankings" contains similar information to "preferences" but in a different format. Use either one depending on what you need.

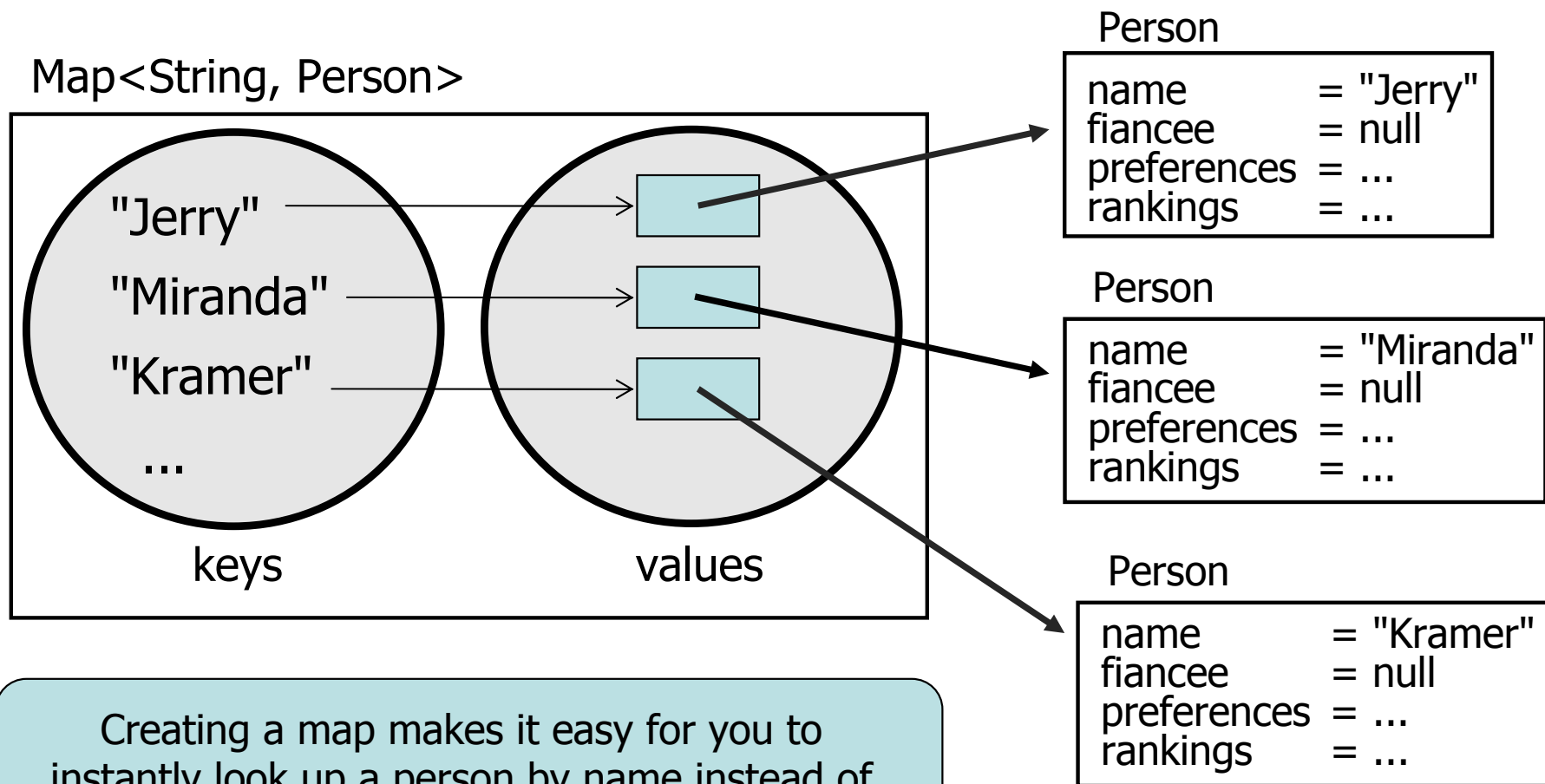
Set<Person>

- Your constructor is passed two Sets of Person objects



Map<String, Person>

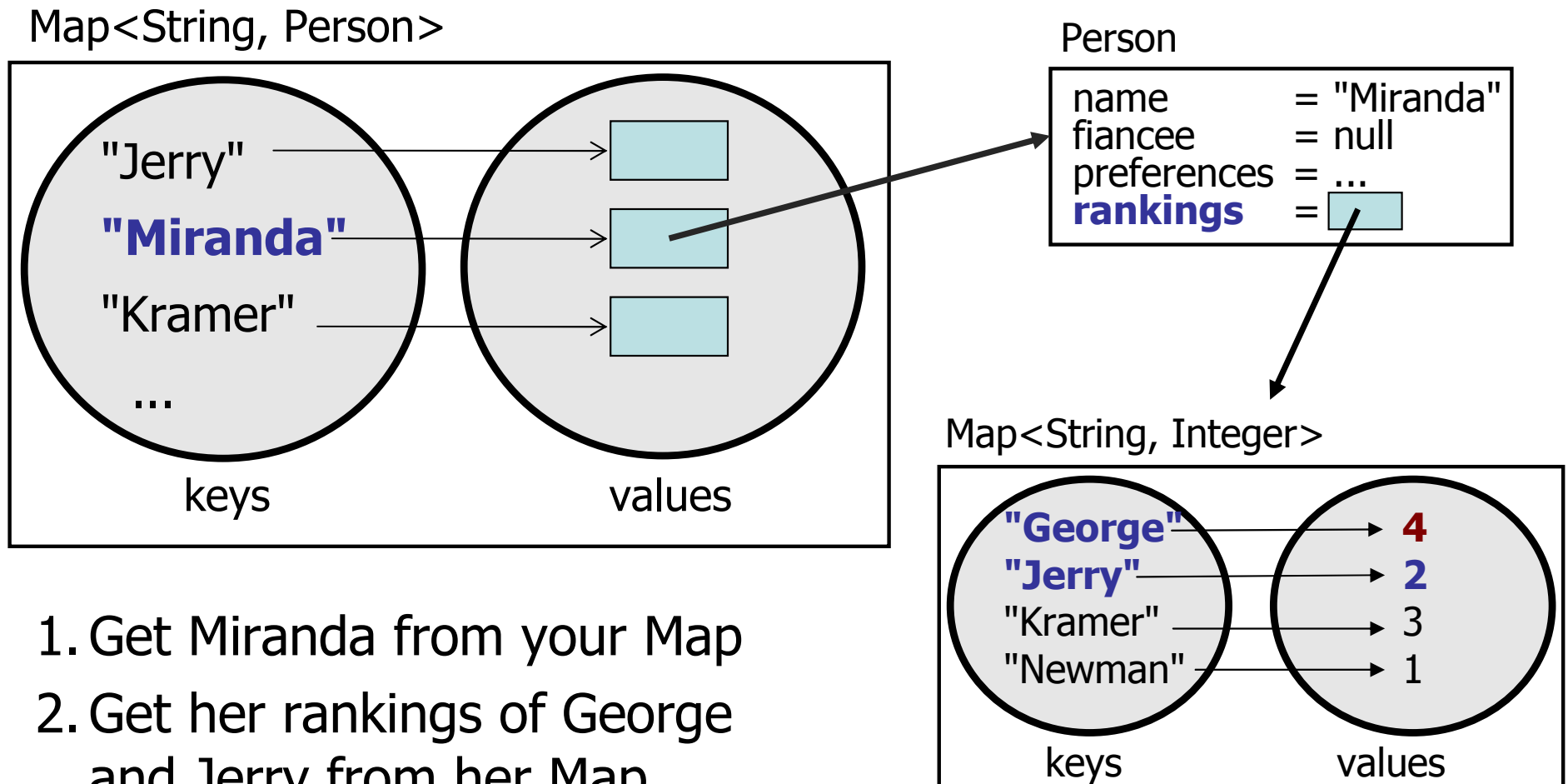
- Your MatchMaker should create a map from names to Persons



Creating a map makes it easy for you to instantly look up a person by name instead of having to search through the sets.

Gale-Shapley algorithm

- How do I know whether Miranda prefers Jerry or George?



Some pseudocode

- Suppose you have a `Person` variable named `p1` referring to the `Person` object representing George. How do you find out George's most preferred woman?
 - Look at the front of `p1`'s `getPreferences` queue.
- Suppose George's most preferred woman is currently Miranda, and that you have a `Person` variable named `p2` referring to the `Person` object representing Miranda. How do we find out how well Miranda likes George?
 - Look in `p2`'s `getRankings` map.
 - If you give this map a string (a name) as a key, it will give you an integer ranking as a value.
 - That integer is Miranda's ranking for George (1=best, 4=worst).
- How do I get this `Person` variable `p2` to find Miranda?
 - Your map can help you find a `Person` object by name.