



Java Software Developer: Pre-Interview Test

Instructions

Answer all questions electronically. Return your solutions to the recruiter.

Question 1: UniqueHashMap

Provide an implementation of `java.util.Map` named `UniqueHashMap`. `UniqueHashMap` is to provide all the features and behavior of `java.util.HashMap`, with one difference:

- `UniqueHashMap` is to enforce the constraint that each value in the map be unique. In other words, each value is mapped to by at most one key. If `UniqueHashMap.put()` is called with a value that already exists in the map, the old key should be replaced. For example, if the map contains:

```
"blog" => "glob"
```

then calling `put("blag", "glob")` would cause the mapping above to be replaced by:

```
"blag" => "glob"
```

`UniqueHashMap` may extend or delegate to `HashMap` if desired.

Question 2: Anagrams

Write a method with the following prototype:

```
public static boolean anagram(String str1, String str2);
```

The method should return `true` if the two arguments are anagrams of each other, `false` if they are not. For example, `anagram("glob", "blog")` would return `true`; `anagram("glob", "blag")` `false`.

You may assume that the input strings will contain only letters and spaces. Treat upper- and lower-case letters as identical, and ignore spaces.