Group 5

M08-A02

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When we started working on the Java Collections Framework, we realized there’s a lot more to it than just using ArrayLists for everything. In class and in the Oracle Java Collections Tutorial, we saw that different data structures are better for different jobs, so you really have to pick what fits your project best.

1. HashMap

One of the collections we could use is HashMap. In our game project, we think a HashMap makes sense for things like storing all the items a player picks up, or even matching keys to doors and puzzles. With a HashMap, you use a unique key (like the item’s name or ID), and you can instantly look up or update something without searching through the whole list. This is way faster, especially if the inventory gets big. The Java Tutorial mentions that HashMaps are good because getting or putting something is always quick, and you don’t have to deal with duplicate keys either.

2. HashSet

The second collection we could use is HashSet. We would use a HashSet to keep track of which puzzles the player already solved or which rooms they’ve visited, since a HashSet only keeps unique things and is super fast for checking if something exists. For example, we could just check the HashSet to see if a room or a puzzle is already completed. It saves us from having to loop through a bunch of stuff or worrying about duplicates. The JRebel Cheat Sheet also points out that HashSet is perfect when you want no duplicates and fast lookups, and Java’s tutorial on Set backs that up.

References

Oracle Java Collections Framework Tutorial,

<https://docs.oracle.com/javase/tutorial/collections/intro/>

JRebel Java Collections Cheat Sheet,

<https://www.jrebel.com/blog/java-collections-cheat-sheet>

Choose the Right Java Collection,

<https://javatutorial.net/choose-the-right-java-collection/>