Grouping Information

String Student1 = “A”

String Student2 = “B”

String Student3 = “C”

String Student4 = “D”

String Student5 = “E”

String Student6 = “F”

-Difficult to maintain as different variables

-Data-manipulation issues and unnecessary code

Collections vs. Arrays: Cannot really compare because different functionalities

1- With arrays you can only have one type of data

-With Collections you can have different types of data

Example-Store a string in the first position, number in the second, object in third

No limitation to storing in the collection

|  |  |  |  |
| --- | --- | --- | --- |
| String | Number | Object |  |

2- With arrays you can declare the number of elements and it will allocate them for those elements

-With collections there is no limit to number of elements you can add

Example-If you are storing five elements in memory the amount of memory used is five elements

3- With arrays if you want to compare, sort or manipulate arrays, you do it yourself

-With collections they have a variety of methods to manipulate

3 basic types of collections

-Lists: a list of things (classes that implement lists)

-Sets: unique things (classes that implement set)

-Maps: things with unique ID (classes that implement map)

Subtypes of Collections

-Ordered

-Sorted

-Unordered

-Unsorted

The first implementation of a list is an array list, 2nd is a vector, 3rd is a link list

Set= hash set, linked has set, tree set

Hash Map= hash map, hash table, linked hash map, tree map