Maps
• Maps are another way of organizing data
• Keys and Values
  – Each key maps to a value
  – Some keys can map to the same value
  – Can change the value a key maps to

Example
• Each student could be mapped to their favorite ice cream flavor
Implementing a Map

• We will use TreeMap in Java
  – Will also use HashMap, another implementation
• Example:
  TreeMap<String, String> fav = new TreeMap<String,String>();
• Keys map to values

To use a Map

• Put in a key and its value
  fav.put("Forbes", "Strawberry");
• Get a value for a key
  val = fav.get("Forbes");
• Change value for key
  fav.put("Astrachan", "Coffee Mocha");
• Get all the keys as a set
  Treeset<String> ky = fav.keyset();

Change Astrachan’s value

Value could be a set

Students | Ice Cream Flavors
---------|-------------------
Astrachan | Coffee Mocha
Sun | Chocolate Chip
Rodger | Strawberry
Forbes |

Students | Ice Cream Flavors
---------|-------------------
Astrachan |
Sun | Chocolate Chip
Rodger |
Forbes |
Forbes | Coffee Mocha
Strawberry |
Blueberry |
Vanilla |
Coffee Mocha |
Let’s go back to ClassScores

• Find all the modes in an array of ints
• This time solve it using a map