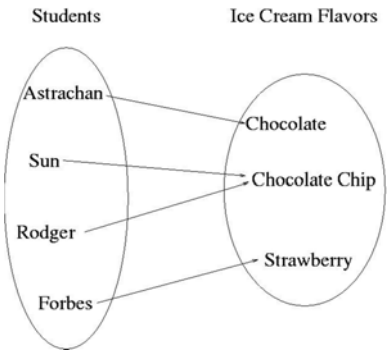
CompSci 100e
Program Design and Analysis II



February 3, 2011

Prof. Rodger

Announcements

- APT 0210 due next Thursday!
- Assignment Prestidigitation due 2/8

Debugging

- What can you do when your APT/program doesn't work?
  - Consulting hours
  - Get Sleep – rest those eyes
  - Debug
    - Add print statements
      - APTs – output right away "Starting new problem"
      - Add in focused output (inside a loop (if k=mulitple of 10, print)
    - Make it simpler – add a main and test with smallest case it doesn't work for
    - Trace simple case by hand
    - Test each method with input and output

Assignment Prestidigitation – now due Tuesday, Feb 8

- Getting Started – no snarf
- Create Java Project
  - Create Class file
- Use previous code – cut and paste
  - Read in input from file
- Copy data files

Sets - Operations

- What operations can you do on a set?

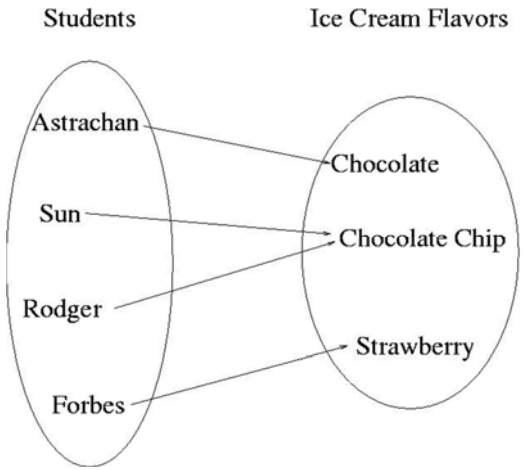
- Classwork 3

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");
```

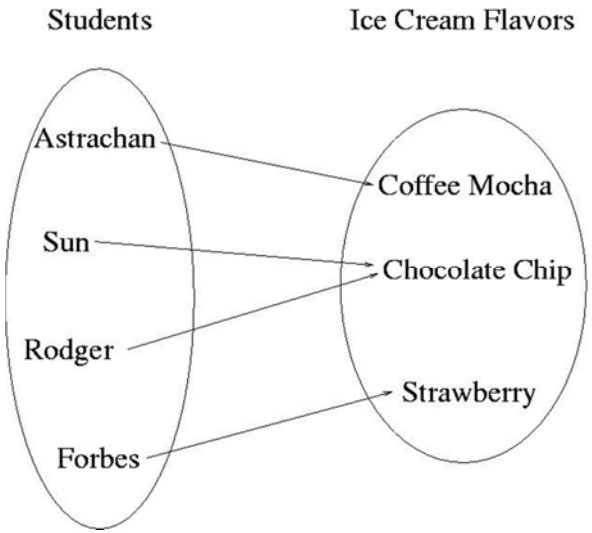
- Change value for key

```
fav.put("Astrachan", "Coffee
  Mocha");
```

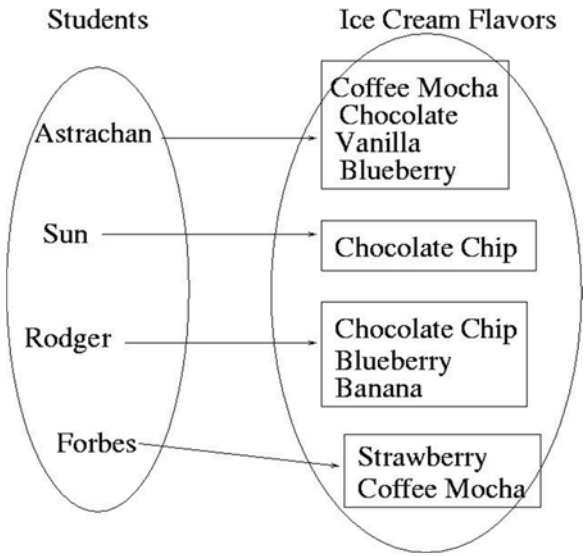
- Get all the keys as a set

```
 Treeset<String> ky =
fav.keyset();
```

Change Astrachan's value



Value could be a set



Let's go back to ClassScores

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