

# Today

- For loop practice
- Collections
- Search

# Short Questions?

# Quiz

# Loop Example I

Write a method that will indicate whether all of the characters in a string are lower case

- What is the method prototype?

# Loop Example I

Write a method that will indicate whether all of the characters in a string are lower case

- What is the method prototype?
- What is the method implementation?

# Loop Example II

Write a method that takes two positive integer inputs and returns their greatest common divisor.

- You may assume that the first integer is greater than or equal to the second integer

# Collection “Class” (Interface)

- We often have to represent a group of objects of the same type (class)
- A Collection is our high level perspective on representing groups
  - There are many different subtypes of collections
- **Common operations for a Collection<E>:**

```
boolean add(E item)           // Add a single item

boolean addAll(Collection<E> items) // Add a group of items

void clear()                  // Delete all items

boolean contains(E item)     // Check if an item is within Collection

int size()                    // Give the number of objects in Collection
```

# Subtypes of Collection

Two common subtypes are:

- Set
  - No duplicates allowed
  - No indexing (no specific order)
- List
  - Duplicates allowed
  - Indexed (starting from 0)
  - ArrayList is one implementation of a List



# Iterators

An iterator is a class that allows one to systematically move through all of the objects that are contained in a Collection

```
ArrayList<Integer> list = new ArrayList<Integer>;  
list.add(5);  
list.add(17);  
list.add(3);  
  
for(Integer i: list)  
    System.out.println(i);
```

# Checking the Spelling of Words

Write a program that:

- Reads in a dictionary of valid words
- Repeatedly takes user input of words & states whether the word is in the dictionary or not

# Wrap Up

Due:

- HW 6: Due Thursday
- Project 3: Due Tuesday
- Project 4: Released

Next time:

- More search
- Week from Wednesday: Exam 2