More on Strings

- Strings are indexed starting at 0
- Example: ‘word’

```
word
  0 1 2 3
```

- Use [num] – to refer to a particular character in word
- Use [x:y] to refer to a slice of the string starting at position x and up to but not including position y. Can leave out x or y.

Examples

```
phrase = "Duke Blue Devils"
print phrase[0]
print phrase[-3]
print phrase[1:3]
print phrase[5:10] + phrase[4:]
print (phrase[phrase.find('ev'):]).upper()
```
APTs

• An APT is one a system we have setup to let you focus on solving one method.
• Similar to javaBat
• Snarf the APT, test it until you get all green
• Run in Eclipse
• Solve some APTs now

Lists

• A list is a collection of objects
  scores = [99, 78, 91, 84]
  allAboutMe = [“Mo”, 25, “934-1234”]
• Lists are mutable – use [num] to change a value
• Lists are indexed starting at 0, or -1 from the end
• Functions: max, min, len, sum
• Slice lists [:]

List Examples

scores = [10, 9, 10, 8]
print scores
scores[2] = 5
print scores
print max(scores)
print len(scores)
print sum(scores)
print scores[1:]
print scores[1]

List before/after modification

score = [10, 8, 10, 9]
score[2] = 5
Processing List Items

- Process all the items in a list, one item at a time
- Format: 
  ```python
  for variable in list:
      block
  ```
- Example:
  ```python
  sum = 0
  nums = [6, 7, 3, 1, 2]
  for value in nums:
      sum = sum + value
  print sum
  ```

Copying vs aliasing

```python
names = ['jo', 'mo', 'bo']
club = names
team = names[:]
names[1] = 'flo'
print names
print club
print team
```