

UW CSE 190p Section

7/5, Summer 2012

Dun-Yu Hsiao

Before We Start

- Create an empty text file and save everything you try and get in it as a report for today.
- Include the following in the report file:
 - Your name and your teammate's name
 - The command scripts you run today
- Email to TA after class.
- As usual, work with your teammate and you are welcomed to ask!

Outlines

- List List List!
- List comprehension
- Function: `type(.)`
- Library: Matplotlib
- Library: NetworkX

More on List

- Insert/remove
- Find in list
 - in
 - Index

List Comprehension

```
>>> squares = []
```

```
>>> for x in range(10):
```

```
    squares.append(x**2)
```

```
>>> squares
```

```
[0, 1, 4, 9, 16, 25, 36, 49, 64, 81]
```

```
squares = [x**2 for x in range(10)]
```

- $[(x, y) \text{ for } x \text{ in } [1,2,3] \text{ for } y \text{ in } [3,1,4] \text{ if } x \neq y]$

```
combs = []
```

```
for x in [1,2,3]:
```

```
    for y in [3,1,4]:
```

```
        if x != y:
```

```
            combs.append((x, y))
```

List Comprehension

- To construct lists in a very natural, easy way
- $S = \{x^2 : x \text{ in } \{0 \dots 9\}\}$
- $V = (1, 2, 4, 8, \dots, 2^{12})$
- $M = \{x \mid x \text{ in } S \text{ and } x \text{ even}\}$

- $S = [x^{**}2 \text{ for } x \text{ in range}(10)]$
- $V = [2^{**}i \text{ for } i \text{ in range}(13)]$
- $M = [x \text{ for } x \text{ in } S \text{ if } x \% 2 == 0]$

- [j for i in range(2, 8) for j in range(i*2, 50, i)]

Function: type(.)

- When in doubt with the data type, just check!

Library: Matplotlib

- Plot and show
- Save
- Label and legend

Library NetworkX

- Create graph, draw
- Add/remove edge
- Add/remove node
- Node/edge numbers

Homework Questions?

Questions?