

Getting the list of values

- ◆ Making a lazy generator do some work

```
>>> recurse_until(lambda n: n==1, syracuse2, 9)
```

```
>>> list(_)
```

```
[9, 28, 14, 7, 22, 11, 34, 17, 52, 26, 13, 40,  
20, 10, 5, 16, 8, 4, 2, 1]
```

- ◆ The `_` is the previously computed value

Project Euler #14

- ♦ "Which starting number, under one million, produces the longest chain?"
- ♦ Try it without memoization.

```
>>> collatz = [len(list(recurse_until(lambda n: n==1, syracuse2, i)))  
... for i in range(1,11)]  
>>> results = zip(collatz, range(1,11))  
>>> max(results)  
(20, 9)  
>>> list(syracuse_iter(9))  
[9, 28, 14, 7, 22, 11, 34, 17, 52, 26, 13, 40, 20, 10, 5, 16, 8, 4,  
2, 1]
```

- ♦ Will this scale to 100? 1,000? 1,000,000?