

# List Comprehension: Concise List Creation

## Traditional Loop

```
prices = [150, 165, 148, 172]
doubled = []
for price in prices:
    doubled.append(price * 2)

# Result: [300, 330, 296, 344]
```

More Concise

## List Comprehension

```
prices = [150, 165, 148, 172]
doubled = [price * 2
            for price in prices]

# Result: [300, 330, 296, 344]
```

## List Comprehension Examples

### Basic transformation:

```
[x * 2 for x in prices]
# Double all prices
```

### With condition (filter):

```
[x for x in prices if x > 150]
# Only prices > 150
```

### String manipulation:

```
[t.lower() for t in tickers]
# Lowercase all tickers
```

### Math operations:

```
[x**2 for x in [1,2,3,4]]
# Squares: [1,4,9,16]
```

### With if-else:

```
[x if x > 150 else 0 for x in prices]
# Set low prices to 0
```