List Comprehensions

```
M = [[1, 2, 3], # A 3 × 3 matrix, as nested lists
 [4, 5, 6],
 [7, 8, 9]]
```

```
col2 = [col[1] for col in M]  # Collect the items in column 2
col2
```

```
[2, 5, 8]
```

```
M
```

```
[[1, 2, 3], [4, 5, 6], [7, 8, 9]]
```

```
[row[1] + 1 for row in M] # Add 1 to each item in column 2
```

```
[3, 6, 9]
```

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```
[row[1] for row in M if row[1] % 2 == 0] # Filter out odd items
```

```
[2, 8]
```

```
diag = [M[i][i] for i in [0, 1, 2]] # Collect a diagonal from matrix
diag
```

```
[1, 5, 9]
```

```
doubles = [b * 2 for b in 'spam'] # Repeat characters in a string
doubles
```

```
['ss', 'pp', 'aa', 'mm']
```

```
[sum(row) for row in M]
```

```
[6, 15, 24]
```