

# Chapter 22: List slicing (selecting parts of lists)

## Section 22.1: Using the third "step" argument

```
lst = ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h']

lst[::-2]
# Output: ['a', 'c', 'e', 'g']

lst[::-3]
# Output: ['a', 'd', 'g']
```

## Section 22.2: Selecting a sublist from a list

```
lst = ['a', 'b', 'c', 'd', 'e']

lst[2:4]
# Output: ['c', 'd']

lst[2:]
# Output: ['c', 'd', 'e']

lst[:4]
# Output: ['a', 'b', 'c', 'd']
```

## Section 22.3: Reversing a list with slicing

```
a = [1, 2, 3, 4, 5]

# steps through the list backwards (step=-1)
b = a[::-1]

# built-in list method to reverse 'a'
a.reverse()

if a == b:
    print(True)

print(b)

# Output:
# True
# [5, 4, 3, 2, 1]
```

## Section 22.4: Shifting a list using slicing

```
def shift_list(array, s):
    """Shifts the elements of a list to the left or right.

    Args:
        array - the list to shift
        s - the amount to shift the list ('+': right-shift, '-': left-shift)

    Returns:
        shifted_array - the shifted list
    """

    if s > 0:
        return array[s:] + array[:s]
    else:
        return array[-s:] + array[:-s]
```

```
"""
# calculate actual shift amount (e.g., 11 --> 1 if length of the array is 5)
s %= len(array)

# reverse the shift direction to be more intuitive
s *= -1

# shift array with list slicing
shifted_array = array[s:] + array[:s]

return shifted_array

my_array = [1, 2, 3, 4, 5]

# negative numbers
shift_list(my_array, -7)
>>> [3, 4, 5, 1, 2]

# no shift on numbers equal to the size of the array
shift_list(my_array, 5)
>>> [1, 2, 3, 4, 5]

# works on positive numbers
shift_list(my_array, 3)
>>> [3, 4, 5, 1, 2]
```