



Programming for Social Scientists

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Lists and loops

```
boats = ["Alias", "Ruffles", "Carmen", "Bandit", "Ripples", "Ruff Diamond"]
```



```
boats = ["Alias", "Ruffles", "Carmen", "Bandit", "Ripples", "Ruff Diamond"]
```

| Alias | Ruffles | Carmen | Bandit | Ripples | Ruff Diamond |
|-------|---------|--------|--------|---------|--------------|
| 0 | 1 | 2 | 3 | 4 | 5 |

```
➤ boats[0]
'Alias'
➤ boats[5]
'Ruff Diamond'
➤ boats[-1]
'Ruff Diamond'
➤ boats[6]
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
IndexError: list index out of range
```

```
boats = ["Alias", "Ruffles", "Carmen", "Bandit", "Ripples", "Ruff Diamond"]
```

| Alias | Ruffles | Carmen | Bandit | Ripples | Ruff Diamond |
|-------|---------|--------|--------|---------|--------------|
| 0 | 1 | 2 | 3 | 4 | 5 |

```
❖ boats[1:4]
['Ruffles', 'Carmen', 'Bandit']
❖ boats[:2]
['Alias', 'Ruffles']
❖ boats[-2:]
['Ripples', 'Ruff Diamond']
❖ boats[0:3]
['Alias', 'Ruffles', 'Carmen']
```

```
boats = ["Alias", "Ruffles", "Carmen",  
         "Bandit", "Ripples", "Ruff Diamond"]
```

```
def find_Ruff_Diamond(boats):  
    i = 0  
  
    while i < len(boats):  
        if boats[i] == "Ruff Diamond":  
            return(i)  
        i += 1  
  
    print("Ruff Diamond not found!")  
  
    return(-1)
```

```
print(find_Ruff_Diamond(boats))
```



```
boats = [  
    {"name": "Alias", "sail number": 525, "points": 60},  
    {"name": "Ruffles", "sail number": 57, "points": 29},  
    {"name": "Carmen", "sail number": 6043, "points": 75},  
    {"name": "Bandit", "sail number": 3333, "points": 35},  
    {"name": "Ripples", "sail number": 407, "points": 68},  
    {"name": "Ruff Diamond", "sail number": 155, "points": 107}]
```

```
> boats[4]  
{'name': 'Ripples', 'sail number': 407, 'points': 68}
```

```
> boats[3]["name"]  
'Bandit'
```

```
boats = [  
    {"name": "Alias", "sail number": 525, "points": 60},  
    {"name": "Ruffles", "sail number": 57, "points": 29},  
    {"name": "Carmen", "sail number": 6043, "points": 75},  
    {"name": "Bandit", "sail number": 3333, "points": 35},  
    {"name": "Ripples", "sail number": 407, "points": 68},  
    {"name": "Ruff Diamond", "sail number": 155, "points": 107}]
```



```
def find_winner(boats):  
    i = 0  
    lowest = 1000  
    idx = -1  
  
    while i < len(boats):  
        if lowest > boats[i]["points"]:  
            lowest = boats[i]["points"]  
            idx = i  
        i += 1  
  
    return idx  
  
print(boats[find_winner(boats)])
```

```
boats = [  
    {"name": "Alias", "sail number": 525, "points": 60},  
    {"name": "Ruffles", "sail number": 57, "points": 29},  
    {"name": "Carmen", "sail number": 6043, "points": 75},  
    {"name": "Bandit", "sail number": 3333, "points": 35},  
    {"name": "Ripples", "sail number": 407, "points": 68},  
    {"name": "Ruff Diamond", "sail number": 155, "points": 107}]
```

```
def find_winner(boats):  
    lowest = {"points": 1000}  
  
    for boat in boats:  
        if lowest["points"] > boat["points"]:  
            lowest = boat  
  
    return lowest  
  
print(find_winner(boats))
```

```
def find_winner(boats):  
    i = 0  
    lowest = 1000  
    idx = -1  
  
    while i < len(boats):  
        if lowest > boats[i]["points"]:  
            lowest = boats[i]["points"]  
            idx = i  
            i += 1  
  
    return idx  
  
print(boats[find_winner(boats)])
```



```
boats = [  
    {"name": "Alias", "sail number": 525, "points": 60},  
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    {"name": "Ripples", "sail number": 407, "points": 68},  
    {"name": "Ruff Diamond", "sail number": 155, "points": 107}]
```

```
import sys  
  
def find_winner(boats):  
    lowest = {"points": sys.maxsize}  
  
    for boat in boats:  
        if lowest["points"] > boat["points"]:  
            lowest = boat  
  
    return lowest  
  
print(find_winner(boats))
```

```
def find_winner(boats):  
    i = 0  
    lowest = 1000  
    idx = -1  
  
    while i < len(boats):  
        if lowest > boats[i]["points"]:  
            lowest = boats[i]["points"]  
            idx = i  
            i += 1  
  
    return idx  
  
print(boats[find_winner(boats)])
```