

CSc 110

For Loops and Lists

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for loops

- Another type of loop!
- Useful for iterating over or through lists, ranges, and data structures in general

Write a for-loop that produces the same output as the while-loop

```
values = [70, 20, 30, 35, 10, 7, 17, 50]
```

```
i = 0
while i < len(values):
    print(i)
    i += 1
```

Write a for-loop that produces the same output as the while-loop

```
values = [70, 20, 30, 35, 10, 7, 17, 50]
```

```
i = 0
while i < len(values):
    print(i)
    i += 1
```

```
for i in range(len(values)):
    print(i)
```

Write a for-loop that produces the same output as the while-loop

```
values = [70, 20, 30, 35, 10, 7, 17, 50]
```

```
i = 0
while i < len(values):
    print(values[i])
    i += 1
```

Write a for-loop that produces the same output as the while-loop

```
values = [70, 20, 30, 35, 10, 7, 17, 50]
```

```
i = 0
while i < len(values):
    print(values[i])
    i += 1
```

```
for i in values:
    print(i)
```

Looping through *indexes* compared to Looping through *values*

```
for i in range(len(values)):
    print(i)
```

```
for i in values:
    print(i)
```

Write the code

What code goes here?

Use a for-loop

With this input:

ben kai jim jane johanness

Produce this output:

average name length = 4.4

Write the code

```
user_input = input('Enter some names: ')\nnames = user_input.split(' ')
```

```
total = 0\nfor e in names:\n    total += len(e)
```

```
print('average name length =', (total/len(names)))
```

With this input:

ben kai jim jane johanness

Produce this output:

average name length = 4.4

Delerium Restriction

- Anyone been to Kings Island in Ohio?
- The [Delerium](#) (pictured) as a *min* **and** a *max* height restriction



Removing Elements

- **`list.remove(value)`**
 - Removes the first occurrence of **`value`** in the list
 - Raises an exception if the value does not exist in the list
- **`list.pop(index)`**
 - Removes the element at **`index`**
 - Raises exception if no value at **`index`**

Remove heights < 52 and > 76

```
people = ['jan', 75, 'jon', 78, 'kai', 40]
```

What should go here?

```
print(people)
```

Correct output:

```
['jan', 75]
```

Will this work?

```
people = ['jan', 75, 'jon', 78, 'kai', 40]
```

```
for e in people:  
    if e < 52 or e > 76:  
        people.remove(e)
```

```
print(people)
```

Correct output:

```
['jan', 75]
```

Will this work?

```
people = ['jan', 75, 'jon', 78, 'kai', 40]
```

```
for e in people:  
    if type(e) == type(1):  
        if e < 52 or e > 76:  
            people.remove(e)
```

```
print(people)
```

Correct output:

```
['jan', 75]
```

Will this work?

```
people = ['jan', 75, 'jon', 78, 'kai', 40]
```

```
for i in range(len(people)):
    if i % 2 == 1:
        if people[i] < 52 or people[i] > 76:
            people.pop(i)
```

```
print(people)
```

Correct output:

```
['jan', 75]
```

Will this work?

```
people = ['jan', 75, 'jon', 78, 'kai', 40]
i = 1
while i < len(people):
    if people[i] < 52 or people[i] > 76:
        people.pop(i)
    else:
        i += 1
print(people)
```

Correct output:

['jan', 75]

Will this work?

```
people = ['jan', 75, 'jon', 78, 'kai', 40]
i = 1
while i < len(people):
    if people[i] < 52 or people[i] > 76:
        people.pop(i)
        people.pop(i-1)
    else:
        i += 2
print(people)
```

Correct output:

['jan', 75]