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

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

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

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

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

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

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values = [70, 20, 30, 35, 10, 7, 17, 50]
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```python
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Write a for-loop that produces the same output as the while-loop

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

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

```python
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

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

total = 0
for e in names:
    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

MIN HEIGHT
52"

MAX HEIGHT
76"

Removing Elements

- **`list.remove(value)`**
  - Removes the first occurrence of **`value`** in the list
  - Raises an exception is 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

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

# What should go here?

print(people)
```

Correct output:

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

Will this work?

```python
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?

```python
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?

```python
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]
```