



STEM Digital
Academy

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Built-in Functions for Sets and Set Methods

Programming and Algorithms

Lecture by
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```
n = 3
for i in range(1,n+1):
    print("Hello World!")
```

Hello World!
Hello World!
Hello World!

What will we Cover?

- Using the set data structure
- Applying built-in functions to sets
- Using set methods

Built-in Functions for Sets I

- `min(set_name)` – used to find the smallest value in the set
- `max(set_name)` – used to find the largest value in the set

Example	Result
<code>set1 = {1, 2, 3}</code> <code>min(set1)</code>	1
<code>set2 = {1, 2, 3}</code> <code>max(set2)</code>	3

Built-in Functions for Lists II

- `len(set_name)` – used to find the length (number of entries) of a dictionary

Example	Result
<pre>set3 = {1, 2, 3} len(set3)</pre>	3

Examples I

Minimum value

```
set1 = {"white", "red", "blue", "red", "black"}  
print(set1)  
print(min(set1))
```

```
{'white', 'blue', 'red', 'black'}  
black
```

Maximum value

```
set1 = {"white", "red", "blue", "red", "black"}  
print(set1)  
print(max(set1))
```

```
{'white', 'blue', 'red', 'black'}  
white
```

Examples II

Length of a set

```
set1 = {"white", "red", "blue", "red", "black"}  
print(set1)  
print(len(set1))
```

```
{'white', 'black', 'red', 'blue'}  
4
```

Adding and Removing a Value

- `add(value)` – used to add a value somewhere in the set
- `remove(value)` – used to remove a desired value from the set

Example	Result
<pre>set4 = {1, 2, 3} set4.add(4)</pre>	<pre>{1, 2, 3, 4}</pre>
<pre>set5 = {1, 2, 3} set5.remove(1)</pre>	<pre>{2, 3}</pre>

Popping and Clearing Values

- `pop()` – used to remove an element from the set
- `clear()` – used to remove all elements from the set

Example	Result
<code>set6 = {1, 2, 3}</code> <code>set6.pop()</code>	<code>{2, 3}</code>
<code>set7 = {1, 2, 3}</code> <code>set7.clear()</code>	<code>set()</code>

Examples III

Adding an element

```
set1 = {175, 177, 184, 172}  
set1.add(176)  
print(set1)
```

```
{172, 175, 176, 177, 184}
```

Popping an element

```
set1 = {175, 177, 184, 172}  
set1.pop()  
print(set1)
```

```
{177, 172, 175}
```

Removing an element

```
set1 = {175, 177, 184, 172}  
set1.remove(184)  
print(set1)
```

```
{177, 172, 175}
```

Clearing the set

```
set1 = {175, 172, 177, 187}  
set1.clear()  
print(set1)
```

```
set()
```

Try It Yourself

Write a program that keeps taking characters as the input and storing them in a set until empty string is entered. Then print the number of unique characters that was entered.

Note: use the `input()` inside a `WHILE` loop. Use the `BREAK` statement to exit the loop when `" "` is encountered.