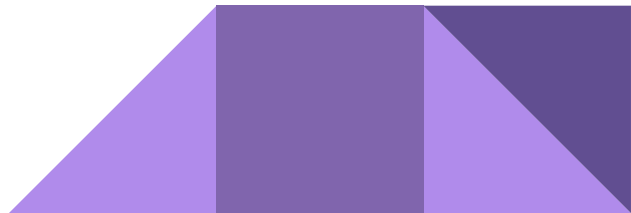




Back 2 Loopin'

Guess the Number

Let's say we want to write a program in which the user guesses a number. How would we accomplish this?




Guess the Number

Let's say we want to write a program in which the user guesses a number. How would we accomplish this?

We'd use an `if` statement!

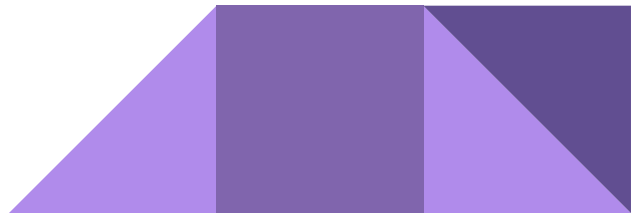
```
secret_number = 8
user_number = int(input("Guess a number: "))
if user_number == secret_number:
    print("Good guess!")
else:
    print("Sorry, wrong number!")
```

A decorative graphic in the bottom right corner consisting of several overlapping green triangles and rectangles in various shades of green.

Keep on Guessing

What if I want to let the user keep guessing until they get the right answer, though?

Can that be done with what we've learned so far?



While Loops

`While` loops are very similar in structure to `if` statements, except that they will **repeatedly** run their body as long as their `condition` is `True`.



While Loops

`While` loops are very similar in structure to `if` statements, except that they will **repeatedly** run their body as long as their `condition` is `True`.

```
while condition:  
    # ... do something ...  
    # ...
```

First, of course, we have our `while`. This is what lets us do a while loop in the first place!



While Loops

`While` loops are very similar in structure to `if` statements, except that they will **repeatedly** run their body as long as their `condition` is `True`.

```
while condition:  
    # ... do something ...  
    # ...
```

Next is the `condition` for the `while` loop, and it is structured exactly the same as for an `if` statement. As long as this can equal a `boolean` value, you're good!



While Loops

`While` loops are very similar in structure to `if` statements, except that they will **repeatedly** run their body as long as their `condition` is `True`.

```
while condition:
    # ... do something ...
    # ...
```

Last we have the **body** of the `while` loop. As long as the `condition` for the loop is `True` each time it's checked, this code will run continuously.



Example Loop

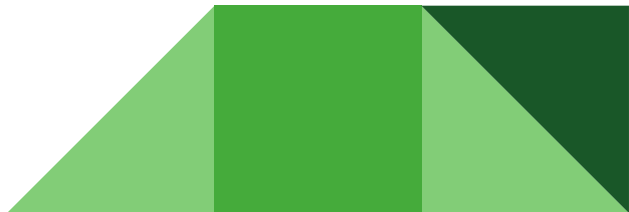
```
my_num = 3
while my_num > 0:
    print(my_num)
    my_num -= 1
print("All done!")
```



Example Loop

```
my_num = 3
while my_num > 0:
    print(my_num)
    my_num -= 1
print("All done!")
```

my_num



Example Loop

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my_num = 3  
while my_num > 0:  
    print(my_num)  
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my_num



Example Loop

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my_num = 3
while my_num > 0:
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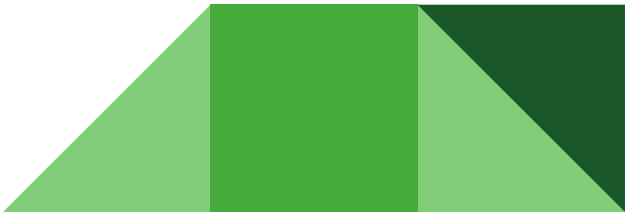
my_num



Example Loop

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my_num = 3
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    my_num -= 1
print("All done!")
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my_num



Example Loop

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my_num



Example Loop

```
my_num = 3  
while my_num > 0:  
    print(my_num)  
    my_num -= 1  
print("All done!")
```



my_num



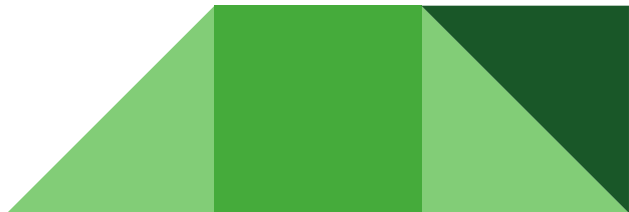
Example Loop

```
my_num = 3
while my_num > 0:
    print(my_num)
    my_num -= 1
print("All done!")
```

my_num

2

3
2



Example Loop

```
my_num = 3
while my_num > 0:
    print(my_num)
    my_num -= 1
print("All done!")
```

my_num



Example Loop

```
my_num = 3
while my_num > 0:
    print(my_num)
    my_num -= 1
print("All done!")
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my_num



Example Loop

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my_num = 3  
while my_num > 0:  
    print(my_num)  
    my_num -= 1  
print("All done!")
```



my_num



Example Loop

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while my_num > 0:
    print(my_num)
    my_num -= 1
print("All done!")
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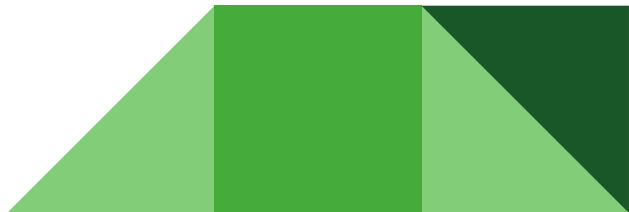
my_num



Example Loop

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while my_num > 0:
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    my_num -= 1
print("All done!")
```

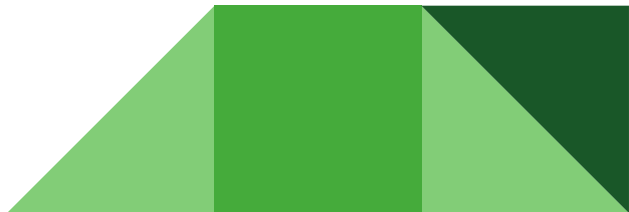
my_num



Example Loop

```
my_num = 3
while my_num > 0:
    print(my_num)
    my_num -= 1
print("All done!")
```

my_num

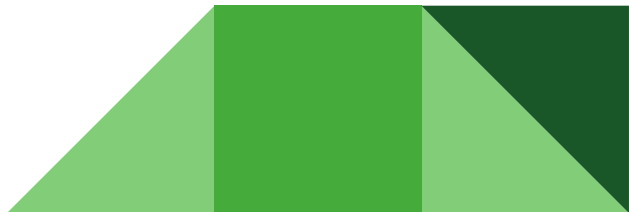


Example Loop

```
my_num = 3  
while my_num > 0:  
    print(my_num)  
    my_num -= 1  
print("All done!")
```



my_num



Example Loop

```
my_num = 3
while my_num > 0:
    print(my_num)
    my_num -= 1
print("All done!")
```

my_num

0

3
2
1
All done!

Back to Guessing Number

```
secret_number = 8
user_number = int(input("Guess a number: "))
while user_number != secret_number:
    print("Guess again!")
```



Back to Guessing Number

```
secret_number = 8
user_number = int(input("Guess a number: "))
while user_number != secret_number:
    print("Guess again!")
```

Guess a number: 5
Guess again!



Back to Guessing Number

```
secret_number = 8
user_number = int(input("Guess a number: "))
while user_number != secret_number:
    print("Guess again!")
```

```
Guess a number: 5
Guess again!
Guess again!
```



Back to Guessing Number

```
secret_number = 8
user_number = int(input("Guess a number: "))
while user_number != secret_number:
    print("Guess again!")
```

```
Guess a number: 5
Guess again!
Guess again!
Guess again!
```



Back to Guessing Number

```
secret_number = 8
user_number = int(input("Guess a number: "))
while user_number != secret_number:
    print("Guess again!")
```

```
Guess a number: 5
Guess again!
Guess again!
Guess again!
...
```



Back to Guessing Number

```
secret_number = 8
user_number = int(input("Guess a number: "))
while user_number != secret_number:
    print("Guess again!")
    user_number = int(input("Guess a number: "))
```

Guess a number: 5
Guess again!



Back to Guessing Number

```
secret_number = 8
user_number = int(input("Guess a number: "))
while user_number != secret_number:
    print("Guess again!")
    user_number = int(input("Guess a number: "))
```

```
Guess a number: 5
Guess again!
Guess a number: 8
```



Back to Guessing Number

```
secret_number = 8
user_number = int(input("Guess a number: "))
while user_number != secret_number:
    print("Guess again!")
    user_number = int(input("Guess a number: "))
print("Good guess!")
```

```
Guess a number: 5
Guess again!
Guess a number: 8
Good guess!
```



Be aware!

The `condition` for your `while` loop will **only** be checked

1. At the beginning (the first time the loop runs)
2. After the body has finished running

That means that if your `condition` becomes `False` halfway through the body of your loop, the rest of the body still has to finish before the `condition` is checked again.



Be aware!

```
my_num = 1
while my_num != 0:
    print("BAD NUMBER")
    my_num -= 1
    print("TRY AGAIN")
print("MUCH BETTER")
```



Quick Schedule Survey

I've got a quick survey for y'all asking about how you would like the schedule for this unit to progress - I'll send the link in the chat!

