

# Looping Constructs

# Scenario

- Print "Python is awesome" 1000 times

```
print("Python is awesome")  
print("Python is awesome")  
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print("Python is awesome")
```

```
print("Python is awesome")  
print("Python is awesome")  
.....  
.....  
.....  
.....  
.....
```

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print("Python is awesome")
```

**Looping Statements!!**

```
print("Python is awesome")  
print("Python is awesome")  
.....  
.....  
.....  
.....  
.....
```

# Looping constructs in Python

- Print “Python is awesome” 1000 times

**Pseudo-Code:**



# Looping constructs in Python

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## **Pseudo-Code:**

```
print "Python is awesome" (repeat 1000 times)
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# Looping constructs in Python

- Print "Python is awesome" 1000 times

## Pseudo-Code:

```
print "Python is awesome" (repeat 1000 times)
```

## Code:

```
for i in range(1000):  
    print("Python is awesome")
```

# Looping constructs in Python: The for loop

- The 'for' loop in python

**Pseudo-Code:**

```
print "Python is awesome" (repeat 1000 times)
```

**Syntax:**

```
for iterating_variable in sequence:  
    statements(s)
```

# Looping constructs in Python: The for loop

- The 'for' loop in python

## Pseudo-Code:

```
print "Python is awesome" (repeat 1000 times)
```

## Syntax:

for iterating\_variable in sequence:

■ statements(s)

4 space  
"indentation"



# Looping constructs in Python: The for loop

- The 'for' loop in python

## Pseudo-Code:

```
print "Python is awesome" (repeat 1000 times)
```

## Code:

```
for i in range(1000):  
    print("Python is awesome")
```

# Looping constructs in Python: The for loop

- The 'for' loop in python

## Pseudo-Code:

```
print "Python is awesome" (repeat 1000 times)
```

## Code:

```
for i in range(1000):  
    print("Python is awesome")
```

4 space  
"indentation"

# Looping constructs in Python: The for loop

- The 'for' loop in python

## Pseudo-Code:

```
print "Python is awesome" (repeat 1000 times)
```

## Code:

```
for i in range(1000):  
    print("Python is awesome")
```

"stop condition"

4 space  
"indentation"

# Types of loops: Example

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## Scenario #1:

### Pass in 5 subjects:

- Math
- Physics
- English..etc.

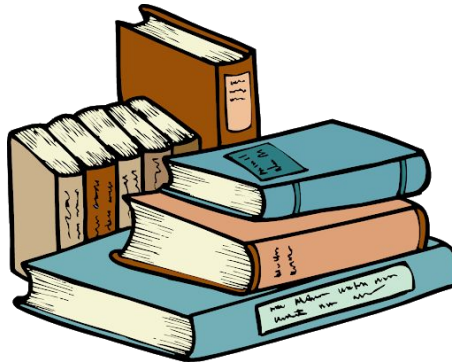


# Types of loops: Example

## Scenario #1:

### Pass in 5 subjects:

- Math
- Physics
- English..etc.



### Code:

```
for subject in range(5):  
    # Pass exam 5 times  
    # Once for each subject
```

# Types of loops: Example

## Scenario #1:

Pass in 5 subjects:

- Math
- Physics
- English..etc.



Code:

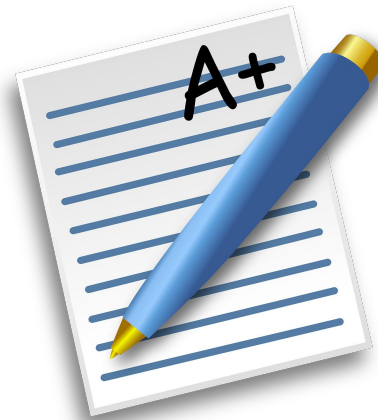
```
for subject in range(5):  
    # Pass exam 5 times  
    # Once for each subject
```

“stop condition”

# Types of loops: Example

## Scenario #2:

- Secure at least an **A grade** in Math to pass.

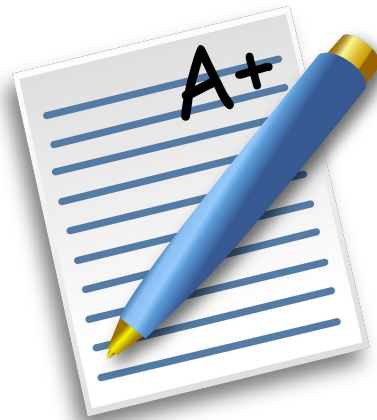




# Types of loops: Example

## Scenario #2:

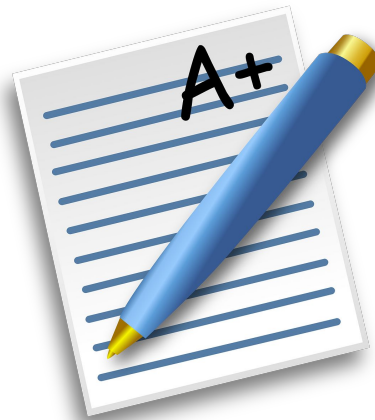
- Secure at least an **A grade** in Math to pass.
- When do you stop?



# Types of loops: Example

## Scenario #2:

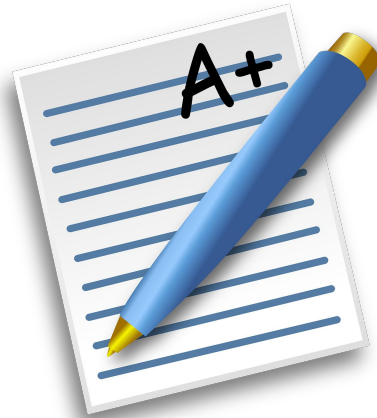
- Secure at least an **A grade** in Math to pass.
- When do you stop?
- Keep trying until you succeed!
- New kind of looping needed..



# Types of loops: Example

## Scenario #2:

- Secure at least an **A grade** in Math to pass.
- When do you stop?
- Keep trying until you succeed!
- New kind of looping needed..



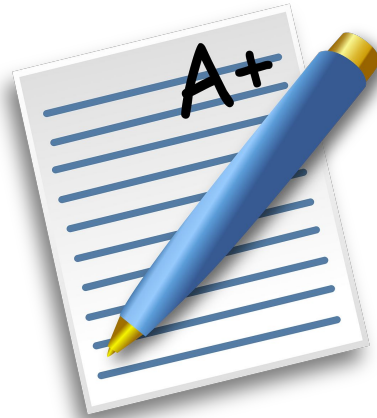
### Code:

```
while grade != 'A':  
    # Keep repeating until  
    # comparison gives a False
```

# Types of loops: Example

## Scenario #2:

- Secure at least an **A grade** in Math to pass.
- When do you stop?
- Keep trying until you succeed!
- New kind of looping needed..



comparison ("stopping criteria")

Code:

```
while grade != 'A':  
    # Keep repeating until  
    # comparison gives a False
```

# Looping constructs in Python: The while loop

- The 'while' loop in python

**Syntax:**

```
while comparison:  
    statements(s)
```

**Code:**

```
while grade != 'A':  
    # Keep repeating until  
    # comparison gives a False
```

# Looping constructs in Python: Summary

## 'for' loop

### Code:

```
for subject in range(5):  
    # Pass exam 5 times  
    # Once for each subject
```

## 'while' loop

### Code:

```
while grade != 'A':  
    # Keep repeating until  
    # comparison gives a False
```

Thank You