Loops Lecture

For Loops

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Loops

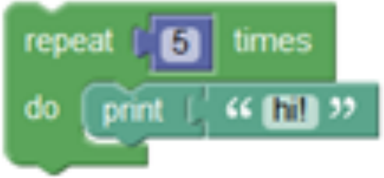
Loops allow you to perform the same set of tasks over and over again.

There are two types of loops:

- for loops
- while loops

For Loops

For loops are used when you know how many times you want to repeat a task.



```
repeat 5 times
do print “ hi! ”
```

“repeat 5 times”

```
for i in range(5):
   print “hi”,
```

⇒ `hi hi hi hi hi`

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For Loops

For loops are used when you know how many times you want to repeat a task.

“repeat 5 times”

```
for i in range(5):
   print “hi”,
```

⇒ hi hi hi hi hi

The comma makes all the items appear on the same line

For Loops

Loops make using all elements of lists easier.

The slow way is by a list’s index:

```
my_list = [3,7,2,8]

print my_list[0]  =>
print my_list[1]  =>
print my_list[2]  =>
print my_list[3]  =>
```

For Loops

Loops make using all elements of lists easier.

The slow way is by a list’s index:

```
my_list = [3,7,2,8]

print my_list[0]  => 3
print my_list[1]  => 7
print my_list[2]  => 2
print my_list[3]  => 8
```

D.R.Y.
Does this look repetitive?

What might happen to our code if shortened or extended our list?

For Loops

For loops are used when you know how many times you want to repeat a task.

“repeat for each item in a list” *(iterate)*

```
my_list = [3,7,2,8]
for item in my_list:    ⇒   3 7 2 8
    print item,
```

The comma makes all the items appear on the same line

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Anatomy of a for loop

```
for index in range(5):
    print index
```

`for`,`in`,`:`- required for every for loop

`index` - the variable we are using to keep track of where we are

`range(5)` - the list we want to iterate over

For Loop - Flow of Execution

On the board example.

```
for index in range(5):
    print index
```

Exercise Time!

Do **Loops Exercises** with your pair!

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