Loops + Iterators in Dart

GHS Code Club

Loops--->

For Loops

- Used when **you KNOW** the number of times something needs to happen

```
for (initialization; condition; step) {
    Body
}
```

Vocab

- Initialization: Used once to basically declare how many times the loop needs to run
- Condition : What needs to be true for the loop to run, often uses >,< or ==
- Step: What happens to the number of runs so number_runs - (insert value here)

Quick Project

Create a for loop that displays “Hello World” as many times as you’d like it to. (Careful not to crash dart pad)

Solution

```
void main() {

for (int i = 10; i  > 0; i--) {

print(“Hello World!”);

        }

}
```

This **should** print Hello world 10 times in the output

While Loops

- Used when you **DON'T KNOW** the number of times the loop needs to run
- Will continue to execute as long as the condition specified is still true

```
while (condition) {

body

}
```

Vocab Pt.2

- Condition: What must be true for your while statement to continue to run, related to boolean truth tables
- Body: Whatever you want your code to do while it is still true

Other Project

Print out every even number below 45 using a while loop, if you get this, then print out every odd number equal to or below 45.

Hint: A number operated on with % equals its remainder (10 % 3 = 1 and 10 % 2 = 0)

Solution pt. 2

```
void main() {

int number = 0;

while (number < 45) {

if (number % 2 == 0) {

print(number);

}

number++;

}

}
```

Iterators-->

What are Iterators?

- Allow for the manipulation of elements especially when they’re in a list or grouping
- Denoted by .iterator at the end of a variable
- .moveNext(): Moves one forward in a list
- .current: Uses whatever element you’re currently on

Mini Project

```
void main() {

var list_1 = [“Hello world”,”Greetings World”,”Salutations World”].iterator;

while(list_1.moveNext()); {

        print(list_1.current);

        }

}
```

Halloween Project

Create a program that can be used to create an assigned number of monster names based on a noun and adjective couplet

Solution (There’s probably a better way to do this)

```
void main() {
  for (int i = 0; i < 5; i++); {
    var noun_list = ["noun_1","noun_2","noun_3"].iterator;
    var adj_list = ["adj_1","adj_2","adj_3"].iterator;
  while(noun_list.moveNext()) {
    while(adj_list.moveNext()) {
      print(noun_list.current + " " + adj_list.current);
    }
  }

  }

}
```