

# C6 Loops

## 1. While loop

- use conditional expressions to control the loops
- the loop will be executed as long as the condition is true
- if the condition is false, the execution of loop will be stopped and start execute the lines after the loop

```
secret = 'swordfish'
pw = ''

while pw != secret:
    pw = input("What's the secret word? ")
```

## 2. For loop

- use a sequence like iterator, list, tuple or other collection type to control the loop
- the body of the loop is executed for each item in the sequence
- when the items in the sequence are loop through, the loop will end

```
animals = ( 'bear', 'bunny', 'dog', 'cat', 'velociraptor' )

for pet in animals:
    print(pet)
```

## 3. Additional control on loops (while loop and for loop)

- break
  - to break out the loop prematurely
- continue
  - used to shortcut the loop and start the loop again
- else

- only be executed if the loop ends normally

```
#for loop with additional controls
secret = 'swordfish'
pw = ''
auth = False
count = 0
max_attempt = 5

while pw != secret:
    count += 1
    if count > max_attempt: break
    pw = input(f"{count}: What's the secret word? ")
else:
    auth = True

#ternary condition
print("Authorized" if auth else "Calling the FBI ...")
```