

Loops and If Statements



Loops

```
for person in row:  
    person.clap()
```

Loops

```
for person in row:  
    person.clap()
```

For the next few examples, try to predict what is going to happen. Trust your gut.

```
for person in row:  
    person.speak("Hello")
```

0



```
for person in row:  
    person.speak("Hello")
```

0

Hello



```
for person in row:  
    person.speak("Hello")
```

0



```
for person in row:  
    person.speak("Hello")
```

0



```
for person in row:  
    person.speak("Hello")
```

0



```
for person in row:  
    person.speak("Hello")
```

0



1

```
for person in row:  
    if person is Avenger:  
        person.speak("Hello")  
    else:  
        person.speak("Sorry")
```



1

```
for person in row:  
    if person is Avenger:  
        person.speak("Hello")  
    else:  
        person.speak("Sorry")
```



1

```
for person in row:  
    if person is Avenger:  
        person.speak("Hello")  
    else:  
        person.speak("Sorry")
```



1

```
for person in row:  
    if person is Avenger:  
        person.speak("Hello")  
    else:  
        person.speak("Sorry")
```



1

```
for person in row:  
    if person is Avenger:  
        person.speak("Hello")  
    else:  
        person.speak("Sorry")
```



1

```
for person in row:  
    if person is Avenger:  
        person.speak("Hello")  
    else:  
        person.speak("Sorry")
```



```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")  
    else:  
        pass
```



```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")  
    else:  
        pass
```



```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")  
    else:  
        pass
```



2

```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")  
    else:  
        pass
```



```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")  
    else:  
        pass
```

2



```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")  
    else:  
        pass
```



```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")  
    elif p in Star Wars:  
        p.speak("Luke!")  
    else:  
        pass
```



```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")  
    elif p in Star Wars:  
        p.speak("Luke!")  
    else:  
        pass
```

Hello



```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")  
    elif p in Star Wars:  
        p.speak("Luke!")  
    else:  
        pass
```

Luke!



```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")  
    elif p in Star Wars:  
        p.speak("Luke!")  
    else:  
        pass
```



```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")  
    elif p in Star Wars:  
        p.speak("Luke!")  
    else:  
        pass
```



```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")  
    elif p in Star Wars:  
        p.speak("Luke!")  
    else:  
        pass
```



4

```
for p in row:  
    if p is Avenger and p can fly:  
        p.speak("Hello")  
    else:  
        pass
```



```
for p in row:  
    if p is Avenger and p can fly:  
        p.speak("Hello")  
    else:  
        pass
```



4

```
for p in row:  
    if p is Avenger and p can fly:  
        p.speak("Hello")  
    else:  
        pass
```



```
for p in row:  
    if p is Avenger and p can fly:  
        p.speak("Hello")  
    else:  
        pass
```



4

```
for p in row:  
    if p is Avenger and p can fly:  
        p.speak("Hello")  
    else:  
        pass
```



4

```
for p in row:  
    if p is Avenger and p can fly:  
        p.speak("Hello")  
    else:  
        pass
```



5

```
for p in row:  
    if p is Avenger and p can fly:  
        p.speak("Hello")  
    else:  
        break
```



```
for p in row:  
    if p is Avenger and p can fly:  
        p.speak("Hello")  
    else:  
        break
```



5

```
for p in row:  
    if p is Avenger and p can fly:  
        p.speak("Hello")  
    else:  
        break
```

loop stops



for loop syntax

```
for p in row:  
    p.speak("Hello")
```



one tab or four spaces - you pick, but it must match throughout an entire script

for loop syntax

```
for p in row:  
    p.speak("Hello")
```

Temporary variable that
you create for the for loop.
Must match exactly.

if statement syntax

```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")
```

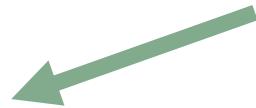


one tab or four spaces - you pick, but it must match throughout
an entire script

if statement syntax

```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")
```

Boolean (evaluates to a single True or False)



if statement syntax

```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")
```

We say that everything that is indented at least one tab under the for loop statement is **inside** the for loop.

if statement syntax

```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")
```

We say that everything that is indented at least one tab under the if statement is **inside** the if statement.

if statement syntax

```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")  
    elif p in Star Wars:  
        p.speak("Luke!")  
    else:  
        pass
```

Let's code!



Checking for errors

Find the error on the next few slides.

```
for p in row:  
    if p is Avenger and p can fly:  
        p.speak("Hello")  
    else:  
        pass
```



```
for p in row:  
    if p is Avenger and p can fly:  
        p.speak("Hello")  
    else:  
        pass
```



```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")  
    elif person in Star Wars:  
        p.speak("Luke!")  
    else:  
        pass
```



```
for p in row:  
    if p is Avenger:  
        p.speak("Hello")  
    elif p in Star Wars:  
        p.speak("Luke!")  
    else:  
        pass
```



```
for p in row:  
    p.fly()
```



```
for p in row:  
    p.fly()
```



```
for p in row:  
    p.fly()
```



ERROR



```
for p in row:  
    try:  
        p.fly()  
    except CantFlyError:  
        p.speak("Sorry")
```



```
for p in row:  
    try:
```

```
        p.fly()
```

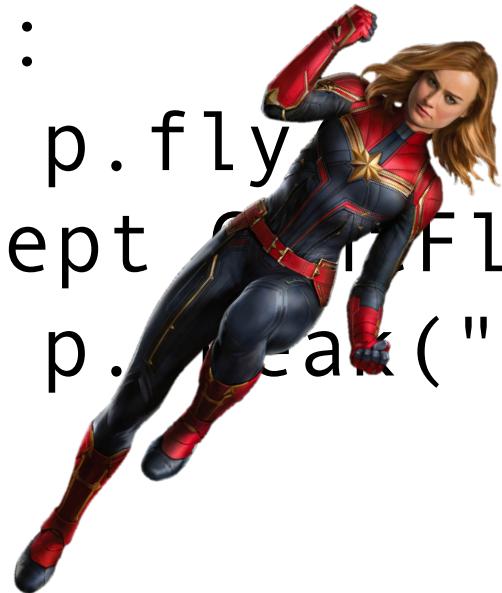
```
    except CantFlyError:
```

```
        p.speak("Sorry")
```

not a real error, just for fun



```
for p in row:  
    try:  
        p.fly()  
    except FlyError:  
        p.speak("Sorry")
```

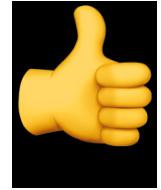


```
for p in row:  
    try:  
        p.fly()  
    except CantFlyError:  
        p.speak("Sorry")
```



Sorry

```
for p in row:  
    try:  
        p.fly()  
    except CantFlyError:  
        p.speak("Sorry")
```



```
for p in row:  
    try:  
        p.fly()  
    except CantFlyError:  
        p.speak("Sorry")
```



Sorry



```
for p in row:  
    try:  
        p.fly()  
    except CantFlyError:  
        p.speak("Sorry")
```



try/except

You will get more practice with try/except this afternoon.

Have you been wondering how the computer would know which of these people are Avengers, which can fly, etc?

You should come back tomorrow!

