

Creative Computing

complex conditions, while loops,
assignment 2: choose your own adventure

Comparisons

- `==` equals
- `!=` not equal
- `<` less than
- `>` greater than
- `<=` less than or equal
- `>=` greater than or equal

Booleans

- Comparisons are expressions that give back a boolean
- Boolean has two possible values, True or False
- Remember `fill(True)` and `fill(False)`?

```
type(4 == 5)  
<type 'bool'>
```

Conditionals

- **if and elif both need a boolean expression**

```
# Not useful, always executes!
```

```
if(True):  
    print("Boring!")
```

```
# Printing depends on whether or not person is 18
```

```
if(age > 18):  
    print("Legal")
```

```
# if, elif and if are exclusive (only one executes)
```

```
if(age > 18):  
    print("Legal")  
elif(age >= 13):  
    print("Teenager")  
else:  
    print("Kiddo!")
```

Complex conditions

- and, or let us combine conditions

```
if(f == "chocolate" or s > 3):  
    print("Great choice!")  
else:  
    print("Bah.  You're not living well!")
```

```
if(age >= 13 or (age < 13 and parent == True)):  
    print("Can watch movie")
```

```
# better  
if(parent == True or age >= 13):  
    print("Can watch movie")
```

Conditionals in real software?

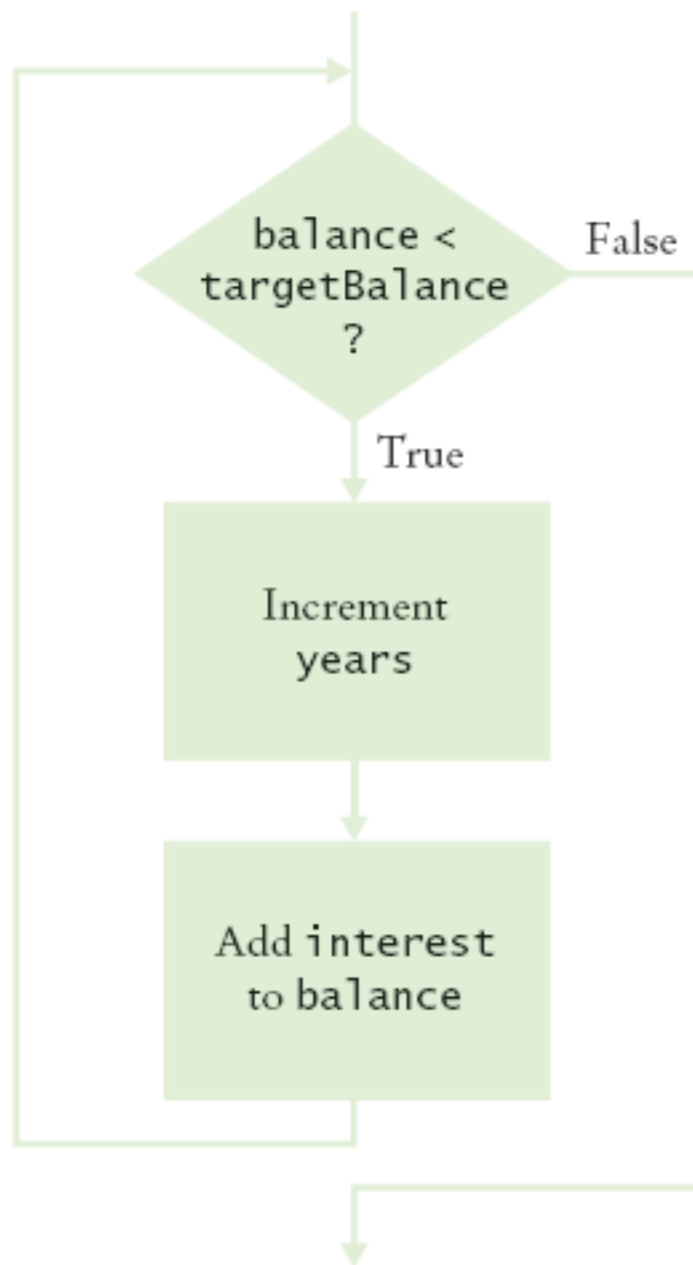
- They're everywhere!
- If the password entered matches, then login
- If age is 18 or more, show racy content
- If shot, then die
- If 'Cancel' is clicked, hide dialog

while loops

- Loops repeat things
- For loops are definite: we have to know how many times to repeat ahead of time
- While loops are indefinite: they stop when some condition is met
- Have to put in some sort of update or the loop continues forever!

```
while (<condition>):  
    <stuff to repeat>
```

Loop flowchart



```
years = 0
target_balance = 10000
balance = 8000
while(balance < target_balance):
    years = years + 1
    balance = balance + balance * .01

print(years)
```

Figure 1 Flowchart of a while Loop

Loops in real software?

- Also everywhere!
- Game loop keeps playing until character dies
- Login rejected until password is correct

Your assignment

- Make your own adventure game
- Practice complex conditionals, user input, while loops, variables
- Ideas:
 - Give the user puzzles and don't let them move on until they solve them
 - Keep score
 - If the user is unhealthy and hungry, let him be eaten by a shark, otherwise not