

## Python on Trinket – Lesson 7

### Review

- Mathematical operators
- Lists

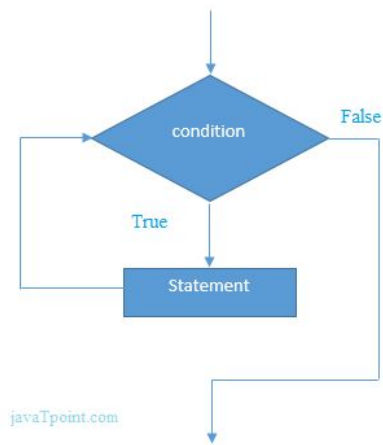
### Discussion

#### - While loops

- o Repeat a section of code an unknown number of times until a condition is met.

```
while condition:  
    statement(s)
```

- o We use for loops when we know exactly how many times we want to execute a block of code (i.e. 10 times to create a snowflake with 10 arms).
- o While loops are used when we don't know how many times we will need to execute a task.
  - i.e. If we ask a user to guess a number between 1 and 10, we don't know how many times they will guess incorrectly. So, we continue to ask the user to guess a number, *while* the number is not correct.
- o Infinite loops, when the condition is never false. This may crash a program, so you want the condition to become false at some point.
- o Using a while loop to receive correct input:
  1. Ask the user for input
  2. While the input is incorrect
  3. Ask the user for another value
  4. Go back to (2)



## Lesson

Guessing Game	
<pre>number = 7 guess = input("Guess a number between 1 and 10") while int(guess) != number:     guess = input("Guess again") print("Congratulations!")</pre>	<pre>Guess a number between 1 and 10 5 Guess again 7 Congratulations!</pre>

## Practice

- Create your own guessing game.
  - o Ask the user for their name and introduce them to the game.
  - o Use the while loop structure, taking input from the user and checking it against some condition.
  - o Congratulate the user when they've won.
- Extend your guessing game. For example..
  - o Ask the user for a difficulty level (easy – guess a number between 1 and 10; medium – 1 and 20; hard – 1 and 50)

```
difficulty = input("Enter a level of difficulty - easy/medium/hard")
```



```
if difficulty == "easy":
    max = 10
elif difficulty == "medium":
    max = 20
elif difficulty == "hard":
    max = 50

number = random.randint(1, max)
```

- o When the user guesses incorrectly, give them a hint by telling them whether their answer is too high or too low.