

# Guess Number

Making Game with Python (1)

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# Today

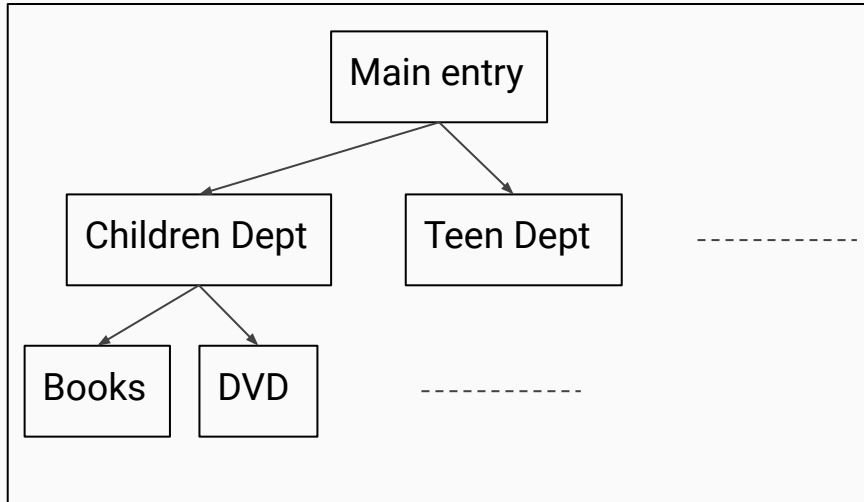
- Review
- Structure of program (Function and module)
- Import random module
- Flow control (If and For loop)
- Guess number game

# Review

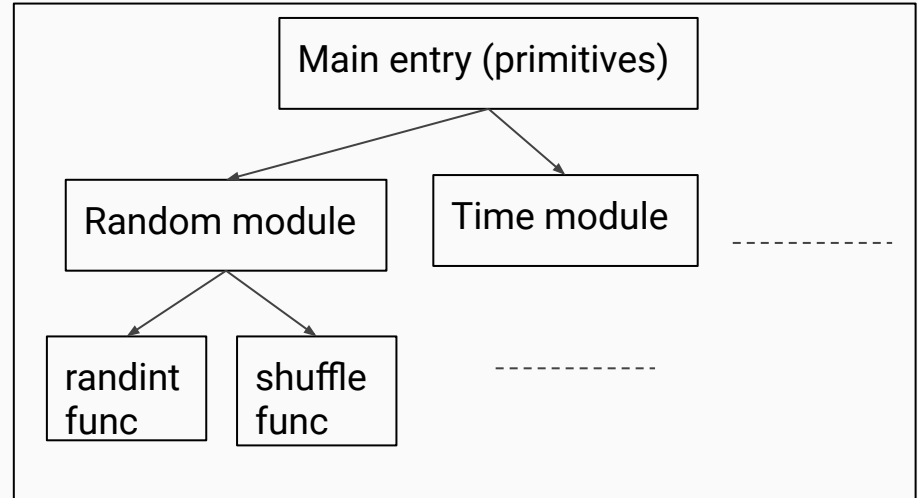
- String
- String operators and functions
- Input
- Print

# Structure of program (functions and modules)

Library



Program



# Import random module

- `import random`
- `random.randint(min_int, max_int):`
  - Inputs:
    - `min_int`: minimum integer
    - `max_int`: maximum integer
  - Return:
    - Random number between `min_int` and `max_int`
- Exercise:
  - `random.randint(1, 10)`
  - `random.randint(20, 30)`

# Import random module (cont)

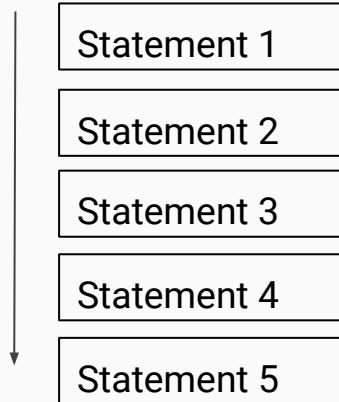
- `import random`
- `random.shuffle(sequence):` # shuffle in place
  - Inputs:
    - Sequence: collection of items (int, float, string, etc.)
  - Return:
    - None
- Exercise:
  - `A = [1,2,3,4,5]`
  - `random.shuffle(A)`
  - `print(A)`
  - `B = ['a', 'b', 'c', 'd']`
  - `random.shuffle(B)`
  - `print(B)`

# Import random module (cont)

- `import random`
- `random.choice(sequence)`:
  - Inputs:
    - Sequence: list of items (int, float, string, etc.)
  - Return:
    - Item which is randomly selected from the sequence
- Exercise:
  - `random.choice([2,3,6,10])`
  - `random.choice(['b', 'c', 'x', 'y'])`

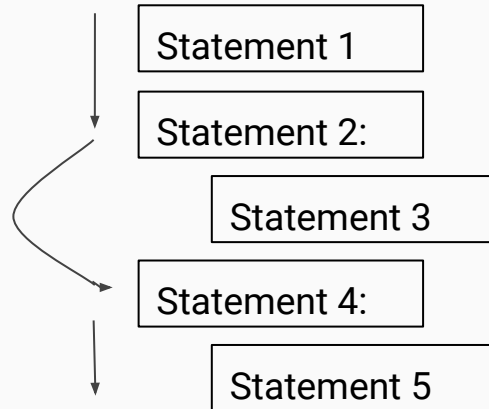
# Flow control

- Sequential program execution order (default):
  - top-bottom

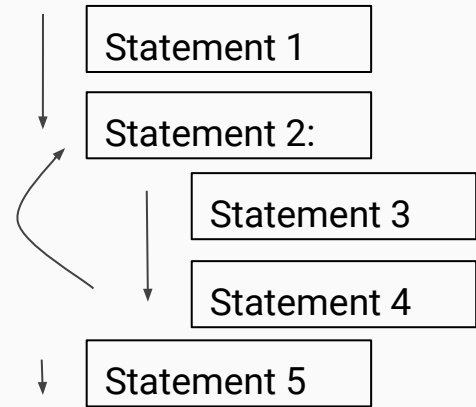


- Flow control statements:
  - change the default flow of the program execution (**Note: indentation and colon**)

Conditional statement



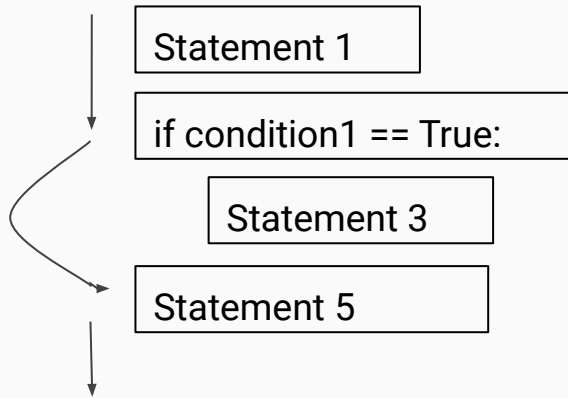
Loop statement



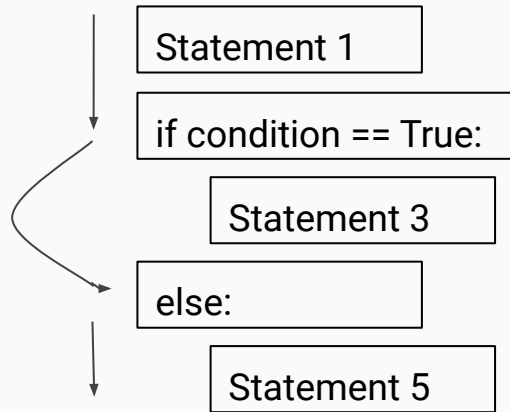


# Flow control (If statement)

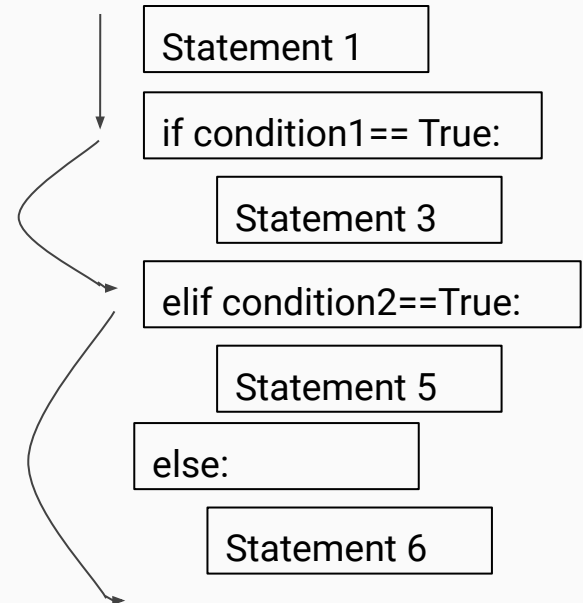
If statement



If else statement



If elif else statement



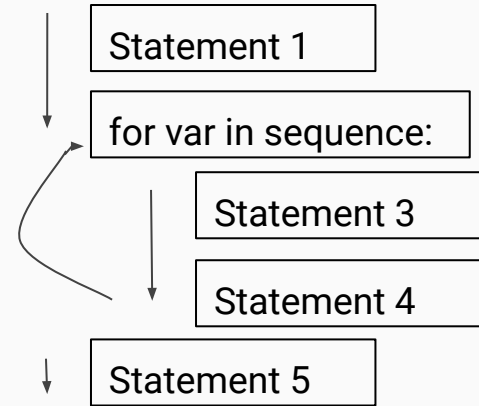
# Flow control (If statement: exercise)

```
a = 7
if a < 5:
    print('a is less than 5')
elif a == 5:
    print('a equals 5')
else:
    print('a is larger than 5')
```



# Flow control (For loop statement)

- For loops iterate over a given sequence of items (int, string, etc.)
- Syntax:
  - for var in sequence:  
    statement
- Sequence:
  - sequence = [0, 1, 2, 3, 4, 5]
  - sequence = range(6)
    - `range(max_number)` function: returns a sequence of numbers, starting from 0 by default, and increments by 1 (by default), and ends at a specified number (excluding).
- Exercise:
  - A = ['a', 'b', 'c', 'd']
  - for a in A:  
    print(a)
  - For a in range(10):  
    print(a)



# Guess Number Game



# Python code

```
import random
import sys

myName = input('Hello! What is your name?\n')

number = random.randint(1, 20)
print(f'Well, {myName}, I am thinking of a number between 1 and 20.')

for i in range(6):
    guess = int(input('Take a guess. '))

    if guess == number:
        print('Good job, ' + myName + '! You guess my number!')
        sys.exit(0)

    elif guess < number:
        print('Your guess is too low.')

    else:
        print('Your guess is too high.')

print('Nope. The number I was thinking of was ' + str(number))
```

# Q&A

