SECTION 6: METHODS AND FUNCTIONS, 2 hours 54 mins, 30 parts

- **5/29 Logic with Python Functions**
  - **adding logic into internal function operations**
    - -> functions with logic
    - -> checking if a number is even

  - **in the .ipynb file**
    - **mod operator**
      - **the remainder -> if a number mod 2 is 0 then the number is even because its divisible by 2 and has no remainder**
      - **-> 3%2 <- in comparison to maths (where || is the modulus, which is the positive version of a number)**
      - -> 20%2 == 0 <- this returns True, 20 is an even number

    - **to put this into a function**
      - def even_check(number):
        - result = number % 2 == 0 <- in other words, a boolean which checks if the input is even
        - return result <- then we return the result
        - alt. you can define the function as return number % 2 == 0

    - **to use this with a list**
      - -> return true is any number is even inside a list

      - **-> def check_even_list(num_list):**
        - **for num in num_list:**
          - if number % 2 == 0: <- if the number is even, we return true (if at least one of the numbers in the list are even)
            - **return True <- you can put returns inside a for loop (rather than just at the end of the function which you're defining)**
          - **else:**
            - **pass <- this means 'don't do anything'**
          - so
            - -> we're iterating through the list and if one of the elements in the list is even (it mod 2 is 0), then it returns True
            - **-> this function can have multiple returns**

        - **to return False (in the above function)**
          - -> you can't put return False under the else loop
          - -> because if there was another even number in the function, it would return False
          - -> so she's put the return False under a separate block of code (indented it later elsewhere)

        - **to return all of the even numbers in the list (in the above function)**
          - **-> she's defined an empty array ("placeholder" array) -> to hold the list of even numbers**
          - -> then changed the code under the indented even condition -> to append that number to the even list
          - -> **concatenate is to add two thing together, to append is to add something to the end of it**

- then he's checking the function on some test arrays