Year 10 Interleaved Homework 21
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This task is not about how much you can remember; it may require you to use the course website to help you answer some questions.

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1. Workout Intensity Code

```
def intensity(heart_rate, target):
    if heart_rate < target:
        return "Low Intensity"
    elif heart_rate > target:
        return "High Intensity"
    else:
        return "Moderate Intensity"
```

a. Name one parameter used by the subroutine:

heart_rate

b. State the data type of the return value:

string

c. What would be the output if the following code was run?

```
result = intensity(170, 150)
print(result)
```

☐ Low Intensity ☐ High Intensity ☐ Moderate Intensity

d. Write the code to call the subroutine with a target of 140 and a heart rate of 135:

intensity(135, 140)

2. PIN Matching Program

Write a Python program to check if an email has been entered correctly by a user.

Your program must:

- Get the user to input a 4-digit pin
- Get the user to input the 4-digit pin a second time
- Output the message "Match" and display the pins if they are the same
- Output the message "Do not match" if the pins are not the same

```
pin = None
while len(pin) != 4:
    pin = input()
pin2 = None
while len(pin2) != 4:
    pin2 = input()
if pin == pin2:
    print("Match")
else:
    print("Do not match")
```

3. Validation vs Verification

Explain the difference:

Validation is when you check if the data does fall into a specific criterion, although it doesn't say if its correct.

Verification is when you prompt a user to input multiple times, to allow them to make sure what they enter is correct

4. Other than a Range Check

Name one other form of validation:

Length check

5. Data Types

State the difference between an **integer** and a **real/float** data type:

Integer is whole numbers real/float is decimal

6. Film Record Program

Figure 1: Record Structure

```
RECORD Film
name: string
year: string
rating: real
ENDRECORD
```

Figure 2: Example Records

```
ToyStory = Film("Toy Story", 1995, 8.3)
FindingNemo = Film("Finding Nemo", 2003, 8.2)
```

a. Write the Python code needed to display the **name** and **year** of each film:

print(ToyStory.name, ToyStory.year, FindingNemo.name, FindingNemo.year)

b. Write the Python code needed to compare the **ratings** of both films and output the name of the film with the highest rating:

if ToyStory.rating > FindingNemo.rating: print(ToyStory.name) else: print(FindingNemo.name)

7. Subroutine Practice: Gym Workouts

Here is a Python program that calculates the average number of ice creams sold:

```
def icecreamsSold(days):
    print("Average customers per day")
    customers = int(input())
    sold = days * customers
    return sold
```

Using this as an example, write a subroutine to assist a gym in estimating the number of workouts completed in a month.

The subroutine must:

1. Have the identifier trackWorkouts
2. Accept the number of weeks the gym was open in the last month as a parameter
3. Prompt the user to input the average number of workouts per week

4. Calculate the estimated workouts by multiplying weeks open by average workouts
5. Return the estimated number of workouts

```
def trackWorkouts(weeksOpen):
    avg = int(input("average number of workouts per
week"))

    estWorkouts = avg * weeksOpen

    return estWorkouts
```