

LOOPS EXERCISE

TASK 1: CONVERT FOR LOOP INTO A WHILE LOOP

WORK WITH

```
numbers = list(range(0, 110, 10))
numbers = [0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100]

first = []
for num in numbers:
    s = num * 2.5
    if s % 2 == 0:

        first.append(s)
first
```

DESIRED OUTPUT

[0, 50, 100, 150, 200, 250]

HINTS?

1. For the **while** loop, have `x < len(numbers)`.
2. The most import line of code in a **while** loop to prevent an **INFINITE LOOP** is `x += 1`.
3. Create an empty **list** called second.
4. Start with an initial value of 0.

In [7]:

```
numbers = list(range(0, 110, 10))
numbers
first = []
for num in numbers:
    s = num * 2.5
    if s % 2 == 0:

        first.append(int(s))
first
```

Out[7]:

[0, 50, 100, 150, 200, 250]

TASK 2: USE LEN WITH CONTROL FLOW IN A FOR LOOP

WORK WITH

```
rep = ["Joe", "K", "Mike", "Joi", "Luv", "Deckard", "Wallace", "Rachel"]
```

DESIRED OUTPUT

Joe is a replicant
Mike is NOT a replicant
Joi is a replicant
Luv is a replicant
Deckard is NOT a replicant
Wallace is NOT a replicant
Rachel is a replicant

HINTS?

1. In the **for** loop, use the **len** function three times
2. Use the **print** statement twice.
3. The **if** statement requires three **or** operators.

In [1]:

```
rep = ["Joe", "Mike", "Joi", "Luv", "Deckard", "Wallace", "Rachel"]
```

TASK 3: FOR LOOP WITH NESTED WHILE LOOP</center>

WORK WITH

```
# Add Code Here
for r in range(2):
    # Add Code Here
    # Add Code Here
    # Add Code VV
    k % 2 == 0:
        print("Question")
    # Add Code VV
    k > 3 and k < 7:
        print("CELL")

    # Add Code VV
    k == 3:
        print("INTERLINKED")
    # Add Code HERE
        print("CELL WITHIN CELLS")
    # Add Code HERE!!!
# Add Code Here
```

DESIRED OUTPUT

Human
Question

Question

CELL WITHIN CELLS

Question

INTERLINKED

Question

CELL

Question

CELL WITHIN CELLS

Question

CELL WITHIN CELLS

Question

INTERLINKED

Question

CELL

Question

CELL WITHIN CELLS

Time to Finish

HINTS?

1. Use a for loop with **range** to repeat **while** loop
2. Use $k += 1$ with **while** loop and $k < 8$.
3. Use **if**, 2 **elif** statements, and an **else** statement in your **while** loop.
4. Total of 6 different **print** statements. 4 are inside the **while** loop.

In []:

```
# Add Code Here
for r in range(2):
    # Add Code Here
    # Add Code Here
    # Add Code VV
    k % 2 == 0:
        print("Question")
    # Add Code VV
    k > 3 and k < 7:
        print("CELL")

    # Add Code VV
    k == 3:
        print("INTERLINKED")
    # Add Code HERE
        print("CELL WITHIN CELLS")
    # Add Code HERE!!!
# Add Code Here
```

TASK 4: NESTED FOR LOOP IN A WHILE LOOP

WORK WITH

```
print("Y =", y)
print("_____")
print("X is equal to", x)
```

```
print("_____")
```

DESIRED OUTPUT

```
`python
START
Y = 0

____
X is equal to 4

____
Y = 2

____
X is equal to 5

____
Y = 4

____
X is equal to 6

____
Y = 6

____
X is equal to 7

____
Y = 8

____
X is equal to 8

END
```

HINTS?

1. Code a nested **for** loop inside a **while** loop with $y < 8$.
2. Initial values for y and x are 0
3. Two **print** statements outside the **while** loop
4. Use a **range** of 4 to 9 in the **for** loop.

In [2]:

```
print("Y =", y)
print("_____")
print("X is equal to", x)
print("_____")
y += 2 ; x += 1
```

TASK 5: FOR LOOP TO FIX STUDENT NAMES

WORK WITH

```
students = ["nAtalie", "M", "Fa ye", " Callum", "Tara"]
```

DESIRED OUTPUT

('NATALIE', 'FAYE', 'TARA', 'CALLUM')

HINTS?

1. Create an empty list.
2. Use **len** built-in function.
3. Use also the upper, replace and append methods for **list**
4. Lastly, convert output to a **tuple**.

In [3]:

```
students = ["nAtalie", "M", "Fa ye", " Callum", "Tara"]
```

TASK 6: FOR LOOP WITH ADDED VALUES FROM DICTIONARY</center>

WORK WITH

```
d1 = {"k1": [20, 30, 40], "k2": [1000, 2000, 3000]}
```

DESIRED OUTPUT

Total = 1020

Total = 2030

Total = 3040

End loop

HINTS?

1. Use one **for** loop with **range**.
2. Add the values from both keys together

In [4]:

```
d1 = {"k1": [20, 30, 40], "k2": [1000, 2000, 3000]}
```

TASK 7: WHILE LOOPS WITH THREE INPUTS

WORK WITH

```
prices = {"popcorn": 5, "soda": 2, "veggie burger": 7}
total = []

val = 0
while val < 2:
    num1 = input("Would you like popcorn with the film? ")
    if num1 == "no":
        None
    elif num1 == "quit":
        print("Enjoy the film")
        break
```

```
print("That will be $" + str(sum(total)))
print("Enjoy the film!")
```

DESIRED OUTPUT

1st EXAMPLE

Would you like popcorn with the film? no
Would you like a soda drink? no
Would you like a veggie burger?no
That will be \$0
Enjoy the film!

2nd EXAMPLE

Would you like popcorn with the film? yes
Would you like a soda drink? yes
Would you like a veggie burger?no
That will be \$7
Enjoy the film!

3rd EXAMPLE

Would you like popcorn with the film? quit
Enjoy the film

HINTS?

1. Create two more inputs and name them num2 and num3.
2. For num2, **print** would you like a soda? and for num3, **print** would you like a veggie burger?
3. Use the append function three times by grabbing values from the prices dictionary.
4. Use the **break** statement a total of 4 times.
5. Make sure you have the += 1 to prevent an **INFINITE LOOP!**
6. Use three **else** statements.

In []:

```
prices = {"popcorn": 5, "soda": 2, "veggie burger": 7}
total = []

val = 0
while val < 2:
    num1 = input("Would you like popcorn with the film? ")
    if num1 == "no":
        None
    elif num1 == "quit":
        print("Enjoy the film")
        break

print("That will be $" + str(sum(total)))
print("Enjoy the film!")
```

