



1.4 Binary Representation Questions

Task 1 : Nested If Statement

Look at the examples on the right.
Write an answer that asks the user for an input. It is for a home automation system. The user will be asked if they want to change settings for lights or heating.

If they select lights, nested options should be on, off or dimmed.

If they select heating, the option should be to enter a temperature or to turn off the heating.

```
○○○  
1 choice = int(input("What would you like to order\n1.Drinks\n2.Food\n3.Desert"))  
2 if choice == 1:  
3     print("""Select your drink:  
4         1. Coffee  
5         2. Hot Chocolate  
6         3. Tea  
7         """)  
8     drink = int(input("Enter a number"))  
9     if drink == 1:  
10        milk = int(input("Enter a number\n1.Milk\n2.Cream Milk\n3.Soya milk\n4.No Milk"))  
11     if drink == 2:  
12        milk = int(input("Enter a number\n1.Milk\n2.Cream Milk\n3.Soya milk\n4.No Milk"))  
13     if drink == 3:  
14        milk = int(input("Enter a number\n1.Milk\n2.Cream Milk\n3.Soya milk\n4.No Milk"))  
15 if choice ==2:
```



Task 2 : Nested Loop Problem 1

Re-write the solution on the right so that there are 5 rows and 1 column which increases each printed row like the example below.

*
* *
* * *
* * * *
* * * * *

```
1 rows = 3
2 cols = 5
3
4 # Outer loop for rows
5 for r in range(rows):
6     string = ""
7     # Inner loop for columns
8     for c in range(cols):
9         string += "* "
10    print(string)
```



A 3x5 grid of asterisks, representing the multiplication problem 3 times 5.



Task 3 : Nested Loop Problem 2

Use the example from the previous solution and
task to write a similar nested loop to display
numbers in a grid of 3x3 counting from 1-9

1 2 3
4 5 6
7 8 9

