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## Quiz 2: Decisions and Booleans

Q1:

Vorum allir sammála að það væri annaðhvort True eða False

Q2:

We all agreed it was A

Q3:

We figured the answer was A because `int('1337')` turns into 1337 in an int type and then `equal is equal 1337 == 1337` which is true so that will be the value

Q4:

The password attempt is not equal to the correct password so it will print out You shall not pass!

Q5:

Lower bound + upper bound becomes 65 and divided by 2 is 32.5 and that is smaller than the target so lower bound will become `int(middle) + 1` which is `32 + 1 = 33`. So the answer is C: lowerbound 33 and upperbound 42

Q6:

Both the statements are true so we print out what is in the if statement but not the else statement. So the answer is C

Q7:

X is 5 and it is not lower than 5 or higher than 8 so both the statements in the y is false so Y will be false. Then we print out x and y which will be 5 False. Answer A

Q8:

False because `true or false and false` which will be true and false because we do the or first and then we do the and statement which will be False so the answer is C: False

The answer was not C because after an incorrect guess we figured out it does the and statements first and then the or statements.

Q9:

Our answer is B because we make witch2\_job equal to witch1\_job so those are the same and then we do witch1\_job is equal to witch2\_job which will change nothing, because they are already the same. So the output will only have "All quiet on the eastern front"

Q10:

Our answer was C because the number is on a scale between 0-100 and it is not higher of equal to 85 or 70 but is higher or equal to 55 so that elif statement will execute which is C.

A, Even or Odd:

Problem - Name: Yeabsira I would use the if and else loop to solve this problem. If a number is even print even else print odd and can easily solve this problem.

Solution - Guðmundur:

```
int_n = int(input())
if -10**6 <= int_n <= 10**6 :
    if int_n%2 == 0:
        print("The number is even.")
    else:
        print("The number is odd.")
```

Have to make sure the % or the remainder is used and is == 0 to find the even number, then any number that does not fulfill that requirement is by definition odd.

B, Find Maximum:

Problem - Name: Ólafur

We are not allowed to use the built-in max function for this problem. To work around that, use a def maximum up to 3 times, like (a, b, c). Then an if statement where a >= b and a >= c: largest = a

Followed by elif statements, where its b >= a and b >= c, largest = b. Since only c is left, an else statement should suffice. Remember to end it with a "return largest".

But to show the results of the code, put a = int(input()) for a,b and c, ending with print(maximum (a,b,c))

Solution - Name: Ólafur

```
def maximum (a,b,c):
    if (a >= b) and (a >= c) :
        largest = a
    elif (b >= a) and (b >= c) :
        largest = b
    else:
        largest = c
    return largest
a = int(input())
b = int(input())
c = int(input())
print(maximum (a,b,c))
```

C, Budget:

Problem - Name:

Solution - Name:

D, D fyrir Dreki:

Problem - Name:

$d = (b^{**2} - (4 * a * c))$

Solution - Name

E, Elo Rating:

Problem - Guðmundur:

Start by creating a variable that takes in an integer input from the user. Create an 'if' expression that looks up if the input was greater than 999, if it's lower than that, make the program print out "Invalid". Next make an 'else if' expression that checks if the input is lower than 2400, if True, make the program print out "Amateur". Make another 'else if' expression that checks if the rating is greater or equal to 2400 or less than 2500, if True print out "International grandmaster". Make another 'else if' expression that checks if the rating is greater or equal to 2500 or less than 2700, if True, print out "Grandmaster". Finally make an 'else' expression that prints out "Super grandmaster".

Solution - name: Haukur

```
elo = int(input())
if(elo < 1000):
    print("Invalid")
elif(elo < 2400):
    print("Amateur")
elif(elo < 2500):
    print("International grandmaster")
elif(elo < 2700):
    print("Grandmaster")
else:
    print("Super grandmaster")
```

F, Leap Year:

Problem - Bjarni:

I would take the year input from the user. I would then check if it is evenly divisible 4 then I would then check if it is divisible by 100 and 400, or it is not evenly divisible by 100. If either of those are true then I would print out True, Otherwise I would print out False.

Solution - Name: Yeabsira

```

Y = int(input("enter a year"))
if Y % 4 == 0:
    if Y % 100 == 0:
        if Y % 400 == 0:
            print(Y,"is a leap year so the statment is true")
        else:(Y,"is a leap year so the statment is false")
    else:
        print(Y,"is a leap year so the statment is true")
else:
    print(Y,"is a leap year so the statment is false")

```

G, Logic Circuit:

Problem - Name: Haukur

I'd start by taking in three inputs of type int, then create the var "d" of type int. Then I follow the logic circuit graph. Each gate outputs weather 1 or 0. The not gate takes the input "x" and outputs 1 if x == 0, the and gate takes x and y input, and outputs 1 if x = y = 1, then finally the or gate, which outputs 0 if x = y = 0.

Solution - William:

Originally I was

Mainfile: logiccircuit.py

logiccircuit.py

```

1 A = bool(int(input()))
2 B = bool(int(input()))
3 C = bool(int(input()))
4
5 And1 = (not B) and A
6 And2 = (not A) and C
7 D = int(And1 or And2)
8 print(D)

```

H, Rock, Paper, Scissors:

Problem - William:

To start, create the first 2 lines adding players 1 & 2 & give them input. Then create values & rules with the values of the game (so R = rock, S = scissors, P = paper & scissors > paper, rock > scissors, paper > rock). Then is to make a **if, elif, else** statement coding the outcome of each player's input (ex. player 1 > player\_2). The **else** statement should print draw. The final solution should print the player who won.

Solution - tumi:

so my solution is a bit different than instructed, so i start by taking in 2 inputs for the players and then i go trough and check every variation of the different possibilities for the outcome of the game and print the corresponding outcome. but there is a more efficient way of getting the

same out come by using a dictionary and using player input as a key and then using the value so what loses to what you choose and check if that is the same as the other player chooses.

```
1 player1 = input()
2 player2 = input()
3
4 if player1 == "rock" and player2 == "scissors":
5     print("Player 1")
6 elif player1 == "paper" and player2 == "rock":
7     print("Player 1")
8 elif player1 == "scissors" and player2 == "paper":
9     print("Player 1")
10 elif player2 == "rock" and player1 == "scissors":
11     print("Player 2")
12 elif player2 == "paper" and player1 == "rock":
13     print("Player 2")
14 elif player2 == "scissors" and player1 == "paper":
15     print("Player 2")
16 else:
17     print("Draw")

1 player1 = input()
2 player2 = input()
3 rules = {
4     "rock" : "scissors",
5     "scissors" : "paper",
6     "paper" : "rock"
7 }
8
9 if player1 == player2:
10     print("Draw")
11 elif rules[player1] == player2:
12     print("Player 1")
13 else:
14     print("Player 2")
```

## I, Comrade Computer Operator

### Problem - Arnar:

To start with, you will need to save two integer inputs, “a” for the current temperature and “b” for the previous temperature. Be sure to declare these two as integers with `int(input())`. These two can be used to create two variables, “isRising” and “isFalling” by comparing the two numbers ( $a > b$ ,  $a < b$ ).

The conditions in the problem can now be easily checked for with an if/elif/else statement checking for “ $a < 300$ ”, “ $a == 300$ ”, “ $a > 300$  and  $a < 350$ ”. Depending on the result of these checks, either print “keep”, “raise”, “lower”, or for the else: “shutdown”.

For example, for the first check, if ( $a < 300$  and (not isRising)) then print raise.

### Solution - Bjarni:

I created the variable isRising and isFalling like instructed and then i first checked if the current temp is 300 and if it is 350 or above and printed out the accordingly. Then i checked if the temp is below 300 and checked if isRising is true or false and then printed out accordingly. Lastly I did an elif statement because if all the other statements did not fulfill then the current\_temp is between 300 and 350. I then checked isFalling and printed out the answer accordingly.

```
1 current_temp = int(input())
2 prev_temp = int(input())
3
4 isRising = current_temp > prev_temp
5 isFalling = current_temp < prev_temp
6
7 if current_temp == 300:
8     print('keep')
9
10 elif current_temp >= 350:
11     print('shutdown')
12
13 elif current_temp < 300:
14     if isRising:
15         print('keep')
16     else:
17         print('raise')
18
19 elif not isFalling:
20     print('lower')
21 else:
22     print('keep')
23
```

J, Veður - Vindhraði

Problem - Tumi: the start of this problem requires a float input of how fast the wind is that we will name wind\_speed ( wind\_speed = float(input()) ), then after that we take our float input and we take it through a if and then as many elifs as we need : example ( elif wind\_speed >= 0.3 and wind\_speed <= 1.5: ) to check where the number falls into and then we print the corresponding wind level name, at the end we have elif to grab any number over 32.7.

Solution - Arnar:

```
1 wind_speed = float(input())
2 if wind_speed <= .2:
3     print("Logn")
4 elif wind_speed <= 1.5:
5     print("Andvari")
6 elif wind_speed <= 3.3:
7     print("Kul")
8 elif wind_speed <= 5.4:
9     print("Gola")
10 elif wind_speed <= 7.9:
11     print("Stinningsgola")
12 elif wind_speed <= 10.7:
13     print("Kaldi")
14 elif wind_speed <= 13.8:
15     print("Stinningskaldi")
16 elif wind_speed <= 17.1:
17     print("Allhvass vindur")
18 elif wind_speed <= 20.7:
19     print("Hvassvidri")
20 elif wind_speed <= 24.4:
21     print("Stormur")
22 elif wind_speed <= 28.4:
23     print("Rok")
24 elif wind_speed <= 32.6:
25     print("Ofsæddur")
26 else:
27     print("Farvidri")
28
```