Python Basic Camp

Exercises Day 2

1.1 - Conditionals	Entering a club
Instructions	Request the user's age. If they're 18 or older, print "Welcome to the club!"
Expected output example 1	How old are you? >>>25 Welcome to the club!
Expected output example 2	How old are you? >>>13
| Solution | ```python
age = int(input("How old are you?"))
if age >= 18:
    print("Welcome to the club.")
``` |

1.2 - Conditionals	Exam result
Instructions	Request the user for their exam result. If their score is 50 or above, print "You passed the exam!", otherwise print "You failed the exam".
Expected output example 1	Enter your exam score: >>>65 You passed the exam!
Expected output example 2	Enter your exam score: >>>13 You failed the exam.
| Solution | ```python
score = int(input("Enter your exam score: "))
if score >= 50:
    print("You passed the exam!")
else:
    print("You failed the exam.")
``` |

1.3 - Conditionals	Buying tickets
Instructions	When buying movie tickets, if you're a student, the ticket price is 10€, otherwise the ticket price is 15€. Ask the user how many tickets they need and if they are a student, then print the total amount to be paid for the tickets.
Expected output	How many tickets do you need:

example 1	>>>3 Do you have student discount (y/n)? >>>y Total tickets price: 30 euros
Expected output example 2	How many tickets do you need: >>>4 Do you have student discount (y/n)? >>>n Total tickets price: 60 euros

Solution	<pre>no_of_tickets = int(input("How many tickets do you
	need? "))
	discount = input("Do you have a student discount
	(y/n)? ")
	if discount == "y":
	    print("Total tickets price: ", no_of_tickets * 10,
	"euros")
	elif discount == "n":
	    print("Total tickets price: ", no_of_tickets * 15,
	"euros")
	else:
	    print("Please select y or n")</pre>

1.4 - Conditionals	Comparing numbers
Instructions	Request the user to input two numbers. If they are equal, print "The numbers are equal." If the first number is greater than the second, print "The first number is greater." Otherwise, print "The second number is greater."
Expected output example 1	Enter the first number: >>>15 Enter the second number: >>>33 The second number is greater.
Expected output example 2	Enter the first number: >>>23 Enter the second number: >>>23 The numbers are equal.

Solution	<pre>number1 = int(input("Enter the first number: "))
	number2 = int(input("Enter the second number: "))
	
	if number1 > number2:
	    print("The first number is greater.")</pre>

| | ```
elif number1 < number2:
    print("The second number is greater.")
else:
    print("The numbers are equal.")
``` |

1.5 - Conditionals	University admission
Instructions	You're checking eligibility for admission to a university. If the applicant's age is between 18 and 25, and their GPA (average result of all the grades on a 7 point scale grade) is 3.0 or above, print "Congratulations! You're eligible for admission." If the applicant meets only one of the criteria (age or GPA), print "You don't meet all the requirements." Otherwise, print "Sorry, you're not eligible for admission."
Expected output example 1	Enter your age: >>>20 Enter your GPA: >>>4.5 Congratulations! You're eligible for admission.
Expected output example 2	Enter your age: >>>26 Enter your GPA: >>>4.5 You don't meet all the requirements.
| Solution | ```
age = int(input("How old are you? "))
gpa = float(input("What is your GPA? "))

if age >= 18 and age <= 25 and gpa >= 3.0:
    print("Congratulations, you're eligible for admission")
elif age < 18 or age > 25 or gpa < 3.0:
    print("You don't meet all the requirements")
else:
    print("Sorry, you're not eligible for admission.")
``` |

2 - Operator priorities	Try guessing the result first, then try it out
Instructions	Try guessing the result for each of the following calculations, then try them out: result1 = 5 + 3 * 2 result2 = (5 + 3) * 2

	result3 = 8 / 2 * 4
	result4 = 8 * 4 / 2
	result5 = 5 + 2 ** 3
	result6 = (5 + 2) ** 3
	result7 = 10 % 3 + 2 * 3
	result8 = 10 % (3 + 2) * 3
	result9 = 10 / 2 + 5 // 2
	result10 = (10 / 2) + (5 // 2)

3.1 - Nested Conditionals	Promotional products
Instructions	The program recommends products in the promotion. If the buyer wants a recommendation, the program asks for a category of goods. - if the category is "sweets," "Gummy fruit for 200 coins" is recommended; - for any other category, "Lingonberry juice for 140 coins." If the buyer does not want any products in the promotion, the program politely says goodbye: "Let us know if you change your mind!"
Expected output example 1	Would you like promotional items (yes/no)? >>>yes Enter a category: >>>sweets Gummy fruit for 200 coins
Expected output example 2	Would you like promotional items (yes/no)? >>>no Let us know if you change your mind!

Solution	<pre>promotion = input("Would you like promotional items (yes/no)? ")
	if promotion == "yes":
	    category = input("Enter a category: ")
	    if category == "sweets":
	        print("Gummy fruit for 200 coins")
	    else:
	        print("Lingonberry juice for 140 coins")
	else:
	    print("Let us know if you change your mind!")</pre>

3.2 - Nested Conditionals	3=1 promotion
Instructions	The supermarket has launched the "1=3" promotion. The buyer can purchase any three goods, pay for the most expensive of them, and

	receive the others as a gift. Write a program that determines the highest price out of three and prints the amount to pay.
Expected output example 1	Price of product 1: >>>1220 Price of product 2: >>>2100 Price of product 3: >>>140 Promotion! Total for three items: 2100
Expected output example 2	Price of product 1: >>>1220 Price of product 2: >>>350 Price of product 3: >>>1220 Promotion! Total for three items: 1220

Solution	<pre>product1 = int(input("Price of the first product: "))
	product2 = int(input("Price of the second product: "))
	product3 = int(input("Price of the third product: "))
	
	if product1 > product2:
	    if product1 > product3:
	        print("Promotion! Total to pay", product1)
	    else:
	        print("Promotion! Total to pay", product3)
	else:
	    if product2 > product3:
	        print("Promotion! Total to pay", product2)
	    else:
	        print("Promotion! Total to pay", product3)</pre>

4.1 - While	Counting down
Instructions	Print the numbers counting down from 10 using a while loop
Expected output	10 9 8 7 6 5

	4 3 2 1 0

Solution	```python
	counter = 10
	while counter >= 0:
	    print(counter)
	    counter -= 1
	``

4.2 - While	Enter the right password
Instructions	The user should enter a password, and it keeps asking until they enter the correct one. The right password is "password123"
Expected output	Enter the password: >>>ABC123 Incorrect password. Try again. Enter the password: >>>password123 Password correct!

Solution	```python
	correct_password = "password123"
	input_password = input("Enter the password: ")
	while input_password != correct_password:
	    print("Incorrect password. Try again")
	    input_password = input("Enter the password: ")
	print("Password correct!")
	``

4.3 - While	Guessing a number
Instructions	The program will select a random number between 1 and 100. The user will be asked to guess the number until he finds the right one. Each time, the program will tell him if the number is higher or lower. hint: to choose a random number use random.randint(1,100)
Expected output	Guess the number (1-100): >>>33 Too low. Try again. Guess the number (1-100): >>>87 To high. Try again. Guess the number (1-100): >>>57 Congratulations! You guessed the number!

Solution	```python
	import random
	``

```python
random_number = random.randint(1,100)
#print("The random number is: ", random_number)

user_number = int(input("Guess the number (1 - 100): "))

while random_number != user_number:
    if user_number > random_number:
        print("Too high. Try again.")
    else:
        print("Too low. Try again.")
    user_number = int(input("Guess the number (1 - 100): "))
print("Congratulations! You guessed the number.")
```