24BIT167 - VANDITA NAWANI

Aim : To implement various operations of sets in Python, including uppercase conversion, random manipulation and set modification

System configration : Hardware-Windows 11,Intel Procrocessor Software IDE-Python (version 3.x.), Google Colab

Theory : A set is ordered collection of unique elements. They do not allow duplicate values. Supports operations like union, intersection and difference.

Write a program that converts the words present in the list into uppercase and stores them in a list

```
words = ["student", "books", "bags", "laptop", "earbuds"]
set = [word.upper() for word in words]
print(set)
```

➡️ ['STUDENT', 'BOOKS', 'BAGS', 'LAPTOP', 'EARBUDS']

Write a program with 10 random numbers between the range 15 to 45. Count how many numbers are less than 30 and delete the numbers greater than 35

```
import random
a = (random.randint(15,45) for a in range (10))
print("THE RANDOM NUMBERS ARE:", a)
less_than_30 = [num for num in a if num < 30]
print("THE NUMBERS LESS THAN 30 ARE:", less_than_30)
greater_than_35 = [num for num in a if num > 35]
```

➡️ THE RANDOM NUMBERS ARE: <generator object <genexpr> at 0x7b50f673b060>
   THE NUMBERS LESS THAN 30 ARE: [24, 22, 24, 19, 16, 23]

Create a empty set. write a program that adds 5 names to this set, modifies the set and deletes the elements from set

```
s = set()
s.update(["STEVE", "TONY", "BRAM", "LILY", "CLORA"])
print("THE FIRST NAMES ARE:", s)
s.discard("STEVE")
s.discard("CLORA")
s.add("DAVID")
print("THE MODIFIED NAMES ARE:", s)
```

➡️ THE FIRST NAMES ARE: {'BRAM', 'STEVE', 'LILY', 'TONY', 'CLORA'}
   THE MODIFIED NAMES ARE: {'BRAM', 'DAVID', 'LILY', 'TONY'}

A set contains names which begin with A and B. Write a program to seprate these names with A and B.

```
s = {"AMANDA", "BOB", "ALICE", "BRAM", "AMY"}
a = [name for name in s if name.startswith("A")]
b = [name for name in s if name.startswith("B")]
print("THE NAMES STARTING WITH A ARE:", a)
print("THE NAMES STARTING WITH B ARE:", b)
```

➡️ THE NAMES STARTING WITH A ARE: ['ALICE', 'AMY', 'AMANDA']
   THE NAMES STARTING WITH B ARE: ['BRAM', 'BOB']