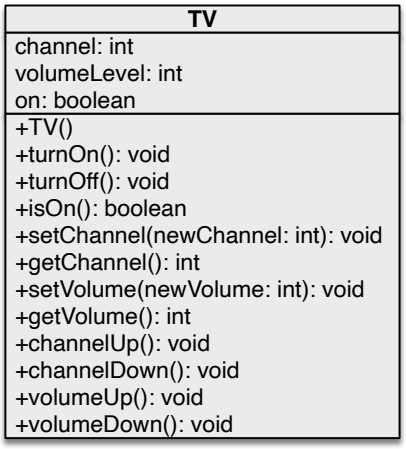
OOP WS2020/21

EXERCISE 1

1. Implement TV class as depicted in the UML-Diagram below. The range of the VolumeLevel is between 1 to 10 and Channel is between 1 to 120. See lecture notes. Implement all the methods accordingly such that it will make sure that the VolumeLevel and Channel remain in the valid range. (in TV.java)



2. Design a class named **Rectangle** to represent a rectangle. The class contains:
   - Two **double** data fields named **width** and **height** that specify the width and height of the rectangle. The default values are **1** for both **width** and **height**.
   - A no-args constructor that creates a default rectangle.
   - A constructor that creates a rectangle with the specified **width** and **height**.
   - A method named **getArea()** that returns the area of this rectangle.
   - A method name **getPerimeter()** that returns the perimeter.

   Draw the UML diagram for the class then implement the class. Upload your UML diagram in UML folder. Create your own java file inside the main java folder, where the TV.java is located.
3. Design a class named **Stock** that contains:
   - A string data field named **symbol** for the stock's symbol.
   - A string data field named **name** for the stock's name.
   - A **double** data field name **previousClosingPrice** that stores the stock price for the previous day.
   - A **double** data field named **currentPrice** that stores the stock price for the current time.
   - Create getter and setter methods for **previousClosingPrice** and **currentPrice**
   - A constructor that creates a stock with the specified symbol and name.
   - A method named **getChangePercent()** that returns the percentage changed from **previousClosingPrice** to **currentPrice**.

   Draw the UML diagram for the class then implement the class. Upload your UML diagram in UML folder. Create your own java file inside the main java folder, where the TV.java is located.