# PRACTICE

**HOW DOES A PRACTICE SESSION WORK?**

- STEP 1: individual work on paper

* Find the INPUT / OUPUT types
* Complete the output expected for the different inputs
* Write the main step of your program, for example :

**Get** array1

**Create** array2

**Loop** on numbers of array1

**If** number> 50

**Add** number to array2

- STEP 2: Meet – group 3 – be agree on solution

- STEP 3: Validation by teacher on paper

- STEP 4: Code it - individually

**EXERCISE 01**

We want to manage the number of students per class, so we use a

dictionary:

* The key is the name of the class (ex : "2021C" )
* The value is the number of students

INPUTS:

* 1 dictionary STRING (key) -> INTEGER (value) :

{"2021A": 20, "2021B": 30, "2021C": 15 }

OUTPUT:

* Print for each class the number of students as follows:

Class 2021A has 20 students

Class 2021B has 30 students

**Example**

|  |  |
| --- | --- |
| INPUT | OUTPUT |
| {"2022A": 20, "2022B": 30, "2022C": 15} | Class 2022A has 20 students  Class 2022B has 30 students  Class 2022C has 15 students |
| {"2023A": 20, "2023B": 30, "2023C": 25} | Class 2023A has 20 students  Class 2023B has 30 students  Class 2023C has 25 students |
| {} | No class assigned! |

EXERCISE 02

We have a table containing the list of materials information such as name, quantity, Retail price, and quality. Display the **total price** of materials which are ***good quality***.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Quantity | Retail price | Quality |
| Computer | 20 | 400 | Good |
| Computer | 10 | 200 | Not good |
| Monitor | 20 | 1000 | Not good |
| Keyboard | 10 | 150 | Good |
| Speaker | 5 | 50 | Good |

We represent this table with array of dictionaries. Example:

*materials = [*

*{‘name’: 'Computer', ‘quantity’: 20, ‘retail\_price’: 400, ‘quality: 'Good'},*

*{‘name’: 'Computer', ‘quantity’: 10, ‘retail\_price’: 200, ‘quality’: 'Not good'},*

*{‘name’: 'Monitor', ‘quantity’: 20, ‘retail\_price’: 1000, ‘quality’: 'Not good'},*

*{‘name’: 'Keyboard', ‘quantity’: 10, ‘retail\_price’: 150, ‘quality’: 'Good'},*

*{‘name’: 'Speaker', ‘quantity’: 5, ‘retail\_price’: 50, ‘quality’: 'Good'}*

*]*

* **INPUT**
  + - Array of dictionaries
* **OUTPUT**
  + - An integer (total price of the materials which are good quality)

*Tip: to find total price from 1 item you need to multiply retail price with quantity (total price = retail price \* quantity)*

**EXERCISE 03**

We have the list of students with some information such as name, class, and score.

|  |  |  |
| --- | --- | --- |
| Name | Class | score |
| Him | A | 70 |
| Rady | B | 80 |
| Ronan | A | 90 |
| Hyacinthe | B | 99 |

This data is represented in an array of dictionaries:

*students = [*

*{“name”: “Him”, “class”: “A”, “score”: 70},*

*{“name”: “Rady”, “class”: “B”, “score”: 80},*

*…*

*]*

QUESTIONS:

* What is the type of the variable ***students***?
* What is the type of ***students[0]***?
* What is the type of ***students[0][“name”]*** , of ***students[0][“class”]*** and of ***students[0][“score”]***?

TODO:

* + - 2 Inputs:
      1. Get the class name from input (string)
      2. Get information about the students (array of dictionaries)
    - Output: Print the name of the student who has the lowest score in that class (string)

**Examples:**

|  |  |
| --- | --- |
| INPUT | OUTPUT |
| A  [  {‘name’:'HIM', ‘class’:'A', ‘score’:90},  {‘name’:'Bopha', ‘class’:'A', ‘score’:40},  {‘name’:'Tesla', ‘class’:'A', ‘score’:80},  {‘name’:'Kunthea', ‘class’:'B', ‘score’:100},  {‘name’:'Kolap', ‘class’:'B', ‘score’:90},  {‘name’:'Vanna', ‘class’:'B', ‘score’:70},  {‘name’:'Chompey', ‘class’:'C', ‘score’:50},  {‘name’:'Romchong', ‘class’:'C', ‘score’:90},  ] | Bopha |
| B  [  {‘name’:'HIM', ‘class’:'A', ‘score’:90},  {‘name’:'Bopha', ‘class’:'A', ‘score’:70},  {‘name’:'Tesla', ‘class’:'A', ‘score’:80},  {‘name’:'Kunthea', ‘class’:'B', ‘score’:100},  {‘name’:'Kolap', ‘class’:'B', ‘score’:90},  {‘name’:'Vanna', ‘class’:'B', ‘score’:40},  {‘name’:'Chompey', ‘class’:'C', ‘score’:50},  {‘name’:'Romchong', ‘class’:'C', ‘score’:90},  ] | Vanna |
| C  [  {‘name’:'HIM', ‘class’:'A', ‘score’:90},  {‘name’:'Bopha', ‘class’:'A', ‘score’:70},  {‘name’:'Tesla', ‘class’:'A', ‘score’:80},  {‘name’:'Kunthea', ‘class’:'B', ‘score’:100},  {‘name’:'Kolap', ‘class’:'B', ‘score’:90},  {‘name’:'Vanna', ‘class’:'B', ‘score’:50},  {‘name’:'Chompey', ‘class’:'C', ‘score’:40},  {‘name’:'Romchong', ‘class’:'C', ‘score’:90},  ] | Chompey |