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Faculty: Faculty of Exact Sciences
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Module: Scientific Programming
Level: 2nd Year LMD
Specialty: Physics/MCPC
Session: Practical Work N°7
Subject: CSV Files – Reading Simple Tabular Data

SESSION 7
CSV Files – Reading Simple Tabular Data

LEARNING GOALS

- Understand the structure of a CSV file.
- Open and read a simple CSV file using Python's `csv` module.
- Display rows of data.
- Recognize CSV as a practical format for experimental data.

SHORT THEORY

A **CSV** (Comma-Separated Values) file stores tabular data as text. For example:

```
time,temperature
0,20.1
1,20.5
2,21.0
```

1. Read a CSV file

LET'S TRY

```
import csv

with open("data.csv", "r") as file:
reader = csv.reader(file)
for row in reader:
print(row)
```

2. Read rows after the header

GUIDED PRACTICE

```
import csv

with open("data.csv", "r") as file:
reader = csv.reader(file)
header = next(reader)
print("Header:", header)

for row in reader:
print(row)
```

Guided practice – laboratory data

GUIDED PRACTICE

Suppose `experiment.csv` contains columns for time and temperature. Read the file and display each row. Then identify which column corresponds to time and which corresponds to temperature.

PHYSICS CONNECTION

CSV is useful because experimental or numerical data can be stored in a simple table and later processed by Python. In this course, we only introduce the basic CSV reading operation prescribed in the syllabus.

TRY IT YOURSELF – NO SOLUTION

1. Open a CSV file using the `csv` module.
2. Read and display the header.
3. Display the data rows.
4. Identify the columns of a simple physical dataset.

TRY IT YOURSELF – NO SOLUTION

1. Create a small CSV file with columns `time` and `position`.
2. Read the file with Python.
3. Display the header and every data row.