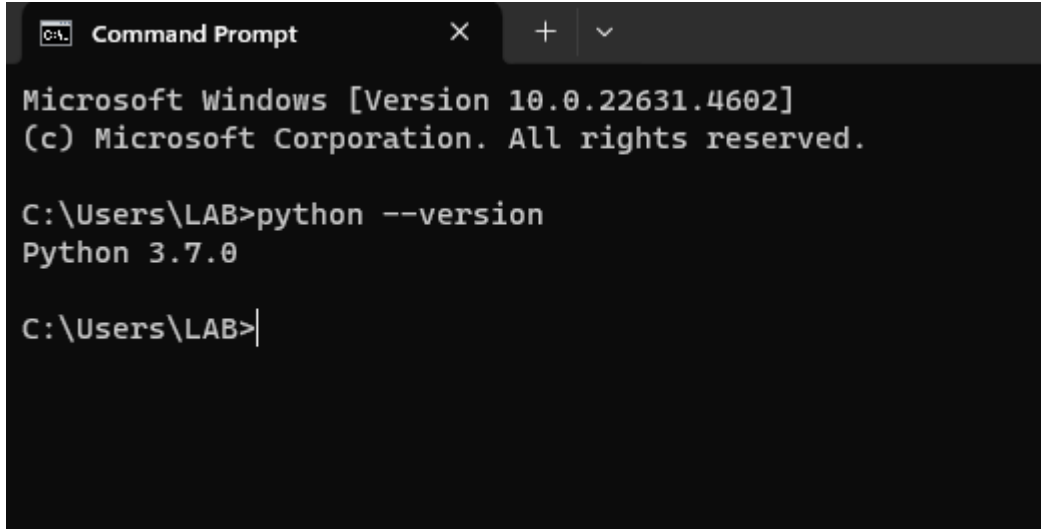


Experiment – 1

AIM: Implement and demonstrate the FIND-S algorithm for finding the most specific hypothesis based on a given set of training data samples. Read the training data from a .CSV file.

Open cmd:



```
Microsoft Windows [Version 10.0.22631.4602]
(c) Microsoft Corporation. All rights reserved.

C:\Users\LAB>python --version
Python 3.7.0

C:\Users\LAB>
```

Enter the following command:

➤ pip install jupyter notebook



```
C:\Users\LAB>pip install jupyter notebook
Requirement already satisfied: jupyter in c:\users\lab\appdata\local\programs\python\python37\lib\site-packages (1.0.0)
Requirement already satisfied: notebook in c:\users\lab\appdata\local\programs\python\python37\lib\site-packages (6.5.7)
Requirement already satisfied: qtconsole in c:\users\lab\appdata\local\programs\python\python37\lib\site-packages (from jupyter) (5.4.4)
Requirement already satisfied: jupyter-console in c:\users\lab\appdata\local\programs\python\python37\lib\site-packages (from jupyter) (6.6.3)
Requirement already satisfied: nbconvert in c:\users\lab\appdata\local\programs\python\python37\lib\site-packages (from jupyter) (7.6.0)
Requirement already satisfied: ipykernel in c:\users\lab\appdata\local\programs\python\python37\lib\site-packages (from jupyter) (6.16.2)
Requirement already satisfied: ipywidgets in c:\users\lab\appdata\local\programs\python\python37\lib\site-packages (from jupyter) (8.1.3)
Requirement already satisfied: Jinja2 in c:\users\lab\appdata\local\programs\python\python37\lib\site-packages (from notebook) (3.1.4)
Requirement already satisfied: tornado>=6.1 in c:\users\lab\appdata\local\programs\python\python37\lib\site-packages (from notebook) (6.2)
Requirement already satisfied: pyzmq>=17 in c:\users\lab\appdata\local\programs\python\python37\lib\site-packages (from notebook) (26.1.1)
Requirement already satisfied: argon2-cffi in c:\users\lab\appdata\local\programs\python\python37\lib\site-packages (from notebook) (23.1.0)
```

Enter the following command:

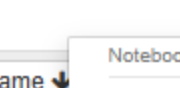
➤ python -m notebook

$\begin{array}{ccccccc} \bar{1} & \bar{1} & \bar{1} & - & - & - & \bar{1} \\ | & | & | & & & & | \\ | & | & | & , & \vee & , & / \\ \backslash & - & / & | & \wedge & , & \backslash \\ & | & & & & & \backslash \\ & & & & & & \backslash \end{array}$

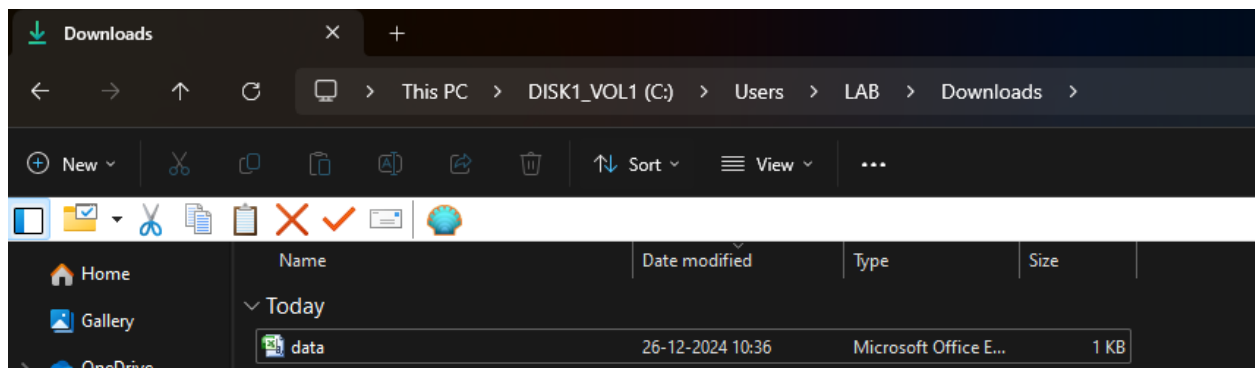
https://jupyter-notebook.readthedocs.io/en/latest/migrate_to_notebook7.html

```
[I 10:21:52.490 NotebookApp] Serving notebooks from local directory: C:\Users\LAB
[I 10:21:52.490 NotebookApp] Jupyter Notebook 6.5.7 is running at:
[I 10:21:52.490 NotebookApp] http://localhost:8888/?token=280f777b4e22d879c776e9eb35d05f2c8a1c9a637a2b35cf
[I 10:21:52.491 NotebookApp] or http://127.0.0.1:8888/?token=280f777b4e22d879c776e9eb35d05f2c8a1c9a637a2b35cf
[I 10:21:52.491 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 10:21:52.544 NotebookApp]
```

To access the notebook, open this file in a browser:
 file:///C:/Users/LAB/AppData/Roaming/jupyter/runtime/nbserver-3452-open.html
 Or copy and paste one of these URLs:
 http://localhost:8888/?token=280f777b4e22d879c776e9eb35d05f2c8a1c9a637a2b35cf
 or http://127.0.0.1:8888/?token=280f777b4e22d879c776e9eb35d05f2c8a1c9a637a2b35cf

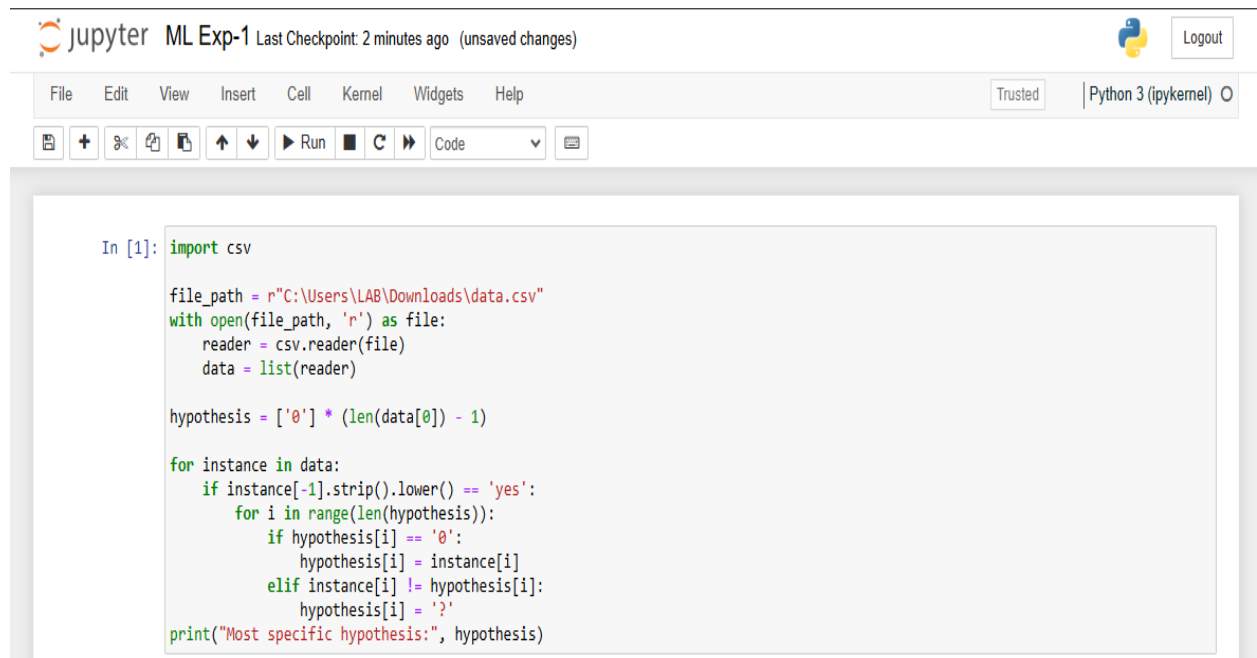


(copy data.csv file from user and paste it in your downloads)



Open the jupyter notebook file:

Write the following code



Jupyter ML Exp-1 Last Checkpoint: 2 minutes ago (unsaved changes) Logout

File Edit View Insert Cell Kernel Widgets Help Trusted Python 3 (ipykernel)

```
In [1]: import csv

file_path = r"C:\Users\LAB\Downloads\data.csv"
with open(file_path, 'r') as file:
    reader = csv.reader(file)
    data = list(reader)

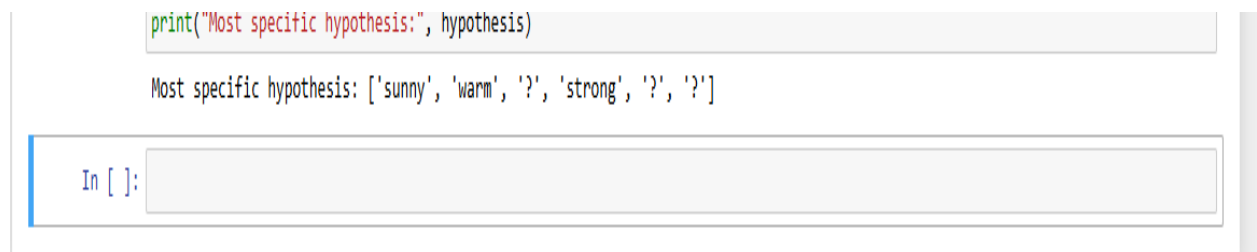
hypothesis = ['0'] * (len(data[0]) - 1)

for instance in data:
    if instance[-1].strip().lower() == 'yes':
        for i in range(len(hypothesis)):
            if hypothesis[i] == '0':
                hypothesis[i] = instance[i]
            elif instance[i] != hypothesis[i]:
                hypothesis[i] = '?'
print("Most specific hypothesis:", hypothesis)
```

To run code:

Click `:` (shift+enter)

Output:



```
print("Most specific hypothesis:", hypothesis)

Most specific hypothesis: ['sunny', 'warm', '?', 'strong', '?', '?']

In [ ]:
```