



# **Experiment Number: 6 & 7**

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Branch: CSE-AIML Section/Group: 21AML-9 (A)

Semester: 3rd Date of Performance: 12th October,2022

Subject Code: 21CSH-238 Subject Name: Python for Machine Learning

#### 1. Aim/Overview of the practical:

i). Create a dataframe that contains the student details (10 rows). It must contain 6 columns - UId, Name, Name\_of\_Program, Phone\_No, City and E-mail\_id. Create the values using Dictionary of series.

- **ii).** Add a new Column 'marks' in the existing dataset and values in all the rows. Create 4 division A, B, C and D and show the distribution of marks for the same.
- **iii).** Create a dataset of country details and its population (5 rows) and represent them in the form of a pie chart.

### 2. Software Used:

Google Colab and VS Code.

**3.** 

## Program: i

A. <u>Aim</u>: Create a dataframe that contains the student details (10 rows). It must contain 6 columns - UId, Name, Name\_of\_Program, Phone\_No, City and E-mail\_id. Create the values using Dictionary of series.







В.	<b>Program Code:</b> import csv import pandas as pd print("Creating dataframe using a list\n") data
	$= list(csv.reader(open('data.csv'))) \ df1 = pd.DataFrame(data[1:], columns=data[0]) \ print(df1)$
	print('')
	<pre>print("Creating dataframe using a dictionary\n") dic1 = {}</pre>
	for count, key in enumerate(data[0]): dic1[key] = [value[count] for value in data[1:]]
	df2 = pd.DataFrame(dic1) print(df2)

C. Output:





	uid	name	name of programn	phone no	city	email id	marks
9	6659	Akrit	AIML	9805240621	California	a@gmail.com	98
ı	6670	Sanchit	CSE	019722	Delhi	s@gmail.com	89
2	6570	Uday	AIML	543345	Jaipur	u@gmail.com	95
3	6626	Shubham	General CSE	788963	Chandigarh	d@gmail.com	99
1	6632	Anmo1	AIML	267897	New York	as@gmail.com	92
5	6664	Rishav	MBA	438875	Delhi	r@gmail.com	98
6	6685	Millium	Hotel Management	569292	Los angeles	m@gmail.com	90
7	3791	Sahil	BD	560923	Chandigarh	sv@gmail.com	92
3	3850	Arpit	BD	287652	Delhi	sa@gmail.com	93
9	6394	Yashika	AIML	329843	Chandigarh	y@gmail.com	97
Ľ	eating	datafram	e using a dictiona	iry			
CF	eating uid	datafram name	e using a dictiona name of programn	phone no	city	email id	marks
					city California	email id a@gmail.com	marks 98
Э	uid	name	name of programn	phone no			
ð 1	uid 6659	name Akrit	name of programn AIML	phone no 9805240621	California	a@gmail.com	98
a 1 2	uid 6659 6670	name Akrit Sanchit	name of programn AIML CSE	phone no 9805240621 019722	California Delhi	a@gmail.com s@gmail.com	98 89
0 1 2 3	uid 6659 6670 6570	name Akrit Sanchit Uday	name of programn AIML CSE AIML	phone no 9805240621 019722 543345	California Delhi Jaipur	a@gmail.com s@gmail.com u@gmail.com	98 89 95
0 1 2 3	uid 6659 6670 6570 6626	name Akrit Sanchit Uday Shubham	name of programn AIML CSE AIML General CSE	phone no 9805240621 019722 543345 788963	California Delhi Jaipur Chandigarh	a@gmail.com s@gmail.com u@gmail.com d@gmail.com	98 89 95 99
0 1 2 3 4	uid 6659 6670 6570 6626 6632	name Akrit Sanchit Uday Shubham Anmol	name of programn AIML CSE AIML General CSE AIML	phone no 9805240621 019722 543345 788963 267897	California Delhi Jaipur Chandigarh New York	a@gmail.com s@gmail.com u@gmail.com d@gmail.com as@gmail.com	98 89 95 99 92
0 1 2 3 4 5	uid 6659 6670 6570 6626 6632 6664	name Akrit Sanchit Uday Shubham Anmol Rishav	name of programn AIML CSE AIML General CSE AIML MBA	phone no 9805240621 019722 543345 788963 267897 438875	California Delhi Jaipur Chandigarh New York Delhi Los angeles Chandigarh	a@gmail.com s@gmail.com u@gmail.com d@gmail.com as@gmail.com r@gmail.com m@gmail.com	98 89 95 99 92 98
0 1 2 3 4 5 6 7 8	uid 6659 6670 6570 6626 6632 6664 6685	name Akrit Sanchit Uday Shubham Anmol Rishav Millium	name of programn AIML CSE AIML General CSE AIML MBA Hotel Management	phone no 9805240621 019722 543345 788963 267897 438875 569292	California Delhi Jaipur Chandigarh New York Delhi Los angeles	a@gmail.com s@gmail.com u@gmail.com d@gmail.com as@gmail.com r@gmail.com	98 89 95 99 92 98

## Program: ii

A. <u>Aim</u>: Add a new Column 'marks' in the existing dataset and values in all the rows.

Create 4 division A, B, C and D and show the distribution of marks for the same.

B. <u>Program Code</u>: import csv import pandas as pd data = list(csv.reader(open('data.csv')))

 $dic1 = \{\}$ 







```
for count, key in enumerate(data[0]): dic1[key] =
   [(value[count]) for value in data[1:]] dic1['marks']
   = list(map(int, dic1['marks']))
   df = pd.DataFrame.from_dict(dic1, orient='index') print(df)
   print('----')
   above80 = []
   print('Data for students with above marks 80') for
   i in range(len(df.columns)):
     if int(df[i]['marks']) > 80:
       above80.append(df[i])
   print(pd.concat(above80, axis=1))
   print('----')
   df = pd.DataFrame.from_dict(dic1)
   a = df[(df['marks']) > 95]
   print(f"Data for students with marks above 95:\n{a}") print('-----')
   b = df[(df['marks'] > 80) & (df['marks'] <= 95)]
   print(f"Data for students with marks above 80 and below 95:\n{b}") print('------
   ·····)
   c = df[(df['marks'] > 60) & (df['marks'] <= 80)]
   print(f"Data for students with marks above 60 and below 80:\n{c}") print('------
   ----')
   d = df[(df['marks'] > 40) & (df['marks'] <= 60)]
   print(f"Data for students with marks above 40 and below 60:\n{d}")
C. Output:
```





PS C:\VS Code\main	n.py> python	-u "c:\VS Cod	e\main.py\res	ult b	y_csv.py"				
	0	1	2		7	8	9		
uid	6659	6670	6570		3791	3850	6394		
name	Akrit	Sanchit	Uday		Sahil	Arpit	Yashika		
name of programn	AIML	CSE	AIML		BD	BD	AIML		
phone no	9805240621	019722	543345		560923	287652	329843		
city	California	Delhi	Jaipur		Chandigarh	Delhi	Chandigarh		
email id	a@gmail.com	s@gmail.com	u@gmail.com		sv@gmail.com	sa@gmail.com	y@gmail.com		
marks	98	89	94		78	59	97		
[7 rows x 10 colu	[7 rows x 10 columns]								
Data for students	with above m	arks 80							
	0	1	2		5		6 9		
uid	6659	6670	6570		6664	66			
name	Akrit	Sanchit	Uday		Rishav	Milli			
name of programn	AIML	CSE	AIML		MBA	Hotel Manageme	nt AIML		
phone no	9805240621	019722	543345		438875	5692	92 329843		
city	California	Delhi	Jaipur		Delhi	Los angel	es Chandigarh		
	a@gmail.com	s@gmail.com			r@gmail.com		om y@gmail.com		
marks	98	89	94		98		90 97		
[7 rows x 8 column		- above OF							
		Data for students with marks above 95:							
utu Hallic		vanama nho	no no		omail ic	manke			
	e name of pro		one no						
0 6659 Akrit	i .	AIML 98052	40621 Calif	ornia	a@gmail.com	ı 98			
0 6659 Akrit 3 6626 Shubhan	t n Genera	AIML 98052 al CSE 7	.40621 Calif 788963 Chand	ornia igarh	a@gmail.com d@gmail.com	ı 98 ı 99			
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0 6659 Akrit 3 6626 Shubham 5 6664 Risham 9 6394 Yashika Data for student uid name 1 6670 Sanchit 2 6570 Uday 4 6632 Anmol 6 6685 Millium Data for student uid name r 7 3791 Sahil Data for student	General Genera	AIML 98052 al CSE 7 MBA 4 AIML 3 above 80 an rogramn phone CSE 019 AIML 543 AIML 267 agement 569 a above 60 a ramn phone no BD 560923 a above 40 a ramn phone no	240621 Calif 288963 Chand 238875 229843 Chand 24 below 95: 25 no 2722 D 2345 Ja 2897 New 2292 Los ang 292 Los ang 293 Chandigarh	ornia igarh Delhi igarh city elhi ipur York eles sv@	a@gmail.com d@gmail.com r@gmail.com y@gmail.com email id s@gmail.com u@gmail.com as@gmail.com email id ma gmail.com	98 99 98 97 1 97 1 marks 99 1 94 1 92 1 90			

# Program: iii









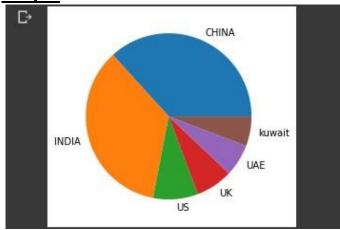


# A. <u>Aim</u>: Create a dataset of country details and its population (5 rows) and represent them in the form of a pie chart. B. <u>Program Code</u>:

import pandas as pd import matplotlib.pyplot as plt import numpy as np

country=['CHINA', 'INDIA', 'US', 'UK', 'UAE', 'kuwait'] data=[1397897728, 1339330514, 332475723, 275122131,238181034, 219463862]; plt.pie(data, labels =country) plt.show()

C. Output:



## **Learning outcomes (What I have learnt):**

- Knowledge of pandas library.
- Pandas Series.
- Pandas Dataframe.

**Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):** 







Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Viva		10
2.	Performance		12
3.	Worksheet		8

