

JAIPURIA INSTITUTE OF MANAGEMENT, NOIDA
PGDM / PGDM (M) / PGDM (SM)
FOURTH TRIMESTER (Batch 2020-22)
END TERM EXAMINATIONS, OCTOBER, 2021, SET - II

Course Name	Programming for Business Analytics (PBA)	Course Code	BA-402
Max. Time	2 hours	Max. Marks	40 MM

INSTRUCTIONS:

- Students are required to work on their own personal Laptop. This is an open book exam
- Attempt all the questions on a single Jupyter Notebook
- The data for the case is available on Moodle.
- Write down your Roll no., course name and code on top of Jupyter Notebook
- Save your Jupyter notebook with .ipynb extension and as pdf file
- Upload both the files on Moodle.
- Label the files as PBA_roll no.

Q 1: List and Tuples are two data types that exist in Python. Create small data relevant to business to illustrate their applications? **(10 Marks)**

Q 2: Read the following case

Case: Employee Attrition

YSolutions is a Business Process Outsourcing (BPO) unit which has its office located in Noida, UP, India. The company is facing lot of attrition, i.e., the employees of the company have left the job during the past one year. Due to which company has to face many difficulties. Therefore, the HR manager of the Company decided to analyze the data of the Employees to understand the reasons of employees leaving the company. Data collected for 118 employees of the Noida office is contained in the file named Empdata. Table 1 shows a portion of the data set. "Yes" value in the attrition column indicates the employee has left the company and vice-versa for a value of "no". job involvement, job satisfaction and performance rating are measured on a five-point rating scale, where 1 indicates "low" and 5 indicates "high". Rest of the variables shown in table 1 are self-explanatory.

Table 1 Employee Data

EmpID	Age	BusinessTravel	Department	DistanceFrom Home	Gender	JobInvolvement	JobSatisfaction	PerformanceRating	MonthlyIncome	Attrition
1	41	Travel_Rarely	Sales	1	Female	3	4	3	5993	Yes
2	41	Travel_Rarely	Sales	1	Female	3	4	3	5993	Yes
3	37	Travel_Rarely	Research & Development	2	Male	2	3	3	2090	Yes
4	37	Travel_Rarely	Research & Development	2	Male	2	3	3	2090	Yes
5	28	Travel_Rarely	Research & Development	24	Male	2	3	3	2028	Yes
6	36	Travel_Rarely	Sales	9	Male	2	1	4	3407	Yes
7	34	Travel_Rarely	Research & Development	6	Male	3	1	3	2960	Yes
8	32	Travel_Frequently	Research & Development	16	Female	1	1	4	3919	Yes
9	39	Travel_Rarely	Sales	5	Male	3	4	3	2086	Yes
10	24	Travel_Rarely	Research & Development	1	Male	3	4	3	2293	Yes
11	50	Travel_Rarely	Sales	3	Male	2	3	3	2683	Yes
12	26	Travel_Rarely	Research & Development	25	Male	1	3	3	2293	Yes

YSolutions's Management would like to use the employee data to learn about its employee base and to find out reasons for attrition.

YSolutions has hired you as a Data Scientist. You are required to create a managerial report by analyzing the data by employing descriptive analytics techniques to help management develop an employee profile and to evaluate reasons for attrition. **(30 Marks)**

Note: You are required to illustrate every output with the interpretation mentioned as comments on the Jupyter notebook. Distribution of marks will be based on the coverage of data analysis performed.