

**1. Iris dataset file is given to you. Perform following tasks on the given dataset.**

**1.1. Calculate the percentage of total data points missing. [10]**

**1.2. Calculate the feature wise percentage of total data points missing. [10]**

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**2. Use following techniques to handle missing data. [60]**

**a. mean imputation:** Fill the missing value with the mean of that column. [10]

**b. Class-wise mean imputation:** Calculate class-wise mean of that column. Fill missing value as per the class label. [10]

**c. KNN imputation [K=5]:** Implement KNN imputation by calculating distances between data points (using metrics like Euclidean distance on available features), finding the k nearest neighbors for a point with missing data, and then averaging their values to fill missing data. [20]

**Compare the statistics after applying each imputations. Write your conclusion. [20]**

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**3. A list of DOBs given to you in a txt file. [20]**

**Convert all the DOBs in one common format:- YYYY-MM-DD**

**Example:-**

04-09-1978 → 1978-09-04  
Dec 11, 2001 → 2001-12-11  
1995/10/21 → 1995-10-21

**Display the output.**

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