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| **Python and JavaScript - ATM Application:** Design a HTML form that displays user’s current balance, an input field to enter amount and buttons to withdraw or deposit money. Validate the form such thatnegative amount cannot be entered and Users cannot withdraw more than 5000 at one time. The maximum number of transactions is 5. |
| a) Load the ‘Student Performance’ dataset into one of the data structures (NumPy or Pandas).  b)Display header rows and description of the loaded dataset.  c) Remove unnecessary features (E.g. drop unwanted columns) from the dataset such as ‘lunch’ and ‘test preparation course’ .  d) Manipulate data by replacing empty column values in ‘parental level of education’ with a default value.  e) Convert the attribute ‘race/ethnicity’ to have ‘groupA’ to be ‘Asian Students’, ‘groupB’ to be ‘African Students’ , ‘groupC’ to be ‘Afro-Asian Students’, ‘groupD’ to be ‘American Students’ and ‘groupE’ to be ‘European Students’.  f) Perform the following visualizations on the loaded dataset:   * Tally of the Number of Male & Female students who took up the ‘test preparation course’ and those who did not. * Total Number of Male & Female Students belonging to each student group * No of students who ‘failed’(less than 40), ‘second class’(between 40 & 50).   ‘first class’(between 60 & 75) and ‘distinction’(above 75) in ‘Maths’,  ‘Reading’ and ‘Writing’.  g) Find the average Maths, Reading and Writing Score of each Group (Ethnicity) |
| **Python and JavaScript - Shopping Cart Application**: Design a simple Shopping Cart application which allows users to add items to their cart from a list of products. Allow users to view their cart (items and quantities of each) . |
| a)Load the ‘Black Friday’ dataset into one of the data structures (NumPy or Pandas).  b)Display header rows and description of the loaded dataset.  c) Remove unnecessary features (E.g. drop unwanted columns) from the dataset such as ‘User\_ID’, ‘Product\_ID ‘ ‘Stay\_In\_Current\_City\_Years’ .  d) Manipulate data by replacing empty column values in ‘City\_Category’ with a default value for the city.  e) Rename the attribute ‘City\_Category’ to have ‘A’ to be ‘Metro Cities’, ‘B’ to be ‘Small Towns’ , ‘C’ to be ‘Villages’.  f) Rename the attribute ‘Product\_Category\_1’ to have ‘Baseball Caps’, ‘Product\_Category\_2’ to have ‘Wine Tumblers’ and ‘Product\_Category\_3’ to have ‘Pet Raincoats’  g) Convert the attribute ‘Marital\_Status’ to have ‘1:Married’ and ‘0:Un-Married’  h) Perform the following visualizations on the loaded dataset:  i) Tally of the Number of Male & Female persons who bought ‘Product\_Category\_1’ and ‘Product\_Category\_2’.  ii) Total Number of Male & Female persons belonging to each city category |
| **Python and JavaScript – Student Registration:** Design a HTML form that displays   * Two text fields to input the user’s USN and Date of Birth. * Three text boxes to input three marks.   Validate the data entry on the server side using Javascript so that null values are not accepted for all the five text boxes.  Validate the entry on server-side using Python to ensure that USN is accepted in a proper pattern as well as date validations are done.  Calculate the average using Python on server-side and display the result. |
| Python for Data Science - Perform Data Visualization on Iris Dataset  a)Load the Titanic dataset into one of the data structures (NumPy or Pandas). b)Display header rows and description of the loaded dataset.  c) Clean the data if applicable  d) Find the average petal width of each category of IRIS Species  e) Data Visualization for:  (i) How many flowers of each species exists for each value of sepal width  (ii) How many flowers are there whose petal width is <1, between 1 to 2 and >2  (iii) the Iris-Versicolour and Iris-Virginica species according to the value of Sepal Width. |
| Python for Data Science - Perform Data Visualization on Titanic Dataset a)Load the Titanic dataset into one of the data structures (NumPy or Pandas). b)Display header rows and description of the loaded dataset. c)Remove unnecessary features (E.g. drop unwanted columns) from the dataset. d)Manipulate data by replacing empty column values with a default value. e)Perform the following visualizations on the loaded dataset:  i)Passenger status (Survived/Died) against Passenger Class  ii)Survival rate of male vs female  iii) No of passengers in each age group |