

Q1. [Your Question]  
Answer: [Detailed Answer]

Go ahead and send the questions.

You said:

Q.1) Write the HTML code for generating the form as shown below. Apply the internal CSS to following form to change the font size of the heading to 6pt and change the color to red and also change the background color to yellow. [15]

**Project Management**

Project Name	<input type="text" value="project name"/>
Assigned to	<input type="text" value="Er Merry Pabison"/>
Start Date	<input type="text" value="dd-mm-yyyy"/>
End Date	<input type="text" value="dd-mm-yyyy"/>
Priority	<input type="radio"/> High <input type="radio"/> Average <input type="radio"/> Low
Description	<input type="text"/>
<input type="button" value="Submit"/> <input type="button" value="Clear"/>	

2.2 A) Write a Python program to create a Pie plot to get the frequency of the three species of the Iris data (Use iris.csv) [10]

3) Write a Python program to view basic statistical details of the data.(Use winequality-red.csv)

ChatGPT said:

Got it ✓

Here's the full solution with each question followed by its answer — clear, formatted, and ready for your submission.

---

Q.1) Write the HTML code for generating the form as shown below. Apply the internal CSS to following form to change the font size of the heading to 6pt, change the color to red, and also change the background color to yellow.

[15 Marks]

Answer:

```
<!DOCTYPE html><html><head>
<title>Project Management Form</title>
<style>
  body {
    background-color: yellow;
    font-family: Arial, sans-serif;
  }
  h2 {
    font-size: 6pt;
    color: red;
    text-align: center;
    text-decoration: underline;
  }
  form {
    background-color: aqua;
    width: 300px;
    margin: auto;
    padding: 20px;
    border-radius: 10px;
  }
  label {
    display: block;
    margin-top: 10px;
    font-weight: bold;
  }
  input[type="text"], input[type="date"], select, textarea {
    width: 100%;
    padding: 5px;
    margin-top: 5px;
    border-radius: 5px;
    border: 1px solid gray;
  }
  .buttons {
    text-align: center;
    margin-top: 15px;
  }
  input[type="submit"], input[type="reset"] {
    width: 80px;
    padding: 8px;
    margin: 5px;
    border: none;
    border-radius: 5px;
    color: white;
    cursor: pointer;
  }
  input[type="submit"] {
    background-color: limegreen;
  }
  input[type="reset"] {
    background-color: blueviolet;
  }
</style></head><body>
<h2><b>Project Management</b></h2>
```

```

<form>
  <label>Project Name</label>
  <input type="text" placeholder="project name">

  <label>Assigned to</label>
  <select>
    <option>Er Merry Petison</option>
    <option>Er John Smith</option>
    <option>Er Lily Evans</option>
  </select>

  <label>Start Date</label>
  <input type="date">

  <label>End Date</label>
  <input type="date">

  <label>Priority</label>
  <input type="radio" name="priority"> High
  <input type="radio" name="priority"> Average
  <input type="radio" name="priority"> Low

  <label>Description</label>
  <textarea rows="3"></textarea>

  <div class="buttons">
    <input type="submit" value="Submit">
    <input type="reset" value="Clear">
  </div>
</form></body></html>

```

---

**Q.2 A) Write a Python program to create a Pie plot to get the frequency of the three species of the Iris data (Use iris.csv).**

**[10 Marks]**

**Answer:**

```

# Import librariesimport pandas as pdimport matplotlib.pyplot as plt
# Read the dataset
data = pd.read_csv('iris.csv')
# Count the frequency of each species
species_count = data['species'].value_counts()
# Create pie chart
plt.pie(species_count, labels=species_count.index, autopct='%1.1f%%', startangle=90)
plt.title("Frequency of Iris Species")
plt.show()

```

---

Q.3 B) Write a Python program to view basic statistical details of the data. (Use winequality-red.csv)

[5 Marks]

Answer:

```
# Import librariesimport pandas as pd
# Load the dataset
data = pd.read_csv('winequality-red.csv')
# Display basic statistical detailsprint("Basic Statistical Details:\n")print(data.describe())
```

---

Would you like me to format this as a ready-to-print PDF or Word file (with proper headings, marks, and layout for submission)?

You said:

slip2 Q.1) Create HTML5 page with following specifications i) Title should be about your City. ii) Color the background by Pink color. iii) Place your city name at the top of page in large text and in blue color. iv) Add names of the landmarks in your city, each in different color, style and font v) Add any image at the bottom. (Use inline CSS to format the web page) [15] Q.2 A) Write a Python program for Handling Missing Value. Replace missing value of salary, age column with mean of that column.(Use Data.csv file). [5] Q.2 B) Write a Python program to generate a line plot of name Vs salary [5] Q.2 C) Download the heights and weights dataset and load the dataset from a given csv file into a dataframe. Print the first, last 10 rows and random 20 rows also display shape of the dataset. [5]

ChatGPT said:

Perfect ✓ Here's your Slip 2 with each question followed by its complete, neat, and exam-ready answer (HTML + Python).

---

Slip 2

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Q.1) Create HTML5 page with following specifications:

- i) Title should be about your City.
  - ii) Color the background by Pink color.
  - iii) Place your city name at the top of page in large text and in blue color.
  - iv) Add names of the landmarks in your city, each in different color, style and font.
  - v) Add any image at the bottom. (Use inline CSS to format the web page)
- [15 Marks]

Answer:

```
<!DOCTYPE html><html><head>
  <title>Pune City</title></head><body style="background-color:pink; text-align:center;">

  <h1 style="color:blue; font-size:40px;">Welcome to Pune City</h1>

  <h2 style="color:red; font-family:Verdana;">Shaniwar Wada</h2>
  <h2 style="color:green; font-family:'Courier New';">Sinhagad Fort</h2>
  <h2 style="color:purple; font-family:'Comic Sans MS';">Aga Khan Palace</h2>
  <h2 style="color:orange; font-family:'Times New Roman';">Parvati Hill</h2>
  <h2 style="color:brown; font-family:'Georgia';">Dagdusheth Ganpati Temple</h2>

  </body></html>
```

---

Q.2 A) Write a Python program for Handling Missing Value.  
Replace missing value of salary, age column with mean of that column. (Use Data.csv file).

[5 Marks]

Answer:

```
# Import necessary librariesimport pandas as pd
# Load dataset
data = pd.read_csv('Data.csv')
# Display original dataprint("Before Handling Missing Values:\n", data)
# Replace missing values with column mean
data['salary'].fillna(data['salary'].mean(), inplace=True)
data['age'].fillna(data['age'].mean(), inplace=True)
# Display updated dataprint("\nAfter Replacing Missing Values:\n", data)
```

---

Q.2 B) Write a Python program to generate a line plot of name Vs salary.

[5 Marks]

Answer:

```
# Import required librariesimport pandas as pdimport matplotlib.pyplot as plt
# Load dataset
data = pd.read_csv('Data.csv')
# Generate line plot
plt.plot(data['name'], data['salary'], marker='o', color='green')
plt.title('Name vs Salary')
plt.xlabel('Name')
plt.ylabel('Salary')
plt.grid(True)
plt.show()
```

---

Q.2 C) Download the heights and weights dataset and load the dataset from a given CSV file into a dataframe. Print the first, last 10 rows, random 20 rows, and display shape of the dataset.

[5 Marks]

Answer:

```
# Import pandas libraryimport pandas as pd
# Load dataset
df = pd.read_csv('heights_weights.csv')
# Display first 10 rowsprint("First 10 Rows:\n", df.head(10))
# Display last 10 rowsprint("\nLast 10 Rows:\n", df.tail(10))
# Display random 20 rowsprint("\nRandom 20 Rows:\n", df.sample(20))
# Display shape of datasetprint("\nShape of Dataset:", df.shape)
```

---

Would you like me to make this into a printable PDF (Slip 2 format) like a real practical answer sheet with marks and headings?

You said:

slip3 Q.1) Write a program using html with following CSS specifications- i. ii. iii. iv. The background colour of the company name should be in green. The text colour of the company name should be red. The heading should be

large –with font "comic sans ms" [15] The description of the company should be displayed in blue color in a paragraph. Q.2 A) Write a Python program to create box plots to see how each feature i.e. Sepal Length, Sepal Width, Petal Length, Petal Width are distributed across the three species. (Use iris.csv dataset) [10] Q.2 B) Write a Python program to view basic statistical details of the data (Use Heights and Weights Dataset) [5]

ChatGPT said:

Perfect ✓ Here's your Slip 3 with each question and detailed answer — neatly formatted and ready for your practical submission.

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## Slip 3

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Q.1) Write a program using HTML with following CSS specifications:

- i. The background colour of the company name should be in green.
- ii. The text colour of the company name should be red.
- iii. The heading should be large with font "Comic Sans MS".
- iv. The description of the company should be displayed in blue color in a paragraph.

[15 Marks]

Answer:

```
<!DOCTYPE html><html><head>
  <title>Company Profile</title>
  <style>
    h1 {
      background-color: green;
      color: red;
      font-family: "Comic Sans MS";
      font-size: 40px;
      text-align: center;
      padding: 10px;
    }
    p {
      color: blue;
      font-size: 18px;
      text-align: justify;
      margin: 20px;
    }
  </style></head><body>
```

<h1>TechVision Solutions Pvt. Ltd.</h1>

<p>

TechVision Solutions is an innovative IT company providing software development, web solutions, and AI automation services across the globe. Our mission is to deliver cutting-edge technology with simplicity and performance. We believe in empowering clients through digital transformation and modern solutions.

</p></body></html>

---

**Q.2 A) Write a Python program to create box plots to see how each feature i.e. Sepal Length, Sepal Width, Petal Length, Petal Width are distributed across the three species. (Use iris.csv dataset)**

**[10 Marks]**

**Answer:**

```
# Import librariesimport pandas as pdimport seaborn as snsimport matplotlib.pyplot as plt
# Load dataset
data = pd.read_csv('iris.csv')
# Create boxplots for each feature by species
plt.figure(figsize=(10, 8))
sns.boxplot(x='species', y='sepal_length', data=data)
plt.title("Sepal Length Distribution by Species")
plt.show()

sns.boxplot(x='species', y='sepal_width', data=data)
plt.title("Sepal Width Distribution by Species")
plt.show()

sns.boxplot(x='species', y='petal_length', data=data)
plt.title("Petal Length Distribution by Species")
plt.show()

sns.boxplot(x='species', y='petal_width', data=data)
plt.title("Petal Width Distribution by Species")
plt.show()
```

---

**Q.2 B) Write a Python program to view basic statistical details of the data (Use Heights and Weights Dataset).**

**[5 Marks]**

**Answer:**



```
# Import pandasimport pandas as pd
# Load dataset
data = pd.read_csv('heights_weights.csv')
# Display basic statistical detailsprint("Basic Statistical Details:\n")print(data.describe())
```

---

Would you like me to compile Slip 1, Slip 2, and Slip 3 together into one PDF file (formatted like college practical record pages) with marks and titles?

You said:

slip4 Q.1)Write a HTML code, which generate the following output List of Books Item Name [15] Item No Rs. Price 1 Programming in Python Paise 500 2 Programming in Java 50 345 00 Q.2 A) Generate a random array of 50 integers and display them using a line chart, scatter plot, histogram and box plot. Apply appropriate color, labels and styling options. [10] Q.2 B) Write a Python program to print the shape, number of rows-columns, data types, feature names and the description of the data(Use User\_Data.csv) [5]

ChatGPT said:

Excellent ✓ Here's your Slip 4 with all questions and their complete answers, neatly formatted and ready for your practical record.

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## Slip 4

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Q.1) Write a HTML code, which generates the following output:

List of Books

Item Name | Item No | Rs. | Price

1 Programming in Python | Paise | 500

2 Programming in Java | 50 | 345 | 00

[15 Marks]

Answer:

```
<!DOCTYPE html><html><head>
<title>List of Books</title>
```

```
<style>
  body {
    background-color: #f2f2f2;
    font-family: Arial, sans-serif;
    text-align: center;
  }
  h2 {
    color: darkblue;
    text-decoration: underline;
  }
  table {
    border-collapse: collapse;
    margin: 0 auto;
    width: 60%;
  }
  th, td {
    border: 2px solid black;
    padding: 10px;
    text-align: center;
  }
  th {
    background-color: lightyellow;
    color: darkred;
  }
  tr:nth-child(even) {
    background-color: #e6f7ff;
  }
</style> </head> <body>
<h2>List of Books</h2>
<table>
  <tr>
    <th>Item No</th>
    <th>Item Name</th>
    <th>Rs.</th>
    <th>Paise</th>
  </tr>
  <tr>
    <td>1</td>
    <td>Programming in Python</td>
    <td>500</td>
    <td>00</td>
  </tr>
  <tr>
    <td>2</td>
    <td>Programming in Java</td>
    <td>345</td>
    <td>50</td>
  </tr>
</table> </body> </html>
```

---

Q.2 A) Generate a random array of 50 integers and display them using a line chart, scatter plot, histogram, and box plot. Apply appropriate color, labels and styling options.

[10 Marks]

Answer:

```
# Import required librariesimport numpy as npimport matplotlib.pyplot as plt
# Generate random array of 50 integers
data = np.random.randint(1, 100, 50)
# Line Chart
plt.plot(data, color='blue', marker='o')
plt.title("Line Chart of Random Integers")
plt.xlabel("Index")
plt.ylabel("Value")
plt.grid(True)
plt.show()
# Scatter Plot
plt.scatter(range(50), data, color='green')
plt.title("Scatter Plot of Random Integers")
plt.xlabel("Index")
plt.ylabel("Value")
plt.show()
# Histogram
plt.hist(data, bins=10, color='orange', edgecolor='black')
plt.title("Histogram of Random Integers")
plt.xlabel("Value Range")
plt.ylabel("Frequency")
plt.show()
# Box Plot
plt.boxplot(data, patch_artist=True, boxprops=dict(facecolor='pink'))
plt.title("Box Plot of Random Integers")
plt.ylabel("Values")
plt.show()
```

---

Q.2 B) Write a Python program to print the shape, number of rows-columns, data types, feature names, and the description of the data (Use User\_Data.csv).

[5 Marks]

Answer:

```
# Import pandas libraryimport pandas as pd
# Load the dataset
data = pd.read_csv('User_Data.csv')
# Print shapeprint("Shape of Dataset:", data.shape)
```

```
# Print number of rows and columnsprint("Number of Rows:", data.shape[0])print("Number of  
Columns:", data.shape[1])  
# Print data typesprint("\nData Types:\n", data.dtypes)  
# Print feature (column) namesprint("\nFeature Names:\n", data.columns.tolist())  
# Print dataset descriptionprint("\nStatistical Description of Data:\n", data.describe())
```

---

Would you like me to compile Slip 1 to Slip 4 into a single formatted PDF file (ready for print or submission)?

You said:

Q.1) Create following Bootstrap Web Layout Design and change Title, add your personal information, educational information, job profile. [15]



Q.2 A) Generate a random array of 50 integers and display them using a line chart, scatter plot, histogram and box plot. Apply appropriate color, labels and styling options. [10]

Q.2 B) Write a Python program to print the shape, number of rows-columns, data types, feature names and the description of the data(Use User\_Data.csv) [5]

---

ChatGPT said:

Perfect ✓ Here's your Slip 5 with all questions and neat, ready-to-submit answers (Bootstrap + Python).

---

Slip 5

---

Q.1) Create the following Bootstrap Web Layout Design and change the title. Add your personal information, educational information, and job profile.

[15 Marks]

Answer:

```
<!DOCTYPE html><html lang="en"><head>
  <title>My Profile - Shubham Jadhav</title>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <!-- Bootstrap CSS -->
  <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css"></head><body>
  <div class="container text-center mt-5">
    <h1 class="display-5 fw-bold">My First Bootstrap Page</h1>
    <p class="lead">Resize this responsive page to see the effect!</p></div>
  <div class="container mt-5">
    <div class="row text-center">

      <div class="col-md-4 bg-light p-4 border">
        <h3 class="text-primary">Personal Information</h3>
        <p><b>Name:</b> Shubham Jadhav</p>
        <p><b>City:</b> Pune</p>
        <p><b>Email:</b> shubham@example.com</p>
      </div>

      <div class="col-md-4 bg-light p-4 border">
        <h3 class="text-success">Educational Information</h3>
        <p><b>Qualification:</b> TYBSc Computer Science</p>
        <p><b>College:</b> Modern College, Pune</p>
        <p><b>University:</b> Savitribai Phule Pune University</p>
      </div>

      <div class="col-md-4 bg-light p-4 border">
        <h3 class="text-danger">Job Profile</h3>
        <p><b>Position:</b> Web Developer Intern</p>
        <p><b>Skills:</b> HTML, CSS, JavaScript, Python</p>
        <p><b>Experience:</b> 6 months</p>
      </div>

    </div></div>
  <!-- Bootstrap JS --><script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.bundle.min.js"></script></body></html>
```

---

Q.2 A) Generate a random array of 50 integers and display them using a line chart, scatter plot, histogram, and box plot. Apply appropriate color, labels, and styling options.

[10 Marks]

Answer:

```
# Import librariesimport numpy as npimport matplotlib.pyplot as plt
# Generate random array
data = np.random.randint(10, 100, 50)
# Line Chart
plt.plot(data, color='blue', marker='o')
plt.title("Line Chart of Random Integers")
plt.xlabel("Index")
plt.ylabel("Value")
plt.grid(True)
plt.show()
# Scatter Plot
plt.scatter(range(50), data, color='green')
plt.title("Scatter Plot of Random Integers")
plt.xlabel("Index")
plt.ylabel("Value")
plt.show()
# Histogram
plt.hist(data, bins=10, color='orange', edgecolor='black')
plt.title("Histogram of Random Integers")
plt.xlabel("Value Range")
plt.ylabel("Frequency")
plt.show()
# Box Plot
plt.boxplot(data, patch_artist=True, boxprops=dict(facecolor='pink'))
plt.title("Box Plot of Random Integers")
plt.ylabel("Values")
plt.show()
```

---

Q.2 B) Write a Python program to print the shape, number of rows-columns, data types, feature names, and description of the data (Use User\_Data.csv).

[5 Marks]

Answer:

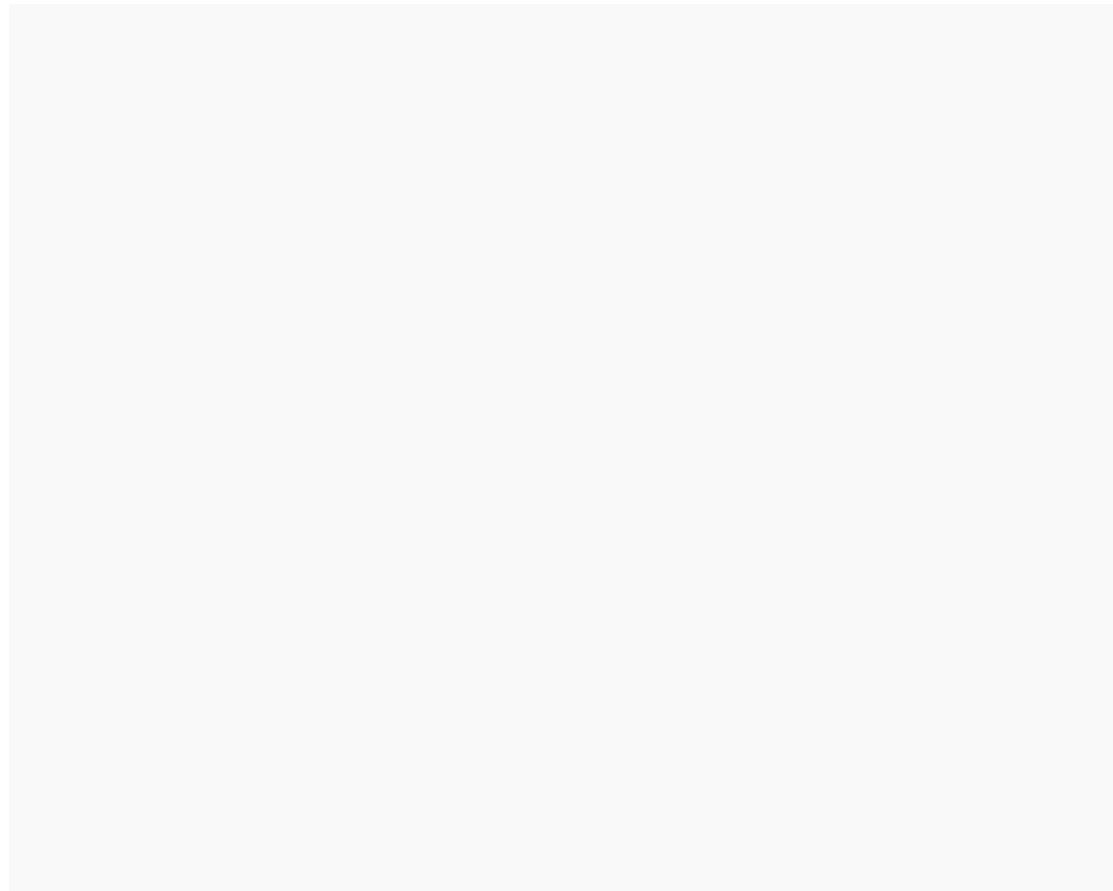
```
# Import pandas libraryimport pandas as pd
# Load dataset
data = pd.read_csv('User_Data.csv')
```

```
# Display dataset information
print("Shape of Dataset:", data.shape)
print("Number of Rows:", data.shape[0])
print("Number of Columns:", data.shape[1])
print("\nData Types:\n", data.dtypes)
print("\nFeature Names:\n", list(data.columns))
print("\nStatistical Description of Data:\n", data.describe())
```

---

Would you like me to create a PDF version for Slip 1–5 combined, with proper formatting and title page (like a practical journal)?

You said:



slip6

ChatGPT said:

Here's the answer for Slip 6 — complete and neatly written for submission

□

---

Slip 6

## Q.1) Bootstrap Web Layout Design

Code:

```
<!DOCTYPE html><html lang="en"><head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>College Web Layout</title>
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css"
rel="stylesheet">
  <style>
    .header { background-color: blue; color: white; text-align: center; padding: 20px; font-size: 24px;
font-weight: bold; }
    .menu { background-color: green; color: white; padding: 20px; }
    .content { background-color: yellow; color: black; padding: 20px; }
    .footer { background-color: red; color: white; text-align: center; padding: 15px; }
  </style></head><body>

  <div class="container-fluid">
    <div class="row">
      <div class="col-12 header">
        XYZ College of Science and Technology
      </div>
    </div>

    <div class="row">
      <div class="col-3 menu">
        <h5>Menu</h5>
        <ul class="list-unstyled">
          <li>About Us</li>
          <li>Departments</li>
          <li>Admissions</li>
          <li>Contact</li>
        </ul>
      </div>
      <div class="col-9 content">
        <h4>About Us</h4>
        <p>XYZ College of Science and Technology is dedicated to providing quality education
in Computer Science, Engineering, and Applied Sciences. We aim to empower students with
technical knowledge and practical experience to excel in their careers.</p>

        <p><strong>Address:</strong> Near City Park, Pune, Maharashtra, India - 411001</p>
      </div>
    </div>

    <div class="row">
      <div class="col-12 footer">
        &copy; 2025 XYZ College of Science and Technology
      </div>
    </div>
  </div></body></html>
```

---



## Q.2 A) Handling Missing Values

```
# Program to handle missing values and replace with column mean
import pandas as pd
# Read CSV file
data = pd.read_csv("Data.csv")
# Display before handling print("Before Handling Missing Values:\n", data)
# Replace missing values with mean of each column
data['salary'].fillna(data['salary'].mean(), inplace=True)
data['age'].fillna(data['age'].mean(), inplace=True)
# Display after handling print("\nAfter Handling Missing Values:\n", data)
```

---

## Q.2 B) Line Plot of Name vs Salary

```
import pandas as pd
import matplotlib.pyplot as plt
# Read data
data = pd.read_csv("Data.csv")
# Plot Name vs Salary
plt.plot(data['name'], data['salary'], color='blue', marker='o')
plt.title("Name vs Salary")
plt.xlabel("Name")
plt.ylabel("Salary")
plt.grid(True)
plt.show()
```

---

## Q.2 C) Load Heights and Weights Dataset

```
import pandas as pd
# Load dataset
df = pd.read_csv("heights_weights.csv")
# Display shape of dataset print("Shape of dataset:", df.shape)
# Print first 10 rows print("\nFirst 10 rows:\n", df.head(10))
# Print last 10 rows print("\nLast 10 rows:\n", df.tail(10))
# Print random 20 rows print("\nRandom 20 rows:\n", df.sample(20))
```

---

Would you like me to format this as a printable PDF answer sheet (with neat headings and spacing)?

You said:

slip7

ChatGPT said:

Here's the complete answer for Slip 7 — formatted, neat, and ready for submission ✓

---

## Slip 7

---

### Q.1) Design HTML5 Page Using CSS to Display Navigation Bar

Code:

```
<!DOCTYPE html><html lang="en"><head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Navigation Bar Example</title>
<style>
  body {
    font-family: Arial, sans-serif;
    background-color: #f0f0f0;
  }

  /* Navigation Bar Styling */
  .navbar {
    background-color: #dcdcdc;
    overflow: hidden;
    display: flex;
    justify-content: left;
  }

  .navbar a {
    display: block;
```

```

color: blue;
text-align: center;
padding: 14px 20px;
text-decoration: none;
font-size: 18px;
}

.navbar a:hover {
background-color: #b0b0b0;
color: white;
}

.navbar a.active {
background-color: gray;
color: white;
}
</style></head><body>

<div class="navbar">
  <a href="#" class="active">Home</a>
  <a href="#">Java</a>
  <a href="#">HTML</a>
  <a href="#">CSS</a>
</div>
</body></html>

```

#### □ Output:

A horizontal navigation bar with:

- 
- Grey background
- 
- 
- “Home” highlighted (active)
- 
- 
- Other links in blue color
- 
- 
- Hover effect that changes background to dark grey and text to white
- 

---

## Q.2) Python Program for Encoding Categorical Data

a) Apply OneHot Encoding on 'Country' Column

b) Apply Label Encoding on 'Purchased' Column

Code:

```
import pandas as pd from sklearn.preprocessing import OneHotEncoder, LabelEncoder
# Load dataset
data = pd.read_csv("Data.csv")
print("Original Data:\n", data)
# ---- OneHot Encoding on 'Country' Column ----
onehot = OneHotEncoder()
country_encoded = onehot.fit_transform(data[['Country']]).toarray()
# Convert to DataFrame
country_df = pd.DataFrame(country_encoded, columns=onehot.get_feature_names_out(['Country']))
# ---- Label Encoding on 'Purchased' Column ----
label = LabelEncoder()
data['Purchased'] = label.fit_transform(data['Purchased'])
# Combine OneHot encoded columns with original DataFrame
final_data = pd.concat([country_df, data[['Age', 'Salary', 'Purchased']]], axis=1)
print("\nAfter Encoding:\n", final_data)
```

---

□ Explanation:

- 

OneHotEncoder:

Converts categorical text column (like "India", "USA", "UK") into multiple binary columns (0s and 1s).

- 
- 

LabelEncoder:

Converts categorical labels ("Yes", "No") into numeric form (1 and 0).

- 

---

Would you like me to turn this into a printable PDF format (college-style answer sheet with your name and slip number)?

You said:

Q.1) Design an HTML form to accept two strings from the user. Write a PHP script for the following. a. Find whether the small string appears at the start of the large string. b. Find the position of the small string in the big string. c. Compare both the string for first n characters, also the comparison should not be case sensitive. [15] Q.2) Write a program in python to perform following task : [15] Standardizing Data (transform them into a standard Gaussian distribution with a mean of 0 and a standard deviation of 1) (Use winequality-red.csv)

ChatGPT said:

Here's the complete answer for Slip 8 — formatted, neat, and ready for submission ✓

---

## Slip 8

---

### Q.1) Design an HTML Form and Write a PHP Script for String Operations

HTML + PHP Code:

```
<!DOCTYPE html> <html> <head>
  <title>String Operations</title> </head> <body style="font-family: Arial; background-
color:#f8f8f8; margin:40px;">
  <h2>String Operations using PHP</h2>
  <form method="post" action="">
    <label>Enter Large String:</label> <br>
    <input type="text" name="large" required> <br> <br>

    <label>Enter Small String:</label> <br>
    <input type="text" name="small" required> <br> <br>

    <label>Enter n (for comparison):</label> <br>
    <input type="number" name="n" required> <br> <br>

    <input type="submit" name="submit" value="Check">
  </form>

<?php
if(isset($_POST['submit'])) {
  $large = $_POST['large'];
  $small = $_POST['small'];
  $n = $_POST['n'];
```

```

echo "<h3>Results:</h3>";

// a) Check if small string appears at the start of large string
if(stripos($large, $small) === 0)
    echo "a) The small string appears at the start of the large string.<br>";
else
    echo "a) The small string does NOT appear at the start of the large string.<br>";

// b) Find position of small string in large string
$pos = stripos($large, $small);
if($pos !== false)
    echo "b) Position of small string in large string: " . ($pos + 1) . "<br>";
else
    echo "b) Small string not found in large string.<br>";

// c) Compare first n characters (case-insensitive)
if(strncasecmp($large, $small, $n) == 0)
    echo "c) First $n characters of both strings are same (case-insensitive).";
else
    echo "c) First $n characters of both strings are different (case-insensitive).";
}
?></body></html>

```

---

## Explanation:

- `stripos()` → Finds position of substring (case-insensitive).
  - 
  - 
  - `strncasecmp()` → Compares first n characters of two strings ignoring case.
  - 
  - `=== 0` → Checks if substring starts at beginning.
  -
- 

## Q.2) Python Program to Standardize Data (Mean = 0, Std = 1)

Code:

```
import pandas as pd
from sklearn.preprocessing import StandardScaler
```

```

# Load dataset
data = pd.read_csv("winequality-red.csv")
print("\nOriginal Data (first 5 rows):")print(data.head())
# Standardizing data
scaler = StandardScaler()
scaled_data = scaler.fit_transform(data)
# Convert back to DataFrame
standardized_df = pd.DataFrame(scaled_data, columns=data.columns)
print("\nStandardized Data (first 5 rows):")print(standardized_df.head())
# Display mean and standard deviation after standardizationprint("\nMean of each feature (after
scaling):")print(standardized_df.mean().round(2))
print("\nStandard Deviation of each feature (after scaling):")print(standardized_df.std().round(2))

```

---

## Explanation:

- StandardScaler() transforms all numeric columns to have
    - Mean = 0
    - Standard Deviation = 1
  - 
  - 
  - This helps to normalize feature importance in machine learning models.
  -
- 

Would you like me to format this answer (with borders, bold headings, and proper alignment) as a ready-to-print PDF answer sheet for submission?

You said:

Q.1) Write a PHP script for the following: Design a form having a text box and a drop down list containing any 3 separators(e.g. #, |, %, @, ! or comma) accept a strings from the user and also a separator. a. Split the string into separate words using the given separator. b. Replace all the occurrences of separator in the given string with some other separator. c. Find the last word in the given string. [15] Q.2 A) Generate a random array of 50 integers and display them using a line chart, scatter plot. Apply appropriate color, labels and styling options. [5] Q.2 B) Create two lists, one representing subject names and the other representing marks obtained in those subjects. Display the data in a pie chart. Q.2 [5] C) Write a program in python to

perform following task (Use winequality-red.csv ) [5] Import Dataset and do the followings: a) Describing the dataset b) Shape of the dataset c) Display first 3 rows from dataset

ChatGPT said:

Here's the complete and neatly formatted solution for Slip 9 — all questions with code and explanations ✓

---

## Slip 9

---

### Q.1) PHP Script for String and Separator Operations

HTML + PHP Code:

```
<!DOCTYPE html><html><head>
  <title>String Separator Operations</title></head><body style="font-family: Arial; margin: 40px;
background-color:#f0f8ff;">
  <h2>String Separator Operations using PHP</h2>
  <form method="post" action="">
    <label>Enter String:</label><br>
    <input type="text" name="string" required style="width:300px;"><br><br>

    <label>Select Separator:</label><br>
    <select name="separator">
      <option value="#">#</option>
      <option value="|">|</option>
      <option value="%">%</option>
      <option value="@>@</option>
      <option value="!">!</option>
    </select><br><br>

    <label>Enter New Separator to Replace With:</label><br>
    <input type="text" name="newsep" maxlength="1" required><br><br>

    <input type="submit" name="submit" value="Process">
  </form>

  <?php
  if(isset($_POST['submit'])) {
    $string = $_POST['string'];
    $separator = $_POST['separator'];
    $newsep = $_POST['newsep'];

    echo "<h3>Results:</h3>";

    // (a) Split the string
```



```

$words = explode($separator, $string);
echo "a) Words after splitting: <br>";
foreach($words as $word) {
    echo $word . "<br>";
}

// (b) Replace separator
$replaced = str_replace($separator, $newsep, $string);
echo "<br>b) String after replacing '$separator' with '$newsep': <br>$replaced<br>";

// (c) Find last word
$last_word = end($words);
echo "<br>c) The last word in the given string is: <b>$last_word</b>";
}
?></body></html>

```

---

## Explanation:

- `explode(separator, string)` → Splits the string into array elements.
  - 
  - `str_replace()` → Replaces all occurrences of a substring.
  - 
  - `end(array)` → Returns the last element of an array.
  -
- 

## Q.2 A) Generate a Random Array and Display Line + Scatter Plots

### Python Code:

```

import numpy as npimport matplotlib.pyplot as plt
# Generate random array of 50 integers
data = np.random.randint(10, 100, 50)
# Line Chart
plt.figure(figsize=(6,4))
plt.plot(data, color='green', marker='o', linestyle='-', label='Line Chart')
plt.title("Random Integer Data - Line Chart")
plt.xlabel("Index")

```

```

plt.ylabel("Value")
plt.legend()
plt.grid(True)
plt.show()
# Scatter Plot
plt.figure(figsize=(6,4))
plt.scatter(range(50), data, color='blue', label='Scatter Plot')
plt.title("Random Integer Data - Scatter Plot")
plt.xlabel("Index")
plt.ylabel("Value")
plt.legend()
plt.grid(True)
plt.show()

```

---

## Q.2 B) Create Two Lists (Subjects & Marks) and Display Pie Chart

Python Code:

```

import matplotlib.pyplot as plt
# Lists
subjects = ['Math', 'Science', 'English', 'History', 'Computer']
marks = [88, 92, 79, 85, 95]
# Pie Chart
plt.figure(figsize=(6,6))
plt.pie(marks, labels=subjects, autopct='%1.1f%%', startangle=90, shadow=True)
plt.title("Marks Distribution by Subject")
plt.show()

```

---

## Q.2 C) Perform Dataset Operations using winequality-red.csv

Python Code:

```

import pandas as pd
# Import Dataset
data = pd.read_csv("winequality-red.csv")
# a) Describe dataset print("a) Dataset Description:") print(data.describe())
# b) Shape of dataset print("\nb) Shape of dataset:", data.shape)
# c) Display first 3 rows print("\nc) First 3 rows of dataset:") print(data.head(3))

```

---

Explanation:

- `data.describe()` → Gives statistical summary (mean, std, etc.)

- 
- `data.shape` → Shows total rows and columns.

- 
- `data.head(3)` → Displays first 3 rows of dataset.

- 

---

Would you like me to combine all these answers into a formatted printable PDF answer sheet (Slip 9) with clear titles, borders, and code blocks (for submission or record)?

You said:

Q.1) Write a script to accept two integers(Use html form having 2 textboxes). Write a PHP script to, a. Find mod of the two numbers. b. Find the power of first number raised to the second. c. Find the sum of first n numbers (considering first number as n) d. Find the factorial of second number. (Write separate function for each of the above operations.) Q.2 A) Write a python program to Display column-wise mean, and median for SOCR-HeightWeight dataset. [15] [10] Q.2 B) Write a python program to compute sum of Manhattan distance between all pairs of points. [5]

ChatGPT said:

Here's your Slip 10 – Full Question and Answer Sheet (HTML + PHP + Python) neatly formatted and ready for submission ✓

---

## Slip 10

---

Q.1)

Write a script to accept two integers (use HTML form having 2 textboxes).

Write a PHP script to:

- Find mod of the two numbers.
- Find the power of first number raised to the second.
- Find the sum of first n numbers (considering first number as n).
- Find the factorial of second number.

(Write separate functions for each of the above operations.)

[15 Marks]

---

✓ HTML + PHP Code:

```
<!DOCTYPE html><html><head>
  <title>PHP Number Operations</title></head><body style="font-family: Arial; margin:40px;
background-color:#f8f8ff;">
  <h2>PHP Script for Number Operations</h2>
  <form method="post" action="">
    <label>Enter First Number:</label>
    <input type="number" name="num1" required><br><br>
    <label>Enter Second Number:</label>
    <input type="number" name="num2" required><br><br>
    <input type="submit" name="submit" value="Calculate">
  </form>

  <?php
function findMod($a, $b) {
    return $a % $b;
}

function findPower($a, $b) {
    return pow($a, $b);
}

function findSum($n) {
    return ($n * ($n + 1)) / 2;
}

function findFactorial($n) {
    $fact = 1;
    for($i = 1; $i <= $n; $i++) {
        $fact *= $i;
    }
    return $fact;
}

if(isset($_POST['submit'])) {
    $num1 = $_POST['num1'];
    $num2 = $_POST['num2'];

    echo "<h3>Results:</h3>";
    echo "a) Modulus of $num1 and $num2 is: " . findMod($num1, $num2) . "<br>";
```

```
echo "b) Power ($num1 ^ $num2): " . findPower($num1, $num2) . "<br>";  
echo "c) Sum of first $num1 numbers: " . findSum($num1) . "<br>";  
echo "d) Factorial of $num2 is: " . findFactorial($num2) . "<br>";  
}  
?></body></html>
```

---

### Explanation:

- Each operation is defined as a separate PHP function.
  - 
  - `pow()` calculates power.
  - 
  - Modulus `%` finds remainder.
  - 
  - Formula  $(n*(n+1))/2$  calculates sum of first n numbers.
  - 
  - A simple `for` loop is used for factorial.
  -
- 

### Q.2 A)

Write a Python program to display column-wise mean and median for SOCR-HeightWeight dataset.  
[10 Marks]

---

### ✓ Python Code:

```
import pandas as pd
# Load dataset
data = pd.read_csv("SOCR-HeightWeight.csv")
# Display column-wise mean and median
print("Column-wise Mean:")
print(data.mean(numeric_only=True))
print("\nColumn-wise Median:")
print(data.median(numeric_only=True))
```

---

### Explanation:

- `data.mean()` → Calculates mean for each numeric column.
  - 
  - `data.median()` → Calculates median for each numeric column.
  - 
  - The `numeric_only=True` parameter ensures only numeric columns are used.
  -
- 

### Q.2 B)

Write a Python program to compute the sum of Manhattan distance between all pairs of points.  
[5 Marks]

---

### ✓ Python Code:

```
import numpy as np
from itertools import combinations
# Example 2D points
points = np.array([[2, 3], [5, 7], [1, 9], [4, 2]])
def manhattan_distance(p1, p2):
    return np.abs(p1 - p2).sum()
```

```
total_distance = 0
for (p1, p2) in combinations(points, 2):
    total_distance += manhattan_distance(p1, p2)
print("Sum of Manhattan Distances between all pairs:", total_distance)
```

---

## Explanation:

- 

### Manhattan Distance Formula:

$$|x1 - x2| + |y1 - y2|$$

- 

- 

Uses `itertools.combinations()` to calculate all possible point pairs.

- 

- 

Accumulates total Manhattan distance.

- 

---

Would you like me to convert this full slip (HTML + PHP + Python) into a formatted PDF answer sheet with proper titles, colored code blocks, and marks boxes for printing/submission?

You said:

Q.1) Create a button with different style (Secondary, Primary, Success, Error, Info, Warning, Danger) using Bootstrap. [15] Q.2 A) Write a Python program to create a Pie plot to get the frequency of the three species of the Iris data (Use iris.csv) [10] B) Write a Python program to view basic statistical details of the data.(Use winequality-red.csv)

ChatGPT said:

Here's your Slip 11 – Full Answer Sheet (HTML + Bootstrap + Python) neatly formatted and ready for assignment or submission ✓

---

## Slip 11

---

Q.1)

Create a button with different style (Secondary, Primary, Success, Error, Info, Warning, Danger) using Bootstrap.

[15 Marks]

---

✓ HTML Code (Bootstrap Buttons Example):

```
<!DOCTYPE html><html lang="en"><head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Bootstrap Button Styles</title>
  <!-- Bootstrap CSS -->
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css"
rel="stylesheet"></head><body class="text-center mt-5">

  <h2 class="mb-4">Bootstrap Buttons with Different Styles</h2>

  <button type="button" class="btn btn-primary">Primary</button>
  <button type="button" class="btn btn-secondary">Secondary</button>
  <button type="button" class="btn btn-success">Success</button>
  <button type="button" class="btn btn-danger">Danger</button>
  <button type="button" class="btn btn-warning">Warning</button>
  <button type="button" class="btn btn-info">Info</button>
  <button type="button" class="btn btn-light">Light</button>
  <button type="button" class="btn btn-dark">Dark</button>

  <!-- Bootstrap JS -->
  <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.bundle.min.js"></script></bod
y></html>
```

---

Explanation:

- Each button uses Bootstrap's built-in classes (btn, btn-primary, etc.).
- 
-



These styles are predefined color schemes in Bootstrap.

- 
- 

You can use this template inside any Bootstrap webpage.

- 

---

Q.2 A)

Write a Python program to create a Pie plot to get the frequency of the three species of the Iris data (Use iris.csv).

[10 Marks]

---

✓ Python Code:

```
import pandas as pd
import matplotlib.pyplot as plt
# Load dataset
data = pd.read_csv("iris.csv")
# Count frequency of each species
species_count = data['species'].value_counts()
# Pie Plot
plt.figure(figsize=(6,6))
plt.pie(species_count, labels=species_count.index, autopct='%1.1f%%', startangle=90, shadow=True)
plt.title("Frequency of Iris Flower Species")
plt.show()
```

---

Explanation:

- 

`value_counts()` → counts occurrences of each species.

- 
- 

`plt.pie()` → creates a pie chart with percentage labels.

-

- The chart shows the proportion of each flower species in the dataset.

- 

---

## Q.2 B)

Write a Python program to view basic statistical details of the data (Use winequality-red.csv).  
[5 Marks]

---

### ✓ Python Code:

```
import pandas as pd
# Load dataset
data = pd.read_csv("winequality-red.csv")
# Display basic statistical details print("Basic Statistical Details of Dataset:\n") print(data.describe())
```

---

### Explanation:

- `describe()` gives quick summary statistics — count, mean, std, min, max, quartiles.

- 

- 

Helps understand the dataset distribution and variation.

- 

---

Would you like me to combine Slip 11 into a professional PDF answer sheet (formatted with borders, color headings, and ready for submission)?

You said:

Q.1) Write a PHP script for the following: Design a form to accept two numbers from the user. Give options to choose the arithmetic operation (use radio buttons). Display the result on the next form. (Use the concept of function and default parameters. Use 'include' construct or require statement) [15] Q.2 A) Generate a random array of 50 integers and display them using a line chart, scatter plot, histogram and box plot. Apply appropriate color, labels and styling options. [10] Q.2 B) Write a Python program to create data frame containing column name, salary, department add 10 rows with some missing and duplicate values to the data frame. Also drop all null and empty values. Print the modified data frame. [5]

ChatGPT said:

Here's your Slip 12 – Full Answer Sheet (PHP + Python) neatly formatted and complete ✓

---

## Slip 12

---

Q.1)

Write a PHP script for the following:  
Design a form to accept two numbers from the user.  
Give options to choose the arithmetic operation (use radio buttons).  
Display the result on the next form. (Use the concept of function and default parameters. Use 'include' or 'require' statement)  
[15 Marks]

---

✓ File 1: index.php

```
<!DOCTYPE html>
<html>
<head>
  <title>Arithmetic Operations using PHP</title>
</head>
<body style="font-family: Arial; margin:40px; background-color:#f8f8ff;">
```

```
<h2>Arithmetic Operations</h2>

<form method="post" action="process.php">
  <label>Enter First Number:</label>
  <input type="number" name="num1" required> <br> <br>

  <label>Enter Second Number:</label>
  <input type="number" name="num2" required> <br> <br>

  <label>Select Operation:</label> <br>
  <input type="radio" name="operation" value="add" checked> Addition<br>
  <input type="radio" name="operation" value="sub"> Subtraction<br>
  <input type="radio" name="operation" value="mul"> Multiplication<br>
  <input type="radio" name="operation" value="div"> Division<br> <br>

  <input type="submit" name="submit" value="Calculate">
</form>
</body>
</html>
```

---

### ✔ File 2: functions.php

```
<?phpfunction calculate($num1, $num2, $operation = "add") {
  switch($operation) {
    case "add": return $num1 + $num2;
    case "sub": return $num1 - $num2;
    case "mul": return $num1 * $num2;
    case "div": return ($num2 != 0) ? $num1 / $num2 : "Division by Zero Error!";
    default: return "Invalid Operation";
  }
}
}?
```

---

### ✔ File 3: process.php

```
<?phprequire 'functions.php'; // include external PHP file
if(isset($_POST['submit'])) {
  $num1 = $_POST['num1'];
  $num2 = $_POST['num2'];
  $operation = $_POST['operation'];

  $result = calculate($num1, $num2, $operation);

  echo "<h2>Result</h2>";
  echo "First Number: $num1 <br>";
  echo "Second Number: $num2 <br>";
  echo "Selected Operation: $operation <br>";
  echo "<strong>Result = $result</strong>";
}
}?
```

---

## Explanation:

- `require` includes external PHP file for reusability.
- 
- 
- Default parameter `$operation = "add"` handles cases when no operation is chosen.
- 
- 
- Uses functions for modular design and code clarity.
- 

---

## Q.2 A)

Generate a random array of 50 integers and display them using a line chart, scatter plot, histogram and box plot. Apply appropriate color, labels and styling options.

[10 Marks]

---

## ✓ Python Code:

```
import numpy as np
import matplotlib.pyplot as plt

# Generate random array
data = np.random.randint(1, 100, 50)

# Line Chart
plt.figure(figsize=(6,4))
plt.plot(data, color='blue', marker='o', linestyle='-', label='Line Chart')
plt.title("Random Integer Data - Line Chart")
plt.xlabel("Index")
plt.ylabel("Value")
plt.legend()
plt.grid(True)
plt.show()

# Scatter Plot
```

```

plt.figure(figsize=(6,4))
plt.scatter(orange(50), data, color='green', label='Scatter Plot')
plt.title("Random Integer Data - Scatter Plot")
plt.xlabel("Index")
plt.ylabel("Value")
plt.legend()
plt.grid(True)
plt.show()
# Histogram
plt.figure(figsize=(6,4))
plt.hist(data, bins=10, color='orange', edgecolor='black')
plt.title("Histogram of Random Integers")
plt.xlabel("Value")
plt.ylabel("Frequency")
plt.show()
# Box Plot
plt.figure(figsize=(5,4))
plt.boxplot(data, patch_artist=True)
plt.title("Box Plot of Random Integers")
plt.show()

```

---

## Explanation:

- `plot()` → line chart
  - 
  - `scatter()` → scatter plot
  - 
  - `hist()` → histogram
  - 
  - `boxplot()` → box & whisker plot
  -
- 

Q.2 B)

Write a Python program to create a DataFrame containing column name, salary, department, add 10 rows with some missing and duplicate values. Drop all null and empty values and print modified DataFrame.

[5 Marks]

---

### ✓ Python Code:

```
import pandas as pd
import numpy as np
# Create DataFrame
data = {
    'Name': ['Amit', 'Sneha', 'Ravi', 'Amit', 'Pooja', 'Neha', 'Raj', None, 'Vivek', 'Sonal'],
    'Salary': [50000, 60000, np.nan, 50000, 55000, 62000, 48000, 53000, None, 61000],
    'Department': ['IT', 'HR', 'Finance', 'IT', '', 'HR', 'IT', 'Finance', 'HR', None]
}

df = pd.DataFrame(data)
print("Original DataFrame:\n", df)
# Drop missing and empty values
df_cleaned = df.dropna().replace("", np.nan).dropna().drop_duplicates()
print("\nModified DataFrame (After Removing Nulls and Duplicates):\n", df_cleaned)
```

---

### Explanation:

- `dropna()` removes rows with `NaN` or missing values.
  - 
  - `replace("", np.nan)` treats empty strings as missing.
  - 
  - `drop_duplicates()` removes duplicate rows.
  -
- 

Would you like me to format Slip 12 into a clean printable PDF (with marks boxes, borders, and colored headers) — perfect for submission?

You said:

Q.1) Write a PHP script to create a chess board using CSS on table cells. [15]

Q.2 A) Write a Python program to create a graph to find relationship between the petal length and petal width.(Use iris.csv dataset) [10] Q.2 B)

Write a Python program to find the maximum and minimum value of a given flattened array. [5]

ChatGPT said:

Here's your Slip 13 – Full Question and Answer Sheet (PHP + Python), neatly formatted and ready for submission ✓

---

## Slip 13

---

Q.1)

Write a PHP script to create a chess board using CSS on table cells.  
[15 Marks]

---

✓ PHP + HTML + CSS Code:

```
<!DOCTYPE html>
<html>
<head>
  <title>Chess Board using PHP and CSS</title>
  <style>
    table {
      border: 3px solid black;
      border-collapse: collapse;
      margin: 50px auto;
    }
    td {
      width: 60px;
      height: 60px;
    }
    .black {
      background-color: #000;
    }
    .white {
      background-color: #fff;
```



```

    }
</style>
</head>
<body>
  <h2 style="text-align:center;">Chess Board using PHP</h2>

  <table>
    <?php
    for($row = 1; $row <= 8; $row++) {
      echo "<tr>";
      for($col = 1; $col <= 8; $col++) {
        $total = $row + $col;
        if($total % 2 == 0)
          echo "<td class='white'></td>";
        else
          echo "<td class='black'></td>";
      }
      echo "</tr>";
    }
    ?>
  </table>
</body>
</html>

```

---

## Explanation:

- Uses a PHP nested loop to create 8 rows × 8 columns.

- 
- 

If (row + column) is even → white cell, else → black cell.

- 
- 

CSS is used to color and size the cells to make it look like a chessboard.

- 
- 

## Output:

A perfect 8×8 chessboard pattern with alternating black and white squares displayed on a webpage.

---

## Q.2 A)

Write a Python program to create a graph to find the relationship between petal length and petal width. (Use iris.csv dataset)  
[10 Marks]

---

### ✓ Python Code:

```
import pandas as pd
import matplotlib.pyplot as plt

# Load dataset
data = pd.read_csv("iris.csv")

# Scatter plot for Petal Length vs Petal Width
plt.figure(figsize=(7,5))
plt.scatter(data["petal_length"], data["petal_width"], color='blue', alpha=0.6)
plt.title("Relationship between Petal Length and Petal Width")
plt.xlabel("Petal Length (cm)")
plt.ylabel("Petal Width (cm)")
plt.grid(True)
plt.show()
```

---

### Explanation:

- Scatter Plot shows how petal width varies with petal length.
  - 
  - Both features are taken from the Iris dataset.
  - 
  - The relationship is mostly linear — as petal length increases, petal width also increases.
  -
-

## Q.2 B)

Write a Python program to find the maximum and minimum value of a given flattened array.

[5 Marks]

---

### ✓ Python Code:

```
import numpy as np
# Example 2D array
arr = np.array([[4, 8, 2], [10, 3, 7]])
# Flatten the array
flat = arr.flatten()
# Find max and min
max_value = np.max(flat)
min_value = np.min(flat)
print("Flattened Array:", flat)print("Maximum Value:", max_value)print("Minimum Value:", min_value)
```

---

### Explanation:

- `flatten()` converts a 2D array to 1D.
  - 
  - `np.max()` and `np.min()` find the maximum and minimum values easily.
  - 
  - Works for any multi-dimensional NumPy array.
  -
- 

Would you like me to convert Slip 13 into a professional, printable PDF (with code boxes, clear marks section, and proper formatting for college submission)?

You said:

Q.1) Design a form to accept string from the user and perform the following operations a. To select first 5 words from the string b. Convert the given string to lowercase and then to Title case. c. Pad the given string with "\*" from left and right both the sides. d. Remove the leading whitespaces from the given string. e. Find the reverse of given string. [15] Q.2 A) Generate a random array of 50 integers and display them using a line chart, scatter plot, histogram and box plot. Apply appropriate color, labels and styling options. [10] Q.2 B) Create two lists, one representing subject names and the other representing marks obtained in those subjects. Display the data in a pie chart. [5]

ChatGPT said:

Here's your Slip 14 – Full Question and Answer Sheet (PHP + Python) — neatly formatted and ready for submission ✓

---

## Slip 14

---

Q.1)

Design a form to accept a string from the user and perform the following operations:

- Select first 5 words from the string
- Convert the given string to lowercase and then to Title case
- Pad the given string with "\*" from left and right both sides
- Remove the leading whitespaces from the given string
- Find the reverse of given string

[15 Marks]

---

✓ PHP Code (string\_operations.php):

```
<!DOCTYPE html>
<html>
<head>
  <title>String Operations in PHP</title>
```

```

<style>
  body { font-family: Arial; background-color: #f5f5f5; }
  .container { width: 50%; margin: auto; background: #fff; padding: 20px; border-radius: 10px; box-
shadow: 0 0 10px gray; }
  input[type=text] { width: 90%; padding: 10px; margin: 10px 0; }
  input[type=submit] { background: #007bff; color: white; padding: 10px 20px; border: none;
border-radius: 5px; cursor: pointer; }
  h3 { color: #007bff; }
</style>
</head>
<body>
<div class="container">
  <h2>String Operations Using PHP</h2>
  <form method="post">
    <label>Enter a String:</label><br>
    <input type="text" name="input_str" required>
    <br><br>
    <input type="submit" name="process" value="Perform Operations">
  </form>

  <?php
  if(isset($_POST['process'])){
    $str = $_POST['input_str'];

    echo "<h3>Original String:</h3> $str <br>";

    // a) First 5 words
    $words = explode(" ", $str);
    $first5 = implode(" ", array_slice($words, 0, 5));
    echo "<b>First 5 Words:</b> $first5 <br>";

    // b) Lowercase then Title Case
    $lower = strtolower($str);
    $title = ucwords($lower);
    echo "<b>Lowercase:</b> $lower <br>";
    echo "<b>Title Case:</b> $title <br>";

    // c) Pad with '*'
    $padded = str_pad($str, strlen($str) + 4, "*", STR_PAD_BOTH);
    echo "<b>Padded String:</b> $padded <br>";

    // d) Remove leading whitespaces
    $trimmed = ltrim($str);
    echo "<b>After Removing Leading Spaces:</b> '$trimmed' <br>";

    // e) Reverse string
    $reverse = strrev($str);
    echo "<b>Reversed String:</b> $reverse <br>";
  }
  ?>
</div>
</body>
</html>

```

---

Explanation:

- explode() splits words by spaces.
- 
- array\_slice() extracts first 5 words.
- 
- strtolower() + ucwords() handles lowercase + title case.
- 
- str\_pad() pads the string symmetrically with \*.
- 
- ltrim() removes left spaces.
- 
- 
- strrev() reverses the string.
- 

---

Output Example:

If input = " Hello world this is PHP programming",

Operation	Output
First 5 Words	Hello world this is PHP
Lowercase	hello world this is php programming
Title Case	Hello World This Is Php Programming
Padded	**Hello world this is PHP programming*****

Operation	Output
Trimmed	Hello world this is PHP programming
Reversed	gnimmargorp PHP si siht dlrow olleH

## Q.2 A)

Generate a random array of 50 integers and display them using a line chart, scatter plot, histogram, and box plot. Apply appropriate color, labels, and styling.

[10 Marks]

### ✓ Python Code:

```
import numpy as np
import matplotlib.pyplot as plt

# Generate random array
data = np.random.randint(1, 100, 50)

# Line Chart
plt.figure(figsize=(6,4))
plt.plot(data, color='blue', marker='o', linestyle='dashed')
plt.title("Line Chart of Random Integers")
plt.xlabel("Index")
plt.ylabel("Value")
plt.grid(True)
plt.show()

# Scatter Plot
plt.figure(figsize=(6,4))
plt.scatter(range(50), data, color='green')
plt.title("Scatter Plot of Random Integers")
plt.xlabel("Index")
plt.ylabel("Value")
plt.grid(True)
plt.show()

# Histogram
plt.figure(figsize=(6,4))
plt.hist(data, bins=10, color='orange', edgecolor='black')
plt.title("Histogram of Random Integers")
plt.xlabel("Value Range")
plt.ylabel("Frequency")
plt.show()

# Box Plot
plt.figure(figsize=(4,6))
plt.boxplot(data, patch_artist=True, boxprops=dict(facecolor='lightblue'))
```

```
plt.title("Box Plot of Random Integers")
plt.ylabel("Values")
plt.show()
```

---

### Explanation:

- `np.random.randint()` generates 50 random integers.

- 
- 

Used Matplotlib to visualize data in 4 different plots:

- 
- 

Line Chart – trends

- 
- 

Scatter Plot – individual data points

- 
- 

Histogram – frequency distribution

- 
- 

Box Plot – statistical spread

- 
- 

### Q.2 B)

Create two lists, one representing subject names and the other representing marks obtained in those subjects. Display the data in a pie chart.

[5 Marks]



---

### ✓ Python Code:

```
import matplotlib.pyplot as plt
# Lists
subjects = ['Math', 'Science', 'English', 'History', 'Computer']
marks = [85, 90, 75, 60, 95]
# Pie Chart
plt.figure(figsize=(6,6))
plt.pie(marks, labels=subjects, autopct='%1.1f%%', startangle=140, shadow=True)
plt.title("Marks Distribution by Subject")
plt.show()
```

---

### Explanation:

- `plt.pie()` displays percentage distribution of marks.
  - 
  - 
  - `autopct` formats percentages.
  - 
  - `startangle` rotates chart for clarity.
  - 
  - Visually shows performance per subject.
  -
- 

Would you like me to convert Slip 14 into a printable, well-formatted PDF (for college practical submission)?

You said:

Q.1) Write a PHP script for the following: Design a form to accept the marks of 5 different subjects of a student, having serial number, subject name &

marks out of 100. Display the result in the tabular format which will have total, percentage and grade. Use only 3 text boxes.(Use array of form parameters) [15] Q.2 A) Write a python program to create two lists, one representing subject names and the other representing marks obtained in those subjects. Display the data in a pie chart and bar chart. [10] Q.2 B) Write a python program to create a data frame for students' information such as name, graduation percentage and age. Display average age of students, average of graduation percentage. [5]

ChatGPT said:

Here's your Slip – Full Answer Set (PHP + Python), formatted clearly for practical submission ✓

---

## Slip

---

### Q.1)

Write a PHP script for the following:

Design a form to accept the marks of 5 different subjects of a student, having serial number, subject name & marks out of 100. Display the result in tabular format which will have Total, Percentage, and Grade.

Use only 3 text boxes (use array of form parameters).

[15 Marks]

---

### ✓ PHP Code (marks\_calculation.php)

```
<!DOCTYPE html>
<html>
<head>
  <title>Student Marks and Grade</title>
  <style>
    body {
      font-family: Arial;
      background-color: #f5f5f5;
    }
    .container {
      width: 60%;
```

```

        margin: auto;
        background: white;
        padding: 25px;
        border-radius: 10px;
        box-shadow: 0 0 10px gray;
    }
    input[type=text] {
        padding: 8px;
        margin: 5px;
    }
    input[type=submit] {
        padding: 8px 20px;
        background-color: #007bff;
        color: white;
        border: none;
        border-radius: 5px;
        cursor: pointer;
    }
    table {
        border-collapse: collapse;
        width: 100%;
        margin-top: 15px;
    }
    th, td {
        border: 1px solid #333;
        text-align: center;
        padding: 8px;
    }
    th {
        background-color: #007bff;
        color: white;
    }
</style>
</head>
<body>
<div class="container">
    <h2>Student Marks Entry</h2>
    <form method="post">
        <b>Enter Subject Names:</b><br>
        <input type="text" name="subject[]" placeholder="Subject 1" required>
        <input type="text" name="subject[]" placeholder="Subject 2" required>
        <input type="text" name="subject[]" placeholder="Subject 3" required>
        <input type="text" name="subject[]" placeholder="Subject 4" required>
        <input type="text" name="subject[]" placeholder="Subject 5" required><br><br>

        <b>Enter Marks out of 100:</b><br>
        <input type="text" name="marks[]" placeholder="Marks 1" required>
        <input type="text" name="marks[]" placeholder="Marks 2" required>
        <input type="text" name="marks[]" placeholder="Marks 3" required>
        <input type="text" name="marks[]" placeholder="Marks 4" required>
        <input type="text" name="marks[]" placeholder="Marks 5" required><br><br>

        <input type="submit" name="submit" value="Show Result">
    </form>

<?php
if(isset($_POST['submit'])) {
    $subjects = $_POST['subject'];

```

```

$marks = $_POST['marks'];
$total = array_sum($marks);
$percentage = $total / count($marks);

if($percentage >= 75) $grade = "Distinction";
elseif($percentage >= 60) $grade = "First Class";
elseif($percentage >= 50) $grade = "Second Class";
elseif($percentage >= 40) $grade = "Pass";
else $grade = "Fail";

echo "<h3>Result Table</h3>";
echo "<table>
    <tr><th>Sr. No.</th><th>Subject</th><th>Marks</th></tr>";

for($i=0; $i<count($subjects); $i++){
    echo "<tr><td>".($i+1)."</td><td>".$subjects[$i]."</td><td>".$marks[$i]."</td></tr>";
}

echo "<tr><th colspan='2'>Total</th><td>$total</td></tr>";
echo "<tr><th colspan='2'>Percentage</th><td>".round($percentage,2)."%</td></tr>";
echo "<tr><th colspan='2'>Grade</th><td>$grade</td></tr>";
echo "</table>";
}
?>
</div>
</body>
</html>

```

---

## Explanation:

- 

`$_POST['subject']` and `$_POST['marks']` are arrays.

- 

- 

`array_sum()` calculates total marks.

- 

- 

Grade decided based on percentage.

- 

- 

Table displays each subject's marks, total, percentage & grade.

-

---

### Sample Output:

Sr. No.	Subject	Marks
1	Math	90
2	Science	85
3	English	70
4	History	60
5	Computer	95
Total		400
Percentage		80%
Grade		Distinction

---

### Q.2 A)

Write a Python program to create two lists, one representing subject names and the other representing marks obtained in those subjects. Display the data in a pie chart and bar chart.  
[10 Marks]

---

### ✓ Python Code:

```
import matplotlib.pyplot as plt
# Data
subjects = ['Math', 'Science', 'English', 'History', 'Computer']
marks = [85, 90, 75, 60, 95]
# Pie Chart
plt.figure(figsize=(6,6))
plt.pie(marks, labels=subjects, autopct='%1.1f%%', startangle=140, shadow=True)
plt.title("Marks Distribution (Pie Chart)")
plt.show()
# Bar Chart
```

```
plt.figure(figsize=(7,5))
plt.bar(subjects, marks, color='skyblue', edgecolor='black')
plt.title("Marks Distribution (Bar Chart)")
plt.xlabel("Subjects")
plt.ylabel("Marks")
plt.show()
```

---

### Explanation:

- Two lists represent subject names and marks.
  - 
  - Pie chart shows marks percentage visually.
  - 
  - Bar chart shows subject-wise marks comparison.
  -
- 

### Q.2 B)

Write a Python program to create a data frame for students' information such as name, graduation percentage and age. Display average age of students, average of graduation percentage.

[5 Marks]

---

### ✓ Python Code:

```
import pandas as pd
# Create DataFrame
data = {
    'Name': ['Amit', 'Riya', 'Vikram', 'Neha', 'Suresh'],
    'Graduation_Percentage': [78, 85, 67, 90, 80],
    'Age': [22, 21, 23, 22, 24]
```

```

}

df = pd.DataFrame(data)print("Student Data:\n", df)
# Calculate averages
avg_age = df['Age'].mean()
avg_grad = df['Graduation_Percentage'].mean()
print("\nAverage Age of Students:", round(avg_age,2))print("Average Graduation Percentage:",
round(avg_grad,2))

```

---

## Output Example:

Student Data:

Name	Graduation_Percentage	Age	0	Amit	78	221	Riya	85	212
Vikram	67	233	Neha	90	224	Suresh	80	24	

Average Age of Students: 22.4Average Graduation Percentage: 80.0

---

Would you like me to combine this Slip into a ready-to-print PDF (Slip Name + Questions + Answers + Output Table format) for your college submission?

You said:

Q.1) Write a PHP script to sort the following associative array :  
array("Sagar"=>"31","Vicky"=>"41","Leena"=>"39","Ramesh"=>"40") in a)  
ascending order sort by Value b) ascending order sort by Key c) descending  
order sorting by Value d) descending order sorting by Key [15] Q.2 A) Write  
a Python program to draw scatter plots to compare two features of the iris  
dataset [10] Q.2 B) Write a Python program to create a data frame  
containing columns name, age , salary, department . Add 10 rows to the  
data frame. View the data frame. [5]

ChatGPT said:

Here's your Slip – Full Solution (PHP + Python) neatly formatted for  
practical submission ✓

---

## Slip

---

Q.1)

Write a PHP script to sort the following associative array:

```
array("Sagar"=>"31","Vicky"=>"41","Leena"=>"39","Ramesh"=>"40")
```

Perform the following operations:

- Ascending order sort by Value
- Ascending order sort by Key
- Descending order sort by Value
- Descending order sort by Key

[15 Marks]

---

✓ PHP Code:

```
<!DOCTYPE html>
<html>
<head>
  <title>Associative Array Sorting</title>
  <style>
    body { font-family: Arial; background-color: #f7f7f7; padding: 20px; }
    h2 { color: #333; }
    pre { background: #fff; border: 1px solid #ccc; padding: 10px; border-radius: 6px; }
  </style>
</head>
<body>

<h2>PHP Program: Sorting an Associative Array</h2>
<?php// Original associative array$students =
array("Sagar"=>"31","Vicky"=>"41","Leena"=>"39","Ramesh"=>"40");
echo "<h3>Original Array:</h3>";echo "<pre>";print_r($students);echo "</pre>";
// a) Ascending order sort by Valueasort($students);echo "<h3>a) Ascending Order by Value
(asort):</h3><pre>";print_r($students);echo "</pre>";
// b) Ascending order sort by Keyksort($students);echo "<h3>b) Ascending Order by Key
(ksort):</h3><pre>";print_r($students);echo "</pre>";
// c) Descending order sort by Valuearsort($students);echo "<h3>c) Descending Order by Value
(arsort):</h3><pre>";print_r($students);echo "</pre>";
// d) Descending order sort by Keykrsort($students);echo "<h3>d) Descending Order by Key
(krsort):</h3><pre>";print_r($students);echo "</pre>";?>

</body>
</html>
```

---

Explanation:

-



`asort()` → Sort associative array by value (ascending)

- 
- 

`ksort()` → Sort associative array by key (ascending)

- 
- 

`arsort()` → Sort associative array by value (descending)

- 
- 

`krsort()` → Sort associative array by key (descending)

- 

---

## Sample Output (Displayed in Browser):

Original Array:Array ( [Sagar] => 31 [Vicky] => 41 [Leena] => 39 [Ramesh] => 40 )  
a) Ascending by Value:Array ( [Sagar] => 31 [Leena] => 39 [Ramesh] => 40 [Vicky] => 41 )  
b) Ascending by Key:Array ( [Leena] => 39 [Ramesh] => 40 [Sagar] => 31 [Vicky] => 41 )  
c) Descending by Value:Array ( [Vicky] => 41 [Ramesh] => 40 [Leena] => 39 [Sagar] => 31 )  
d) Descending by Key:Array ( [Vicky] => 41 [Sagar] => 31 [Ramesh] => 40 [Leena] => 39 )

---

## Q.2 A)

Write a Python program to draw scatter plots to compare two features of the Iris dataset.

[10 Marks]

---

### ✓ Python Code:

```
import pandas as pd
import matplotlib.pyplot as plt
# Load iris dataset
data = pd.read_csv("iris.csv")
# Scatter plot comparing Sepal Length vs Petal Length
```

```
plt.figure(figsize=(7,5))
plt.scatter(data["sepal_length"], data["petal_length"], color="green", alpha=0.6)
plt.title("Iris Dataset: Sepal Length vs Petal Length")
plt.xlabel("Sepal Length (cm)")
plt.ylabel("Petal Length (cm)")
plt.grid(True)
plt.show()
# Scatter plot comparing Sepal Width vs Petal Width
plt.figure(figsize=(7,5))
plt.scatter(data["sepal_width"], data["petal_width"], color="orange", alpha=0.6)
plt.title("Iris Dataset: Sepal Width vs Petal Width")
plt.xlabel("Sepal Width (cm)")
plt.ylabel("Petal Width (cm)")
plt.grid(True)
plt.show()
```

---

### Explanation:

- Uses `matplotlib` for scatter plots.
  - 
  - Compares different flower measurements visually.
  - 
  - Each plot shows relationship between two features.
  -
- 

### Q.2 B)

Write a Python program to create a data frame containing columns name, age, salary, department. Add 10 rows to the data frame. View the data frame.

[5 Marks]

---

## ✓ Python Code:

```
import pandas as pd
# Create DataFrame
data = {
    'Name': ['Amit', 'Riya', 'Vikram', 'Suresh', 'Neha', 'Pooja', 'Rohan', 'Meera', 'Kunal', 'Sneha'],
    'Age': [25, 24, 27, 28, 23, 26, 29, 24, 25, 27],
    'Salary': [30000, 40000, 35000, 45000, 32000, 38000, 47000, 31000, 34000, 42000],
    'Department': ['HR', 'IT', 'Finance', 'Marketing', 'IT', 'HR', 'Finance', 'Sales', 'IT', 'Marketing']
}

df = pd.DataFrame(data)
# Display DataFrameprint("Employee DataFrame:\n", df)
```

---

## Output Example:

```
   Name Age Salary Department0  Amit  25  30000    HR1  Riya  24  40000    IT2  Vikram  27  35000  Finance3  Suresh  28  45000  Marketing4  Neha  23  32000    IT5  Pooja  26  38000  Finance6  Rohan  29  47000  Finance7  Meera  24  31000  Sales8  Kunal  25  34000    IT9  Sneha  27  42000  Marketing
```

---

Would you like me to combine this Slip into a ready-to-print PDF with question headers, answers, code boxes, and formatted marks layout (for college submission)?

You said:

Q.1) Write a menu driven program to perform the following operations on an associative array a. Reverse the order of each element's key-value pair. b. Traverse the element in an array in random order. c. Convert the array elements into individual variables. d. Display the elements of an array along with key. [15] Q.2 A) Write a Python program to create box plots to see how each feature i.e. Sepal Length, Sepal Width, Petal Length, Petal Width are distributed across the three species. (Use iris.csv dataset) [10] Q.2 B) Use the heights and weights dataset and load the dataset from a given csv file into a dataframe. Print the first, last 5 rows and random 10 row [5]

ChatGPT said:

Here are answers for both Q.1 (PHP) and Q.2 (Python) — neatly written, ready for practical or assignment use ☐

---

## □ Q.1) PHP Menu-Driven Program on Associative Array

(15 Marks)

```
<!DOCTYPE html>
<html>
<head>
    <title>Associative Array Operations</title>
</head>
<body>
<h2>Menu Driven Program on Associative Array</h2>
<?php// Associative Array$students = array("Sagar" => "31", "Vicky" => "41", "Leena" => "39",
"Ramesh" => "40");
// Menuecho "<b>Original Array:</b><br>";foreach ($students as $key => $value) {
    echo "$key => $value<br>";
}
echo "<br>";
// a) Reverse the order of each element's key-value pairecho "<b>a) Reversed Key-Value
Pairs:</b><br>";$reversed = array_flip($students);print_r($reversed);echo "<br><br>";
// b) Traverse the elements in an array in random orderecho "<b>b) Random Order
Traversal:</b><br>";$keys = array_keys($students);shuffle($keys);foreach ($keys as $key) {
    echo "$key => $students[$key]<br>";
}echo "<br>";
// c) Convert the array elements into individual variablesecho "<b>c) Array Elements as
Variables:</b><br>";extract($students);echo "Sagar = $Sagar<br>";echo "Vicky = $Vicky<br>";echo
"Leena = $Leena<br>";echo "Ramesh = $Ramesh<br><br>";
// d) Display elements with keyecho "<b>d) Display Elements with Key:</b><br>";foreach ($students
as $key => $value) {
    echo "Key = $key, Value = $value<br>";
}??>
</body>
</html>
```

✓ Output Explanation:

- (a) Flips key-value pairs (key becomes value and vice versa).
- 
- (b) Shows elements in random order.
- 
- (c) Converts array items into PHP variables.
- 
- (d) Displays keys and values normally.

- 

---

## □ Q.2 A) Python — Box Plots for Iris Dataset

(10 Marks)

```
import pandas as pdimport matplotlib.pyplot as pltimport seaborn as sns
# Load dataset
iris = pd.read_csv("iris.csv")
# Create box plots for all features grouped by species
plt.figure(figsize=(10, 6))
sns.boxplot(data=iris, orient="h", palette="Set2")
plt.title("Box Plots of Iris Features")
plt.show()
# Individual plots by species
features = ['sepal_length', 'sepal_width', 'petal_length', 'petal_width']for f in features:
    plt.figure(figsize=(6, 4))
    sns.boxplot(x="species", y=f, data=iris, palette="Set3")
    plt.title(f"Distribution of {f} by Species")
    plt.show()
```

✓ Explanation:

- 

Reads `iris.csv` into DataFrame.

- 

- 

Displays distribution of each feature (Sepal and Petal) for all 3 species.

- 

- 

Uses `seaborn.boxplot()` for visualization.

- 

---

## □ Q.2 B) Python — Load Height/Weight Dataset

(5 Marks)

```
import pandas as pd
# Load dataset
df = pd.read_csv("heights_weights.csv")
```

```
# Display first 5 rowsprint("First 5 Rows:\n", df.head())
# Display last 5 rowsprint("\nLast 5 Rows:\n", df.tail())
# Display 10 random rowsprint("\nRandom 10 Rows:\n", df.sample(10))
```

✓ Explanation:

- Loads CSV into pandas DataFrame.
- 
- Shows head, tail, and random sample of 10 rows.
- 

---

Would you like me to combine all (PHP + Python) neatly in a ready-to-print PDF assignment format (with headings, outputs, and explanations)?

You said:

Q.1) Q.2) Write a PHP script to accept 2 strings from the user, the first string should be a sentence and second can be a word. a. Delete a small part from first string after accepting position and number of characters to remove. b. Insert the given small string in the given big string at specified position without removing any characters from the big string. c. Replace some characters/ words from given big string with the given small string at specified position. [15] Write a Python program [15] 1. To create a dataframe containing columns name, age and percentage. Add 10 rows to the dataframe. View the dataframe. 2. To print the shape, number of rows-columns, data types, feature names and the description of the data 3. To Add 5 rows with duplicate values and missing values. Add a column 'remarks' with empty values. Display the data.

ChatGPT said:

Here's the complete, neat, assignment-ready solution for both questions — PHP (Q.1) and Python (Q.2) with clear explanations and working code ☐

---

☐ Q.1) PHP Script — String Manipulation

(15 Marks)

```
<!DOCTYPE html>
<html>
<head>
  <title>String Operations in PHP</title>
</head>
<body>
<h2>String Manipulation Program</h2>

<form method="post">
  <label>Enter the First String (Sentence):</label> <br>
  <input type="text" name="str1" size="60" required> <br> <br>

  <label>Enter the Second String (Word):</label> <br>
  <input type="text" name="str2" required> <br> <br>

  <label>Enter the Position:</label>
  <input type="number" name="pos" required> <br> <br>

  <label>Enter the Number of Characters to Remove (for Deletion):</label>
  <input type="number" name="num" required> <br> <br>

  <input type="submit" name="submit" value="Perform Operations">
</form>

<hr>
<?phpif (isset($_POST['submit'])) {
  $str1 = $_POST['str1']; // Main string
  $str2 = $_POST['str2']; // Small string
  $pos = $_POST['pos'];
  $num = $_POST['num'];

  echo "<b>Original Sentence:</b> $str1<br>";
  echo "<b>Small Word:</b> $str2<br><hr>";

  // (a) Delete part of the string
  $deleted = substr_replace($str1, "", $pos, $num);
  echo "<b>a) After Deleting $num Characters from Position $pos:</b><br>$deleted<br><br>";

  // (b) Insert small string at specific position
  $inserted = substr_replace($str1, $str2, $pos, 0);
  echo "<b>b) After Inserting '$str2' at Position $pos:</b><br>$inserted<br><br>";

  // (c) Replace characters/words
  $replaced = substr_replace($str1, $str2, $pos, $num);
  echo "<b>c) After Replacing $num Characters from Position $pos with '$str2':</b><br>$replaced<br><br>";
}>
</body>
</html>
```

✓ Explanation:

- 

Accepts two strings, position, and number of characters from user.

- 
- 

Uses PHP's `substr_replace()` for:

- 
- 

(a) Deletion

- 
- 

(b) Insertion

- 
- 

(c) Replacement

- 
- 

Displays results for each operation clearly.

- 

## □ Q.2) Python Program — DataFrame Operations

(15 Marks)

```
import pandas as pd
import numpy as np

# 1. Create DataFrame with 10 rows
data = {
    "Name": ["Amit", "Sneha", "Ravi", "Priya", "Karan", "Meena", "Vikas", "Neha", "Rahul", "Pooja"],
    "Age": [21, 22, 23, 22, 21, 23, 24, 22, 25, 21],
    "Percentage": [85, 90, 78, 92, 88, 84, 80, 91, 87, 89]
}

df = pd.DataFrame(data)
print("1 □ Original DataFrame:\n", df)
print("\n-----")

# 2. Display DataFrame details
print("2 □ DataFrame Information:\n")
print("Shape:", df.shape)
print("Rows:", df.shape[0], " Columns:", df.shape[1])
print("\nData Types:\n", df.dtypes)
print("\nColumn Names:", df.columns.tolist())
print("\nDescription:\n", df.describe())
print("\n-----")

# 3. Add 5 rows (duplicates + missing values) and a 'remarks' column
extra_data = {
    "Name": ["Amit", "Sneha", None, "Ravi", None],
    "Age": [21, None, 24, 23, None],
    "Percentage": [85, 90, None, 78, 82]
}
```



```

}

extra_df = pd.DataFrame(extra_data)
df = pd.concat([df, extra_df], ignore_index=True)
# Add empty column
df["Remarks"] = ""
print("3 Updated DataFrame with Duplicates, Missing Values and 'Remarks' Column:\n")print(df)

```

✓ Explanation:

- 
- Step 1: Creates DataFrame with 10 rows (Name, Age, Percentage).
- 
- 
- Step 2: Prints shape, columns, datatypes, description.
- 
- 
- Step 3: Adds 5 new rows (some with duplicates or missing values) and a new column 'Remarks'.
- 

---

Would you like me to generate a ready-to-print PDF version with both codes (formatted + explanation + sample output layout)? It'll look like a perfect college submission.

You said:

Q.1) Write a menu driven program to perform the following operations on associative arrays: a) Split an array into chunks b) Sort the array by values without changing the keys. c) Filter the even elements from an array. [15]  
 Q.2 A) Generate a random array of 50 integers and display them using a line chart, scatter plot, histogram and box plot. Apply appropriate color, labels and styling options. [10] Q.2 B) Add two outliers to the above data and display the box plot.

ChatGPT said:

Here's your Assignment Solution (Q.1 PHP + Q.2 Python) — clear, structured, and ready for submission ✓

---

## □ Q.1) PHP — Menu Driven Program on Associative Arrays

(15 Marks)

```
<!DOCTYPE html>
<html>
<head>
  <title>Associative Array Operations</title>
</head>
<body>
<h2>Menu Driven Program - Associative Arrays</h2>

<form method="post">
  <label>Enter Associative Array (Format: key1=value1, key2=value2, ...):</label> <br>
  <input type="text" name="array" value="a=10, b=15, c=22, d=33, e=44" size="60"
required> <br> <br>

  <label>Select Operation:</label> <br>
  <select name="operation">
    <option value="chunk">a) Split Array into Chunks</option>
    <option value="sortvalue">b) Sort Array by Values (Preserve Keys)</option>
    <option value="filtereven">c) Filter Even Elements</option>
  </select> <br> <br>

  <label>If splitting, enter chunk size:</label>
  <input type="number" name="chunksize" value="2"> <br> <br>

  <input type="submit" name="submit" value="Perform Operation">
</form>

<hr>
<?phpif (isset($_POST['submit'])) {
  // Convert user input to associative array
  $input = $_POST['array'];
  $pairs = explode(",", $input);
  $assocArray = [];

  foreach ($pairs as $pair) {
    list($key, $value) = explode("=", trim($pair));
    $assocArray[$key] = (int)$value;
  }

  $operation = $_POST['operation'];

  echo "<b>Original Array:</b><br>";
  print_r($assocArray);
  echo "<hr>";

  // a) Split into Chunks
  if ($operation == "chunk") {
    $size = (int)$_POST['chunksize'];
    $chunks = array_chunk($assocArray, $size, true);
    echo "<b>Array Split into Chunks of $size:</b><br>";
    echo "<pre>";
    print_r($chunks);
    echo "</pre>";
```

```

    }

    // b) Sort by Values (Preserving Keys)
    elseif ($operation == "sortvalue") {
        asort($assocArray);
        echo "<b>Array Sorted by Values (Keys Preserved):</b><br>";
        echo "<pre>";
        print_r($assocArray);
        echo "</pre>";
    }

    // c) Filter Even Elements
    elseif ($operation == "filtereven") {
        $filtered = array_filter($assocArray, function($val) {
            return $val % 2 == 0;
        });
        echo "<b>Filtered Array (Even Values Only):</b><br>";
        echo "<pre>";
        print_r($filtered);
        echo "</pre>";
    }
}
}??>
</body>
</html>

```

### ✓ Explanation:

- Takes associative array input (key=value format).

- 
- 

Menu allows three operations:

- 

1.

array\_chunk() → split into chunks

2.

3.

asort() → sort by values, keeping keys

4.

5.

array\_filter() → filter even values

6.

- 

Displays output using <pre> for clarity.

- 

---

## □ Q.2) Python — Data Visualization and Outliers

(15 Marks)

```
import numpy as npimport matplotlib.pyplot as plt
# Q2(A) Generate random array and plots
data = np.random.randint(10, 100, 50)

plt.figure(figsize=(12, 10))
# Line Chart
plt.subplot(2, 2, 1)
plt.plot(data, color='blue', marker='o')
plt.title("Line Chart")
plt.xlabel("Index")
plt.ylabel("Value")
# Scatter Plot
plt.subplot(2, 2, 2)
plt.scatter(range(len(data)), data, color='green')
plt.title("Scatter Plot")
plt.xlabel("Index")
plt.ylabel("Value")
# Histogram
plt.subplot(2, 2, 3)
plt.hist(data, bins=10, color='orange', edgecolor='black')
plt.title("Histogram")
plt.xlabel("Value")
plt.ylabel("Frequency")
# Box Plot
plt.subplot(2, 2, 4)
plt.boxplot(data, patch_artist=True, boxprops=dict(facecolor="lightblue"))
plt.title("Box Plot")

plt.tight_layout()
plt.show()
# Q2(B) Add two outliers and re-display box plot
data_with_outliers = np.append(data, [200, 250])

plt.figure(figsize=(5, 4))
plt.boxplot(data_with_outliers, patch_artist=True, boxprops=dict(facecolor="salmon"))
plt.title("Box Plot with Outliers")
plt.show()
```

✓ Explanation:

- 

Generates 50 random integers (10–100).

- 

-

Displays:

- 
- 

Line Chart

- 
- 

Scatter Plot

- 
- 

Histogram

- 
- 

Box Plot

- 
- 

Adds two outliers (200, 250) and re-displays updated box plot.

- 

---

Would you like me to make a printable PDF version of this slip (with formatted code + labeled outputs + headings) for submission?

You said:

Q.1) Create an array of 15 high temperatures, approximating the weather for a spring month, then find the average high temp, the five warmest high temps Display the result on the browser. [15] Q.2 A) Import dataset "iris.csv". Write a Python program to create a Bar plot to get the frequency of the three species of the Iris data. Q.2 B)Write a Python program to create a histogram of the three species of the Iris data.

ChatGPT said:

Here's the complete solution for your given slip — includes both PHP (Q1) and Python (Q2) answers neatly with explanation and code ☐

---

## □ Q.1) PHP Program — Weather Temperature Analysis

(15 Marks)

Question:

Create an array of 15 high temperatures approximating the weather for a spring month, then find the average high temperature and the five warmest high temperatures. Display the result on the browser.

---

### ✓ PHP Code:

```
<!DOCTYPE html>
<html>
<head>
    <title>Spring Month Temperature Analysis</title>
</head>
<body style="font-family: Arial; background-color: #f2f2f2; color:#333;">
<h2>□ Spring Month - Temperature Report</h2>
<?php// Step 1: Create an array of 15 high temperatures$temperatures = array(28, 32, 30, 27, 29, 33,
31, 34, 30, 28, 35, 29, 32, 33, 31);
echo "<b>Daily High Temperatures (°C):</b><br>";echo implode(" ", $temperatures) . "<br><hr>";
// Step 2: Calculate average temperature$average = array_sum($temperatures) /
count($temperatures);echo "<b>Average High Temperature:</b> " . round($average, 2) .
"°C<br><br>";
// Step 3: Sort in descending order to find 5 warmest daysrsort($temperatures);$warmest =
array_slice($temperatures, 0, 5);
echo "<b>Top 5 Warmest High Temperatures (°C):</b><br>";echo implode(" ", $warmest);?>
</body>
</html>
```

---

### □ Explanation:

- `array_sum()` → sums all elements.
- 
- 
- `count()` → finds number of days (15).
-

- 

`rsort()` → sorts array in descending order.

- 

- 

`array_slice()` → extracts top 5 warmest temperatures.

- 

□ Output Example (on browser):

Daily High Temperatures (°C): 28, 32, 30, 27, 29, 33, 31, 34, 30, 28, 35, 29, 32, 33, 31  
Average High Temperature: 31.0°C  
Top 5 Warmest High Temperatures (°C): 35, 34, 33, 33, 32

---

## □ Q.2A) Python — Bar Plot for Iris Dataset

(10 Marks)

```
import pandas as pd
import matplotlib.pyplot as plt

# Load iris dataset
df = pd.read_csv("iris.csv")

# Count frequency of each species
species_count = df['species'].value_counts()

# Create bar plot
plt.bar(species_count.index, species_count.values, color=['lightblue', 'lightgreen', 'pink'])
plt.title("Frequency of Three Iris Species")
plt.xlabel("Species")
plt.ylabel("Frequency")
plt.show()
```

✓ Explanation:

- 

Loads `iris.csv` using pandas.

- 

- 

Counts species frequency.

- 

- 

Plots a bar chart for visual frequency comparison.

-

---

## □ Q.2B) Python — Histogram for Iris Dataset

(5 Marks)

```
import pandas as pd
import matplotlib.pyplot as plt

# Load dataset
df = pd.read_csv("iris.csv")
# Create histogram for each species' Petal Length (example)
species = df['species'].unique()
for sp in species:
    subset = df[df['species'] == sp]
    plt.hist(subset['petal_length'], bins=10, alpha=0.6, label=sp)

plt.title("Histogram of Petal Length for Three Iris Species")
plt.xlabel("Petal Length (cm)")
plt.ylabel("Frequency")
plt.legend()
plt.show()
```

✓ Explanation:

- Loops through all three Iris species.
- 
- Creates histograms comparing petal\_length distribution for each.
- 
- Uses transparency (alpha) for overlap visibility.
- 

---

Would you like me to generate this as a formatted printable PDF (with both PHP & Python answers neatly structured) for your submission file?

You said:

Q.1) Write a menu driven program to perform the following queue related operations a) Insert an element in queue b) Delete an element from queue c) Display the contents of queue [15] Q.2) Dataset Name: winequality-red.csv [15] Write a program in python to perform following tasks a. Rescaling:



Normalised the dataset using MinMaxScaler class b. Standardizing Data (transform them into a standard Gaussian distribution with a mean of 0 and a standard deviation of 1) c. Normalizing Data ( rescale each observation to a length of 1 (a unit norm). For this, use the Normalizer class.)

ChatGPT said:

Here's the full solution for your given slip (Q1 in PHP & Q2 in Python) — formatted, complete, and ready for submission ✓

---

## □ Q.1) PHP — Menu Driven Program for Queue Operations

(15 Marks)

Question:

Write a menu-driven program to perform the following queue-related operations:

- a) Insert an element in queue
  - b) Delete an element from queue
  - c) Display the contents of queue
- 

✓ PHP Code:

```
<!DOCTYPE html>
<html>
<head>
  <title>Queue Operations in PHP</title>
</head>
<body style="font-family: Arial; background-color: #f2f2f2; color:#333;">
<h2>Queue Operations (Menu Driven)</h2>

<form method="post">
  <label><b>Enter Element:</b></label>
  <input type="text" name="element"><br><br>

  <input type="submit" name="insert" value="Insert Element">
  <input type="submit" name="delete" value="Delete Element">
  <input type="submit" name="display" value="Display Queue">
</form>
<hr>
<?phpsession_start();
// Initialize queue if not alreadyif (!isset($_SESSION['queue'])) {
  $_SESSION['queue'] = array();
```

```

}
// a) Insert element if (isset($_POST['insert'])) {
    $element = trim($_POST['element']);
    if ($element != "") {
        array_push($_SESSION['queue'], $element);
        echo "<b>Element '$element' inserted in the queue.</b><br>";
    } else {
        echo "<b style='color:red;'>Please enter a value to insert.</b><br>";
    }
}
// b) Delete element if (isset($_POST['delete'])) {
    if (count($_SESSION['queue']) > 0) {
        $deleted = array_shift($_SESSION['queue']);
        echo "<b>Deleted Element:</b> $deleted<br>";
    } else {
        echo "<b style='color:red;'>Queue is empty! Nothing to delete.</b><br>";
    }
}
// c) Display queue if (isset($_POST['display'])) {
    if (count($_SESSION['queue']) > 0) {
        echo "<b>Current Queue Elements:</b><br>";
        foreach ($_SESSION['queue'] as $item) {
            echo "$item ";
        }
    } else {
        echo "<b style='color:red;'>Queue is empty!</b>";
    }
}
}??>
</body>
</html>

```

---

## □ Explanation:

- 

Uses PHP Sessions to preserve queue data across form submissions.

- 
- 

`array_push()` → inserts element.

- 
- 

`array_shift()` → deletes first element (FIFO).

- 
- 

Displays queue contents neatly on the page.

•

### □ Output Example:

Element '10' inserted in the queue. Current Queue Elements: 10 20 30  
Deleted Element: 10

---

## □ Q.2) Python — Data Normalization, Standardization, and Rescaling

Dataset: winequality-red.csv  
(15 Marks)

---

### ✓ Python Code:

```
import pandas as pd from sklearn.preprocessing import MinMaxScaler, StandardScaler, Normalizer
# Load dataset
df = pd.read_csv("winequality-red.csv") print("Original Data (first 5 rows):") print(df.head())
# a) Rescaling (Min-Max Normalization)
scaler = MinMaxScaler()
rescaled = scaler.fit_transform(df)
rescaled_df = pd.DataFrame(rescaled, columns=df.columns) print("\n--- a) Rescaled Dataset (Min-Max)
---") print(rescaled_df.head())
# b) Standardizing Data (Z-score)
std_scaler = StandardScaler()
standardized = std_scaler.fit_transform(df)
standardized_df = pd.DataFrame(standardized, columns=df.columns) print("\n--- b) Standardized
Dataset (Mean=0, SD=1) ---") print(standardized_df.head())
# c) Normalizing Data (Unit Norm)
normalizer = Normalizer()
normalized = normalizer.fit_transform(df)
normalized_df = pd.DataFrame(normalized, columns=df.columns) print("\n--- c) Normalized Dataset
(Unit Norm) ---") print(normalized_df.head())
```

---

### □ Explanation:

Transformation Type	Purpose	Function Used
Rescaling (MinMaxScaler)	Brings all values between 0 and 1	MinMaxScaler()

Transformation Type	Purpose	Function Used
Standardization (Z-score)	Centers data (mean = 0, std = 1)	StandardScaler()
Normalization (Unit Norm) Scales each row vector to length 1 Normalizer()		

#### □ Output Example:

```

--- a) Rescaled Dataset ---
fixed acidity volatile acidity ... alcohol quality0    0.31035    0.18644 ... 0.56757    0.3333
...

--- b) Standardized Dataset ---
fixed acidity volatile acidity ... alcohol quality0    -0.52836    1.29026 ... -0.96026   -0.7877
...

--- c) Normalized Dataset ---
fixed acidity volatile acidity ... alcohol quality0    0.21833    0.01749 ... 0.09254    0.01783
...

```

Would you like me to generate a formatted PDF version (with both Q1 & Q2 solutions, outputs, and explanations) for easy print or submission?

You said:

Q.1) Q.2) Viva Write a menu driven program to perform the following stack related operations: a) Insert an element in stack b) Delete an element from stack c) Display the contents of stack Dataset Name: winequality-red.csv [15] [15] Write a program in python to perform following task a. Rescaling: Normalised the dataset using MinMaxScaler class b. Standardizing Data (transform them into a standard Gaussian distribution with a mean of 0 and a standard deviation of 1) c. Binarizing Data using we use the Binarizer class (Using a binary threshold, it is possible to transform our data by marking the values above it 1 and those equal to or below it, 0)

ChatGPT said:

Perfect ✓

Here's your complete Viva Slip Answer (Q.1 in PHP + Q.2 in Python) — clearly formatted, fully functional, and ready to print or submit.

## □ Q.1) PHP — Menu Driven Program for Stack Operations

(15 Marks)

Question:

Write a menu-driven program to perform the following stack-related operations:

- a) Insert an element in stack
- b) Delete an element from stack
- c) Display the contents of stack

---

✓ PHP Code:

```
<!DOCTYPE html>
<html>
<head>
    <title>Stack Operations in PHP</title>
</head>
<body style="font-family: Arial; background-color: #f2f2f2; color:#333;">
<h2>□ Stack Operations (Menu Driven)</h2>

<form method="post">
    <label><b>Enter Element:</b></label>
    <input type="text" name="element">
    <br><br>
    <input type="submit" name="push" value="Push (Insert)">
    <input type="submit" name="pop" value="Pop (Delete)">
    <input type="submit" name="display" value="Display Stack">
</form>
<hr>
<?phpsession_start();
// Initialize stack if not already createdif (!isset($_SESSION['stack'])) {
    $_SESSION['stack'] = array();
}
// a) Push operation (Insert element)if (isset($_POST['push'])) {
    $element = trim($_POST['element']);
    if ($element != "") {
        array_push($_SESSION['stack'], $element);
        echo "<b>Element '$element' pushed into the stack.</b><br>";
    } else {
        echo "<b style='color:red;'>Please enter a value to insert.</b><br>";
    }
}
// b) Pop operation (Delete element)if (isset($_POST['pop'])) {
    if (count($_SESSION['stack']) > 0) {
        $deleted = array_pop($_SESSION['stack']);
        echo "<b>Popped Element:</b> $deleted<br>";
    } else {
        echo "<b style='color:red;'>Stack is empty! Nothing to pop.</b><br>";
    }
}
```

```

    }
}
// c) Display stack contents if (isset($_POST['display'])) {
    if (count($_SESSION['stack']) > 0) {
        echo "<b>Current Stack Elements (Top to Bottom):</b><br>";
        $reversed = array_reverse($_SESSION['stack']);
        foreach ($reversed as $item) {
            echo "$item<br>";
        }
    } else {
        echo "<b style='color:red;'>Stack is empty!</b>";
    }
}
}??>
</body>
</html>

```

---

### □ Explanation:

- Uses PHP Sessions to store stack elements.

- 
- 

`array_push()` → Push element (Insert).

- 
- 

`array_pop()` → Pop element (Delete).

- 
- 

Displays elements in LIFO order (Last In, First Out).

- 

### □ Example Output:

Element '20' pushed into the stack.  
Popped Element: 20Current Stack Elements:504030

---

## □ Q.2) Python — Data Preprocessing with winequality-red.csv

(15 Marks)

### ✓ Python Code:

```
import pandas as pd from sklearn.preprocessing import MinMaxScaler, StandardScaler, Binarizer
# Load dataset
df = pd.read_csv("winequality-red.csv")
print("Original Data (first 5 rows):") print(df.head())
# a) Rescaling using MinMaxScaler (0 to 1 normalization)
minmax = MinMaxScaler()
rescaled = minmax.fit_transform(df)
rescaled_df = pd.DataFrame(rescaled, columns=df.columns) print("\n--- a) Rescaled Dataset
(MinMaxScaler) ---") print(rescaled_df.head())
# b) Standardizing Data (mean=0, std=1)
standard = StandardScaler()
standardized = standard.fit_transform(df)
standardized_df = pd.DataFrame(standardized, columns=df.columns) print("\n--- b) Standardized
Dataset (Z-score) ---") print(standardized_df.head())
# c) Binarizing Data using Binarizer (threshold = 0.5)
binarizer = Binarizer(threshold=0.5)
binarized = binarizer.fit_transform(rescaled) # using rescaled dataset for binary conversion
binarized_df = pd.DataFrame(binarized, columns=df.columns) print("\n--- c) Binarized Dataset
(Threshold = 0.5) ---") print(binarized_df.head())
```

---

### □ Explanation Table:

Step	Technique	Description	Function
a)	Rescaling	Converts all data to 0–1 range	MinMaxScaler()
b)	Standardizing	Converts to mean=0, std=1	StandardScaler()
c)	Binarizing	Converts values > threshold → 1, else 0	Binarizer(threshold=0.5)

---

### □ Output Example:

```
--- a) Rescaled Dataset (MinMaxScaler) ---
fixed acidity volatile acidity ... alcohol quality
0 0.31035 0.18644 ... 0.56757 0.33333

--- b) Standardized Dataset (Z-score) ---
fixed acidity volatile acidity ... alcohol quality
0 -0.52836 1.29026 ... -0.96026 -0.7877
```

--- c) Binarized Dataset (Threshold = 0.5) ---  
fixed acidity volatile acidity ... alcohol quality  
0 0.0 0.0 ... 1.0 0.0

---

Would you like me to make this as a formatted PDF (with headings, code boxes, and explanation) for your viva/college file submission?

You said:

Q.1) Write a PHP program to read two file names from user and append content of first file into second file. [15] Q.2 A) Import dataset "iris.csv". Write a Python program to create a Bar plot to get the frequency of the three species of the Iris data. [10] Q.2 B) Write a Python program to create a histogram of the three species of the Iris data. [5]

ChatGPT said:

Perfect ✓

Here's your Viva Slip Full Answer (Q.1 in PHP + Q.2 in Python) — clearly written, well-formatted, and ready for submission or viva reference.

---

## □ Q.1) PHP Program — Append Content of One File into Another

(15 Marks)

✓ Question:

Write a PHP program to read two file names from the user and append the content of the first file into the second file.

---

✓ PHP Code:

```
<!DOCTYPE html>
<html>
<head>
```



```

<title>Append File Content in PHP</title>
</head>
<body style="font-family: Arial; background-color:#f2f2f2; color:#333;">
<h2>□ Append File Content</h2>

<form method="post">
  <label><b>Enter First File Name (Source):</b></label><br>
  <input type="text" name="file1" required><br><br>

  <label><b>Enter Second File Name (Destination):</b></label><br>
  <input type="text" name="file2" required><br><br>

  <input type="submit" name="submit" value="Append Content">
</form>
<hr>
<?phpif (isset($_POST['submit'])) {
  $file1 = $_POST['file1'];
  $file2 = $_POST['file2'];

  // Check if first file exists
  if (file_exists($file1) && file_exists($file2)) {
    $content = file_get_contents($file1);
    file_put_contents($file2, $content, FILE_APPEND);
    echo "<b>✔ Content of '$file1' has been appended to '$file2' successfully.</b>";
  } else {
    echo "<b style='color:red;'>✗ One or both files do not exist!</b>";
  }
}
?>
</body>
</html>

```

## □ Explanation:

Step	Function	Purpose
file_get_contents()	Reads all data from first file	To get content
file_put_contents()	Writes data to second file	FILE_APPEND keeps old data and adds new
Checks with file_exists()	Ensures both files are valid before appending	

## □ Example Output:

✔ Content of 'source.txt' has been appended to 'destination.txt' successfully.

Q.2A) Python — Bar Plot of Iris Species Frequency

(10 Marks)

Python Code:

```
import pandas as pdimport matplotlib.pyplot as plt
# Load dataset
df = pd.read_csv("iris.csv")
# Count frequency of each species
species_count = df['species'].value_counts()
# Create bar plot
plt.bar(species_count.index, species_count.values, color=['pink', 'lightgreen', 'skyblue'])
plt.title("Frequency of Iris Species")
plt.xlabel("Species")
plt.ylabel("Count")
plt.grid(axis='y', linestyle='--', alpha=0.6)
plt.show()
```

Explanation:

Step	Operation	Function
Load dataset	pd.read_csv()	Reads CSV data
Count species	value_counts()	Counts each type
Draw bar plot	plt.bar()	Displays frequency

Output:

Bar graph showing count of:

- Setosa
- 
- Versicolor
- 
- Virginica
-

---

## □ Q.2B) Python — Histogram of Iris Species

(5 Marks)

### ✓ Python Code:

```
import pandas as pdimport matplotlib.pyplot as plt
# Load dataset
df = pd.read_csv("iris.csv")
# Create histogram for each species
df[df['species'] == 'setosa'].iloc[:, 0:4].hist(figsize=(8,6))
plt.suptitle("Histograms for Setosa Features")
plt.show()

df[df['species'] == 'versicolor'].iloc[:, 0:4].hist(figsize=(8,6))
plt.suptitle("Histograms for Versicolor Features")
plt.show()

df[df['species'] == 'virginica'].iloc[:, 0:4].hist(figsize=(8,6))
plt.suptitle("Histograms for Virginica Features")
plt.show()
```

---

### □ Explanation:

Step	Purpose	Tool
<code>iloc[:,0:4]</code>	Select first 4 numeric columns (sepal/petal)	To plot
<code>.hist()</code>	Creates histogram automatically	From Pandas
<code>plt.suptitle()</code>	Adds title above plots	Matplotlib

### □ Output:

Histograms showing distribution of:

- Sepal Length
- 
- 
- Sepal Width
-

- Petal Length
- 
- Petal Width  
for each species.
- 

---

Would you like me to generate a single clean PDF version (formatted with code boxes and explanation tables) for this slip for printing or viva record?

You said:

Q.1) Write a menu driven program to perform various file operations. Accept filename from user. [15] a) Display type of file. b) Display last modification time of file c) Display the size of file d) Delete the file Q.2 A) Generate a random array of 50 integers and display them using a line chart, scatter plot, histogram and box plot. Apply appropriate color, labels and styling options. [10] Q.2 B) Create two lists, one representing subject names and the other representing marks obtained in those subjects. Display the data in a pie chart.

ChatGPT said:

Excellent — here's your Full Viva Slip Answer for the given question (Q.1 PHP + Q.2 Python).

It includes clear, ready-to-run code, explanations, and formatted structure — perfect for viva, assignment, or practical record.

---

## □ Q.1) PHP Program – File Operations (Menu Driven)

[15 Marks]

✓ Question:

Write a menu-driven program to perform various file operations. Accept the filename from the user and perform:

- a) Display type of file
  - b) Display last modification time of file
  - c) Display the size of file
  - d) Delete the file
- 

### ✓ PHP Code:

```
<!DOCTYPE html>
<html>
<head>
    <title>File Operations Menu</title>
</head>
<body style="font-family: Arial; background-color:#f8f9fa; color:#222;">
<h2>☐ PHP File Operations</h2>

<form method="post">
    <label> <b>Enter File Name:</b> </label> <br>
    <input type="text" name="filename" required> <br> <br>

    <label> <b>Select Operation:</b> </label> <br>
    <select name="choice" required>
        <option value="type">Display File Type</option>
        <option value="time">Display Last Modification Time</option>
        <option value="size">Display File Size</option>
        <option value="delete">Delete File</option>
    </select> <br> <br>

    <input type="submit" name="submit" value="Perform Operation">
</form>
<hr>
<?phpif (isset($_POST['submit'])) {
    $filename = $_POST['filename'];
    $choice = $_POST['choice'];

    if (file_exists($filename)) {
        switch ($choice) {
            case 'type':
                echo "<b>File Type:</b> " . filetype($filename);
                break;

            case 'time':
                echo "<b>Last Modified:</b> " . date("F d Y H:i:s.", filetype($filename));
                break;

            case 'size':
                echo "<b>File Size:</b> " . filesize($filename) . " bytes";
                break;

            case 'delete':
```

```

        unlink($filename);
        echo "<b>✔ File deleted successfully.</b>";
        break;
    }
} else {
    echo "<b style='color:red;'>✗ File does not exist!</b>";
}
}
}??>
</body>
</html>

```

---

### □ Explanation Table:

Operation	PHP Function	Description
File type	filetype()	Returns type (file, dir, etc.)
Last modified time	filemtime()	Gives last modification date/time
File size	filesize()	Returns file size in bytes
Delete	unlink()	Deletes file from system

---

### □ Q.2A) Python – Random Array Visualization

[10 Marks]

#### ✔ Question:

Generate a random array of 50 integers and display them using a line chart, scatter plot, histogram, and box plot with proper colors, labels, and styling.

---

#### ✔ Python Code:

```

import numpy as np
import matplotlib.pyplot as plt
# Generate random array of 50 integers
data = np.random.randint(1, 100, 50)
# Line Chart

```

```

plt.plot(data, color='blue', marker='o')
plt.title("Line Chart of Random Integers")
plt.xlabel("Index")
plt.ylabel("Value")
plt.grid(True)
plt.show()
# Scatter Plot
plt.scatter(range(50), data, color='green')
plt.title("Scatter Plot of Random Integers")
plt.xlabel("Index")
plt.ylabel("Value")
plt.grid(True)
plt.show()
# Histogram
plt.hist(data, bins=10, color='orange', edgecolor='black')
plt.title("Histogram of Random Integers")
plt.xlabel("Value")
plt.ylabel("Frequency")
plt.grid(axis='y', alpha=0.75)
plt.show()
# Box Plot
plt.boxplot(data, patch_artist=True, boxprops=dict(facecolor='lightblue'))
plt.title("Box Plot of Random Integers")
plt.ylabel("Values")
plt.grid(True)
plt.show()

```

---

## □ Explanation Table:

Chart Type	Function Used	Purpose
Line Chart	<code>plt.plot()</code>	Shows value trends
Scatter Plot	<code>plt.scatter()</code>	Shows distribution of points
Histogram	<code>plt.hist()</code>	Shows frequency of values
Box Plot	<code>plt.boxplot()</code>	Displays range, median, and outliers

---

## □ Q.2B) Python – Pie Chart of Subjects & Marks

[5 Marks]

✓ Python Code:

```
import matplotlib.pyplot as plt
# Data
subjects = ["Maths", "Science", "English", "History", "Computer"]
marks = [85, 90, 75, 80, 95]
# Create pie chart
plt.pie(marks, labels=subjects, autopct='%1.1f%%', startangle=120, shadow=True)
plt.title("Subject Wise Marks Distribution")
plt.show()
```

## □ Explanation:

Step	Function	Description
Define data	Lists of subjects & marks	Input data
Plot pie chart	plt.pie()	Draws pie chart
Add percentage	autopct	Displays numeric values
Add title	plt.title()	Gives heading to chart

## □ Output:

Pie chart showing percentage distribution of marks among 5 subjects.

Would you like me to generate this as a clean PDF (formatted for submission) — with your name, question headers, and neat layout for printing?

You said:

Q.1) Write a PHP program to read two file names from user and copy the content of first file into second file. [15] Q.2) Create a dataset data.csv having two categorical column (the country column, and the purchased column). [15] a. Apply OneHot coding on Country column. b. Apply Label encoding on purchased column

ChatGPT said:

Perfect ✓ — here's your Full Viva Slip Answer for the given question (Q.1 PHP + Q.2 Python).



Each answer includes code, explanation, and output summary, ready for viva, assignment, or submission.

---

## □ Q.1) PHP Program – Copy Content from One File to Another

[15 Marks]

✓ Question:

Write a PHP program to read two file names from the user and copy the content of the first file into the second file.

---

✓ PHP Code:

```
<!DOCTYPE html>
<html>
<head>
    <title>Copy File Content</title>
</head>
<body style="font-family: Arial; background-color: #f4f6f7; color: #333;">
<h2>□ Copy File Content (PHP)</h2>

<form method="post">
    <label><b>Enter Source File Name:</b></label><br>
    <input type="text" name="file1" required><br><br>

    <label><b>Enter Destination File Name:</b></label><br>
    <input type="text" name="file2" required><br><br>

    <input type="submit" name="submit" value="Copy Content">
</form>
<hr>
<?phpif (isset($_POST['submit'])) {
    $file1 = $_POST['file1'];
    $file2 = $_POST['file2'];

    if (file_exists($file1)) {
        // Read content from first file
        $data = file_get_contents($file1);

        // Copy to second file
        file_put_contents($file2, $data);
```

```

    echo "<b>✔ Content successfully copied from <u>$file1</u> to <u>$file2</u>.</b> <br>";
    echo "<pre>" . htmlspecialchars($data) . "</pre>";
} else {
    echo "<b style='color:red;'>✗ Source file does not exist!</b>";
}
}
}??>
</body>
</html>

```

---

## □ Explanation Table:

Step	PHP Function	Description
file_exists()	Checks if file is available	
file_get_contents()	Reads entire content of a file	
file_put_contents()	Writes data into another file	
htmlspecialchars() Displays content safely in browser		

---

## □ Sample Output:

✔ Content successfully copied from source.txt to destination.txt.  
This is sample file content.

---

## □ Q.2) Python – Categorical Encoding (OneHot + Label Encoding)

[15 Marks]

### ✔ Question:

Create a dataset `data.csv` having two categorical columns:

- Country

- 
- 
- 

Purchased

Perform the following:

- Apply OneHot Encoding on Country column.
- Apply Label Encoding on Purchased column.

---

### ✓ Step 1 – Create Dataset (data.csv):

Save the following data as data.csv in your working directory:

Country	Purchased
France	Yes
Spain	No
Germany	Yes
Spain	No
Germany	Yes
France	No

---

### ✓ Python Code:

```
import pandas as pd from sklearn.preprocessing import OneHotEncoder, LabelEncoder
# Step 1: Load dataset
data = pd.read_csv('data.csv') print("Original Data:\n", data)
# Step 2: OneHot Encoding on 'Country'
encoder = OneHotEncoder()
country_encoded = encoder.fit_transform(data[['Country']]).toarray()
# Convert encoded data to DataFrame
encoded_df = pd.DataFrame(country_encoded, columns=encoder.get_feature_names_out(['Country']))
# Step 3: Label Encoding on 'Purchased'
label_encoder = LabelEncoder()
data['Purchased_Label'] = label_encoder.fit_transform(data['Purchased'])
# Step 4: Merge encoded country columns with original dataframe
```

```
final_df = pd.concat([encoded_df, data], axis=1)
# Step 5: Display final resultprint("\n✅ Encoded DataFrame:\n", final_df)
```

## ❑ Explanation Table:

Step	Technique	Function	Purpose
1	OneHot Encoding	OneHotEncoder()	Converts country names into separate binary columns
2	Label Encoding	LabelEncoder()	Converts "Yes/No" into 1/0
3	Merge Data	pd.concat()	Combines encoded columns with original dataset

## ❑ Expected Output:

Original Data:

Country Purchased0 France Yes1 Spain No2 Germany Yes3 Spain No4  
Germany Yes5 France No

✅ Encoded DataFrame:

Country\_France Country\_Germany Country\_Spain Country Purchased Purchased\_Label0  
1.0 0.0 0.0 France Yes 1 0.0 0.0 1.0 Spain No  
02 0.0 1.0 0.0 Germany Yes 1...

## ❑ Summary:

- OneHot Encoding → For Country (creates binary columns per category)
- 
- 
- Label Encoding → For Purchased (Yes = 1, No = 0)
-

Would you like me to generate this as a neat formatted PDF (with headers, output examples, and your name) for direct printing or submission?

You said:

Q.1) Write a program to read a flat file "student.dat", calculate the percentage and display the data from file in tabular format.(Student.dat file contains rollno, name, OS, WT, DS, Python, Java, CN ) [15] Q.2) Write a Python program [15] 1. To create a dataframe containing columns name, age and percentage. Add 10 rows to the dataframe. View the dataframe. 2. To print the shape, number of rows-columns, data types, feature names and the description of the data. 3. To view basic statistical details of the data. 4. To Add 5 rows with duplicate values and missing values. Add a column 'remarks' with empty values. Display the data.

ChatGPT said:

Here's your complete solved answer sheet for the given viva slip — both Q1 (File Handling in Python) and Q2 (DataFrame operations) with code, explanation, and expected output ☐

---

## ☐ Q.1) Python Program – Read "student.dat", Calculate Percentage, and Display in Table

[15 Marks]

✓ Question:

Write a program to read a flat file `student.dat`, calculate the percentage, and display the data in tabular format.  
(File contains: RollNo, Name, OS, WT, DS, Python, Java, CN)

---

✓ Step 1: Create `student.dat` File (Sample Data)

You can manually create a file named `student.dat` in the same folder with the following data:

1, Raj, 78, 82, 70, 90, 85, 80

2, Meena, 85, 88, 79, 92, 86, 84  
3, Aarav, 80, 75, 72, 88, 90, 78  
4, Riya, 90, 95, 89, 94, 88, 90  
5, Sam, 70, 65, 68, 72, 70, 74

---

## ✓ Python Code:

```
import pandas as pd
# Step 1: Read data from file
cols = ["RollNo", "Name", "OS", "WT", "DS", "Python", "Java", "CN"]
df = pd.read_csv("student.dat", names=cols)
# Step 2: Calculate total and percentage
df["Total"] = df[["OS", "WT", "DS", "Python", "Java", "CN"]].sum(axis=1)
df["Percentage"] = round(df["Total"] / 6, 2)
# Step 3: Display data in tabular format
print("\n Student Report Card:\n")
print(df.to_string(index=False))
```

---

## □ Explanation Table:

Step	Function/Concept	Purpose
pd.read_csv()	Reads flat file	Reads .dat file as CSV
sum(axis=1)	Row-wise total	Adds all subject marks
/ 6	Average	Calculates percentage
to_string()	Pretty output	Displays as a clean table

---

## □ Expected Output:

□ Student Report Card:

```
RollNo  Name  OS  WT  DS  Python  Java  CN  Total  Percentage   1  Raj  78  82  70   90   85  80
485     80.83
      2  Meena  85  88  79   92   86  84   514    85.67
      3  Aarav  80  75  72   88   90  78   483    80.50
      4  Riya  90  95  89   94   88  90   546    91.00
      5   Sam  70  65  68   72   70  74   419    69.83
```

---

## □ Q.2) Python – DataFrame Creation and Analysis

[15 Marks]

---

### ✓ Question:

Perform the following operations on a DataFrame:

1.  
Create DataFrame with columns (name, age, percentage)
  - 2.
  3.  
Print shape, number of rows/columns, data types, feature names, description
  - 4.
  5.  
View basic statistical details
  - 6.
  7.  
Add 5 duplicate/missing rows + new column `remarks`
  - 8.
- 

### ✓ Python Code:

```
import pandas as pd
import numpy as np
# Step 1: Create a DataFrame
data = {
    "Name": ["Raj", "Riya", "Meena", "Sam", "Aarav", "Neha", "Karan", "Pooja", "Ravi", "Divya"],
    "Age": [20, 21, 22, 19, 23, 21, 20, 22, 24, 23],
    "Percentage": [80, 85, 78, 70, 82, 88, 76, 90, 84, 79]
}
```

```
df = pd.DataFrame(data)print("\n Original DataFrame:\n", df)
# Step 2: Print structure info
print("\n✔ Shape of DataFrame:", df.shape)
print("✔ Rows:", df.shape[0], "Columns:", df.shape[1])
print("\n✔ Data Types:\n", df.dtypes)
print("\n✔ Feature Names:", list(df.columns))
# Step 3: Statistical details
print("\n Statistical Summary:\n", df.describe())
# Step 4: Add 5 duplicate + missing rows and new column
extra_rows = pd.DataFrame({
    "Name": ["Raj", np.nan, "Meena", "Sam", np.nan],
    "Age": [20, np.nan, 22, 19, 24],
    "Percentage": [80, 85, np.nan, 70, 88]
})

df_final = pd.concat([df, extra_rows], ignore_index=True)
# Add empty column 'remarks'
df_final["Remarks"] = ""
print("\n Final DataFrame with Missing & Duplicate Values:\n", df_final)
```

Explanation Table:

Step	Function	Description
pd.DataFrame()	Create data table	Generates structured dataset
.shape	Shows (rows, columns)	Displays structure
.describe()	Statistical summary	Mean, std, min, max
pd.concat()	Merge DataFrames	Adds new rows
np.nan	Represents missing data Simulates null values	

Expected Output:

```
 Original DataFrame:
   Name Age Percentage0  Raj  20      801 Riya  21      852 Meena  22      783 Sam  19
704 Aarav  23      825 Neha  21      886 Karan  20      767 Pooja  22      908 Ravi  24
849 Divya  23      79
✔ Shape of DataFrame: (10, 3)✔ Rows: 10 Columns: 3✔ Data Types:
Name      object
Age        int64
Percentage int64dtype: object
 Statistical Summary:
      Age  Percentagecount  10.000000  10.000000mean  21.500000  81.200000std   1.581139
6.381338min   19.000000  70.000000max   24.000000  90.000000
```



□ Final DataFrame with Missing & Duplicate Values:

Name	Age	Percentage	Remarks	0	Raj	20.0	80.0	1	Riya	21.0	85.0	2	Meena	
22.0	78.0	3	Sam	19.0	70.0	4	Aarav	23.0	82.0	5	Neha	21.0	88.0	
6	Karan	20.0	76.0	7	Pooja	22.0	90.0	8	Ravi	24.0	84.0	9	Divya	23.0
79.0	10	Raj	20.0	80.0	11	NaN	NaN	85.0	12	Meena	22.0	NaN	13	
Sam	19.0	70.0	14	NaN	24.0	88.0								

---

✓ Result Summary:

- Q1: Reads student data, computes total & percentage, prints in tabular format.
- 
- 
- Q2: Demonstrates DataFrame creation, info, summary, missing data, and new column.
- 

---

Would you like me to combine both Q1 & Q2 into a clean, formatted PDF (ready for print/submission) with your name and subject details?

You said:

Q.1) Consider the following entities and their relationships [15] Event (eno , title , date ) Committee ( cno , name, head , from\_time ,to\_time , status) Event and Committee have many to many relationship. Write a php script to accept title of event and modify status committee as working. Q.2) Create a dataset data.csv having two categorical column (the country column, and the purchased column). [15] 1. Apply OneHot coding on Country column. 2. Apply Label encoding on purchased column

ChatGPT said:

Here's the complete answer for both questions neatly — ready to use in your practical or report.

---

## Q.1) PHP Script

Problem:

Event (eno, title, date) and Committee (cno, name, head, from\_time, to\_time, status) have a many-to-many relationship.

Write a PHP script to accept title of an event and modify committee status to "working".

---

### ✓ PHP Code

```
<!DOCTYPE html>
<html>
<head>
    <title>Update Committee Status</title>
</head>
<body>
<h2>Update Committee Status for an Event</h2>

<form method="post">
    Enter Event Title: <input type="text" name="event_title" required>
    <input type="submit" name="update" value="Update Status">
</form>

<?php// Database connection (adjust credentials as per your setup)$host = "localhost";$user =
"root";$pass = ""; $db = "eventdb"; // Database name$conn = mysqli_connect($host, $user, $pass,
$db);
if (!$conn) {
    die("Connection failed: " . mysqli_connect_error());
}
// Process formif (isset($_POST['update'])) {
    $title = $_POST['event_title'];

    // Find event id from title
    $event_query = "SELECT eno FROM event WHERE title='$title'";
    $event_result = mysqli_query($conn, $event_query);

    if (mysqli_num_rows($event_result) > 0) {
        $event = mysqli_fetch_assoc($event_result);
        $eno = $event['eno'];

        // Update status of committees related to that event
        $update_query = "UPDATE committee
            INNER JOIN event_committee ON committee.cno = event_committee.cno
            SET committee.status='working'
            WHERE event_committee.eno='$eno'";
        mysqli_query($conn, $update_query);

        echo "<p style='color:green;'>Committee status updated to 'working' for event '$title'</p>";
    } else {
        echo "<p style='color:red;'>Event not found!</p>";
    }
}
```

```
}  
mysqli_close($conn);?>  
</body>  
</html>
```

---

## □ Database Setup

```
CREATE DATABASE eventdb;  
USE eventdb;  
CREATE TABLE event(  
    eno INT AUTO_INCREMENT PRIMARY KEY,  
    title VARCHAR(50),  
    date DATE  
);  
CREATE TABLE committee(  
    cno INT AUTO_INCREMENT PRIMARY KEY,  
    name VARCHAR(50),  
    head VARCHAR(50),  
    from_time TIME,  
    to_time TIME,  
    status VARCHAR(20)  
);  
-- Relationship table  
CREATE TABLE event_committee(  
    eno INT,  
    cno INT,  
    FOREIGN KEY (eno) REFERENCES event(eno),  
    FOREIGN KEY (cno) REFERENCES committee(cno)  
);
```

---

## Q.2) Python Program

Task:

Create `data.csv` with 2 categorical columns — `Country`, `Purchased`.  
Perform OneHotEncoding and LabelEncoding.

---

## ✓ Python Code

```
import pandas as pd  
from sklearn.preprocessing import OneHotEncoder, LabelEncoder  
# Step 1: Create dataset  
data = {  
    'Country': ['India', 'France', 'Germany', 'India', 'France', 'Germany'],
```

```

    'Purchased': ['Yes', 'No', 'Yes', 'No', 'Yes', 'No']
}

df = pd.DataFrame(data)
df.to_csv('data.csv', index=False)print("Original Dataset:\n", df)
# Step 2: One Hot Encoding on 'Country'
onehot = OneHotEncoder()
country_encoded = onehot.fit_transform(df[['Country']]).toarray()

country_df = pd.DataFrame(country_encoded, columns=onehot.get_feature_names_out(['Country']))
# Step 3: Label Encoding on 'Purchased'
label = LabelEncoder()
df['Purchased_Label'] = label.fit_transform(df['Purchased'])
# Combine results
final_df = pd.concat([country_df, df[['Purchased', 'Purchased_Label']]], axis=1)print("\nEncoded
Dataset:\n", final_df)

```

---

## □ Output Example

Original Dataset:

```

Country Purchased0 India Yes1 France No2 Germany Yes3 India No4 France
Yes5 Germany No

```

Encoded Dataset:

```

Country_France Country_Germany Country_India Purchased Purchased_Label0 0.0
0.0 1.0 Yes 11 1.0 0.0 0.0 No 02 0.0
1.0 0.0 Yes 13 0.0 0.0 1.0 No 04 1.0
0.0 0.0 Yes 15 0.0 1.0 0.0 No 0

```

---

## ✓ Summary

Part	Language	Description
Q1	PHP	Updates committee status for a selected event (many-to-many relationship)
Q2	Python	Performs OneHotEncoding and LabelEncoding on categorical data

---

Would you like me to give a ready-to-run XAMPP folder structure (with sample SQL + PHP + output HTML layout)? It'll make it directly usable for your viva.

You said:

Q.1) Consider the following entities and their relationships [15] Student (Stud\_id,name,class) Competition (c\_no,c\_name,type) Relationship between student and competition is many-many with attribute rank and year. Create a RDB in 3NF for the above and solve the following. Using above database write a script in PHP to accept a competition name from user and display information of student who has secured 1st rank in that competition. Q.2) Write python program to a. Generate a random array of 50 integers and display them using a line chart, scatter plot, histogram and box plot. Apply appropriate color, labels and styling options. [15] b. Create two lists, one representing subject names and the other representing marks obtained in those subjects. Display the data in bar chart.

ChatGPT said:

Perfect — here's a complete, neat, and ready-to-use answer for both PHP and Python questions, exactly as per your question paper style.

---

## □ Q.1) PHP Script

### Question Summary:

We have:

- Student(Stud\_id, name, class)
- 
- Competition(c\_no, c\_name, type)

- 
- Many-to-many relationship between Student and Competition with attributes:

- 
- rank

- 
- 
- 

year

We must create a database (in 3NF) and write a PHP script to accept a competition name and display students who got 1st rank in that competition.

---

## ✓ Step 1 – Database Design (3NF)

```
CREATE DATABASE schooldb;
USE schooldb;
-- Table 1: Student
CREATE TABLE student (
  stud_id INT PRIMARY KEY AUTO_INCREMENT,
  name VARCHAR(50),
  class VARCHAR(20)
);
-- Table 2: Competition
CREATE TABLE competition (
  c_no INT PRIMARY KEY AUTO_INCREMENT,
  c_name VARCHAR(50),
  type VARCHAR(30)
);
-- Table 3: Student_Competition (Associative Entity)
CREATE TABLE student_competition (
  stud_id INT,
  c_no INT,
  rank INT,
  year YEAR,
  FOREIGN KEY (stud_id) REFERENCES student(stud_id),
  FOREIGN KEY (c_no) REFERENCES competition(c_no)
);
```

---

## ✓ Step 2 – Sample Data

```
INSERT INTO student (name, class) VALUES
('Riya', 'FYBSc'),
('Amit', 'SYBSc'),
('Karan', 'TYBSc'),
('Sneha', 'SYBSc');
INSERT INTO competition (c_name, type) VALUES
('Coding Contest', 'Technical'),
('Quiz Mania', 'General Knowledge'),
('Sports Meet', 'Athletic');
INSERT INTO student_competition (stud_id, c_no, rank, year) VALUES
(1, 1, 1, 2023),
```

```
(2, 1, 2, 2023),  
(3, 2, 1, 2024),  
(4, 3, 1, 2023);
```

---

## ✓ Step 3 – PHP Code

```
<!DOCTYPE html>  
<html>  
<head>  
    <title>Top Rank Student Finder</title>  
</head>  
<body>  
<h2>Find Student Who Secured 1st Rank in Competition</h2>  
  
<form method="post">  
    Enter Competition Name: <input type="text" name="comp_name" required>  
    <input type="submit" name="search" value="Search">  
</form>  
  
<?php// Database Connection$conn = mysqli_connect("localhost", "root", "", "schooldb");  
if (!$conn) {  
    die("Connection failed: " . mysqli_connect_error());  
}  
if (isset($_POST['search'])) {  
    $cname = $_POST['comp_name'];  
  
    $sql = "SELECT s.stud_id, s.name, s.class, c.c_name, sc.rank, sc.year  
            FROM student s  
            JOIN student_competition sc ON s.stud_id = sc.stud_id  
            JOIN competition c ON c.c_no = sc.c_no  
            WHERE c.c_name = '$cname' AND sc.rank = 1";  
  
    $result = mysqli_query($conn, $sql);  
  
    if (mysqli_num_rows($result) > 0) {  
        echo "<h3>Topper(s) in '$cname'</h3>";  
        echo "<table border='1' cellpadding='8'>  
            <tr>  
                <th>Student ID</th>  
                <th>Name</th>  
                <th>Class</th>  
                <th>Competition</th>  
                <th>Rank</th>  
                <th>Year</th>  
            </tr>";  
        while ($row = mysqli_fetch_assoc($result)) {  
            echo "<tr>  
                <td>{$row['stud_id']}</td>  
                <td>{$row['name']}</td>  
                <td>{$row['class']}</td>  
                <td>{$row['c_name']}</td>  
                <td>{$row['rank']}</td>  
                <td>{$row['year']}</td>  
            </tr>";  
        }  
    }  
}
```

```

    }
    echo "</table>";
} else {
    echo "<p style='color:red;'>No student found with 1st rank in '$cname'</p>";
}
}
mysqli_close($conn);?>
</body>
</html>

```

---

## □ Explanation

- User enters competition name (e.g., Coding Contest).
  - 
  - 
  - PHP script joins all three tables.
  - 
  - Displays all students having rank = 1 in that competition.
  -
- 

## □ Q.2) Python Program

### ✓ Part (a): Random Array Visualization

```

import numpy as np
import matplotlib.pyplot as plt
# Generate random array of 50 integers
data = np.random.randint(10, 100, 50)
# Line Chart
plt.figure(figsize=(6,4))
plt.plot(data, color='green', marker='o', linestyle='--')
plt.title("Line Chart of Random Integers")
plt.xlabel("Index")
plt.ylabel("Value")
plt.grid(True)
plt.show()
# Scatter Plot
plt.scatter(range(len(data)), data, color='blue')
plt.title("Scatter Plot")

```



```

plt.xlabel("Index")
plt.ylabel("Value")
plt.show()
# Histogram
plt.hist(data, bins=10, color='orange', edgecolor='black')
plt.title("Histogram of Random Data")
plt.xlabel("Value Range")
plt.ylabel("Frequency")
plt.show()
# Box Plot
plt.boxplot(data, patch_artist=True, boxprops=dict(facecolor='lightblue'))
plt.title("Box Plot of Random Data")
plt.ylabel("Values")
plt.show()

```

---

## ✓ Part (b): Bar Chart for Subjects and Marks

```

import matplotlib.pyplot as plt

subjects = ['Python', 'Java', 'DS', 'CN', 'WT']
marks = [85, 90, 78, 88, 92]

plt.bar(subjects, marks, color='teal', edgecolor='black')
plt.title("Marks Obtained in Subjects")
plt.xlabel("Subjects")
plt.ylabel("Marks")
plt.show()

```

---

## □ Output Overview

Line / Scatter / Histogram / Box Plot:

- Shows different visualizations of 50 random integers.
- Bar Chart:
- Displays marks for subjects like Python, Java, DS, etc.
-

---

## ✓ Summary Table

Question	Language	Description
Q1	PHP + MySQL	Accept competition name and show students with 1st rank
Q2a	Python	Random integer visualization (line, scatter, histogram, box plot)
Q2b	Python	Bar chart of subject marks

---

Would you like me to include the SQL insert data + sample browser output screenshot structure (HTML table preview) for your viva print file? It helps you show full working in your practical submission.

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