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You said:

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PDF

give ans with questions 1 to5

ChatGPT said:

Here are the answers for Slip 1 to Slip 5 from your uploaded TYBSc (CS) Web Technologies & Data Science Practical paper:

?? Slip 1

Q1) Create HTML5 page about your city.

```
<!DOCTYPE html>
<html>
<head>
<title>My City - Pune</title>
<style>
body { background-color: pink; text-align: center; }
h1 { color: blue; font-size: 36px; }
.landmark1 { color: red; font-family: Arial; }
.landmark2 { color: green; font-family: Verdana; }
.landmark3 { color: purple; font-family: 'Comic Sans MS'; }
</style>
</head>
<body>
<h1>PUNE</h1>
<p class="landmark1">Shaniwar Wada</p>
<p class="landmark2">Aga Khan Palace</p>
<p class="landmark3">Sinhagad Fort</p>
```

```

```

```
</body>
```

```
</html>
```

Q2A) Handling Missing Values:

```
import pandas as pd
data = pd.read_csv("Data.csv")
data['Salary'].fillna(data['Salary'].mean(), inplace=True)
data['Age'].fillna(data['Age'].mean(), inplace=True)
print(data)
```

Q2B) Line Plot (Name vs Salary):

```
import matplotlib.pyplot as plt
plt.plot(data['Name'], data['Salary'], marker='o', color='blue')
plt.xlabel('Name')
plt.ylabel('Salary')
plt.title('Name vs Salary')
plt.show()
```

Q2C) Load dataset (Heights & Weights):

```
df = pd.read_csv("heights_weights.csv")
print(df.head(10))
print(df.tail(10))
print(df.sample(20))
print(df.shape)
```

?? Slip 2

Q1) Company description with CSS:

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```

<title>Company Info</title>
<style>
h1 {background-color: green; color: red; font-family: "Comic Sans MS"; font-size: 30px;}
p {color: blue; font-size: 18px;}
</style>
</head>
<body>
<h1>TechVision Pvt. Ltd.</h1>
<p>TechVision is a leading software company specializing in web and AI-based products.</p>
</body>
</html>

```

Q2A) Box plots for Iris dataset:

```

import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt

df = pd.read_csv("iris.csv")
sns.boxplot(x='species', y='sepal_length', data=df)
sns.boxplot(x='species', y='sepal_width', data=df)
sns.boxplot(x='species', y='petal_length', data=df)
sns.boxplot(x='species', y='petal_width', data=df)
plt.show()

```

Q2B) Statistical details:

```

df2 = pd.read_csv("HeightsWeights.csv")
print(df2.describe())

```

?? Slip 3

Q1) HTML Book List:

```

<!DOCTYPE html>
<html>

```

```

<head>
<title>List of Books</title>
</head>
<body>
<h2>List of Books</h2>
<table border="1" cellpadding="5">
<tr><th>Item No</th><th>Item Name</th><th>Price (Rs. Paise)</th></tr>
<tr><td>1</td><td>Programming in Python</td><td>500.50</td></tr>
<tr><td>2</td><td>Programming in Java</td><td>345.00</td></tr>
</table>
</body>
</html>

```

Q2A) Random array visualization:

```

import numpy as np
import matplotlib.pyplot as plt

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

plt.figure()

plt.plot(data); plt.title('Line Chart'); plt.show()

plt.scatter(range(50), data); plt.title('Scatter Plot'); plt.show()

plt.hist(data); plt.title('Histogram'); plt.show()

plt.boxplot(data); plt.title('Box Plot'); plt.show()

```

Q2B) Data info:

```

df = pd.read_csv("User_Data.csv")

print(df.shape)

print(df.dtypes)

print(df.columns)

print(df.describe())

```

?? Slip 4

Q1) Bootstrap Layout:

```

<!DOCTYPE html>
<html lang="en">
<head>
<title>My Profile</title>
<link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css">
</head>
<body>
<div class="container">
  <h2 class="bg-primary text-white p-2 text-center">My Profile</h2>
  <div class="row">
    <div class="col-md-4 bg-light">
      <h4>Personal Info</h4>
      <p>Name: Shubham Jadhav<br>Email: shubham@mail.com</p>
    </div>
    <div class="col-md-4 bg-warning">
      <h4>Education</h4>
      <p>B.Sc. Computer Science<br>SPPU University</p>
    </div>
    <div class="col-md-4 bg-success text-white">
      <h4>Job Profile</h4>
      <p>Web Developer at Infosys</p>
    </div>
  </div>
</div>
</body>
</html>

```

Q2A & B) Same as Slip 3 (Random array plots + Data info).

?? Slip 5

Q1) Bootstrap College Layout:

```
<!DOCTYPE html>

<html lang="en">

<head>

<title>College Info</title>

<link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css">

</head>

<body>

<header class="bg-primary text-white text-center p-3">

<h1>ABC College of Science</h1>

</header>

<nav class="bg-success p-2 text-white text-center">

<a href="#">About Us</a>

</nav>

<section class="bg-warning p-3">

<h3>About College</h3>

<p>ABC College provides quality education in science and technology fields.</p>

</section>

<footer class="bg-danger text-white text-center p-2">

<p>Address: Pune, Maharashtra</p>

</footer>

</body>

</html>
```

Q2A, B, C) Same as Slip 1 (Handling missing values, line plot, height-weight dataset view).

Would you like me to include the Viva Questions and Answers (5 marks) for these slips too?

You said:

5 to 10

ChatGPT said:

Perfect ?? Here's the answer key for Slip 5 to Slip 10 (T.Y.B.Sc. Computer Science – Web Technologies & Data Science Practicals, SPPU, 2019 pattern) — with HTML / PHP / Python programs and Viva Q&A for each slip.

?? Slip 5

Q1) Bootstrap College Layout

```
<!DOCTYPE html>

<html lang="en">

<head>

<title>College Information</title>

<link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css">

</head>

<body>

<header class="bg-primary text-white text-center p-3">

  <h1>XYZ College of Science</h1>

</header>

<nav class="bg-success text-white p-2 text-center">

  <a href="#" class="text-white">About Us</a>

</nav>

<section class="bg-warning p-3">

  <h3>College Details</h3>

  <p>XYZ College provides high-quality education in science and technology.</p>

</section>

<footer class="bg-danger text-white text-center p-2">

  <p>Address: Ahmednagar, Maharashtra</p>

</footer>

</body>
```

</html>

Q2A) Handle Missing Values

```
import pandas as pd  
data = pd.read_csv("Data.csv")  
data['Salary'].fillna(data['Salary'].mean(), inplace=True)  
data['Age'].fillna(data['Age'].mean(), inplace=True)  
print(data)
```

Q2B) Line Plot (Name vs Salary)

```
import matplotlib.pyplot as plt  
plt.plot(data['Name'], data['Salary'], marker='o')  
plt.xlabel('Name')  
plt.ylabel('Salary')  
plt.title('Name vs Salary')  
plt.show()
```

Q2C) Heights & Weights Dataset

```
df = pd.read_csv("heights_weights.csv")  
print(df.head(10))  
print(df.tail(10))  
print(df.sample(20))  
print(df.shape)
```

Viva Questions

What is Bootstrap?

? A CSS framework for responsive design.

What is the use of pandas?

? To handle and analyze data efficiently.

What is a DataFrame?

? A 2D labeled data structure in pandas.

What does fillna() do?

? Replaces missing values.

What is a line plot used for?

? To visualize trends between two variables.

?? Slip 6

Q1) HTML5 Navigation Bar

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<style>
```

```
ul {
```

```
list-style-type: none;
```

```
margin: 0;
```

```
padding: 0;
```

```
background-color: #333;
```

```
overflow: hidden;
```

```
}
```

```
li { float: left; }
```

```
li a {
```

```
display: block;
```

```
color: white;
```

```
padding: 14px 16px;
```

```
text-decoration: none;
```

```
}
```

```
li a:hover { background-color: #111; }
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<ul>
```

```
<li><a href="#home">Home</a></li>
```

```
<li><a href="#about">About</a></li>
<li><a href="#services">Services</a></li>
<li><a href="#contact">Contact</a></li>
</ul>
</body>
</html>
```

Q2) Encoding

import pandas as pd

from sklearn.preprocessing import OneHotEncoder, LabelEncoder

```
data = pd.read_csv('Data.csv')
```

OneHot Encoding

```
encoder = OneHotEncoder()
```

```
country_encoded = encoder.fit_transform(data[['Country']]).toarray()
```

```
print(country_encoded)
```

Label Encoding

```
label = LabelEncoder()
```

```
data['Purchased'] = label.fit_transform(data['Purchased'])
```

```
print(data)
```

Viva

What is One-Hot Encoding? ? Converts categorical data into binary columns.

What is Label Encoding? ? Assigns numerical labels to categories.

What is HTML5? ? Latest version of HTML with semantic tags.

Difference between inline & internal CSS? ? Inline in tag, internal in <style>.

What is sklearn? ? A Python library for machine learning.

?? Slip 7

Q1) PHP String Operations

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<form method="post">
```

```
Enter Large String: <input type="text" name="large"><br>
```

```
Enter Small String: <input type="text" name="small"><br>
```

```
Enter n: <input type="number" name="n"><br>
```

```
<input type="submit" name="submit">
```

```
</form>
```

```
<?php
```

```
if(isset($_POST['submit'])){
```

```
    $large = $_POST['large'];
```

```
    $small = $_POST['small'];
```

```
    $n = $_POST['n'];
```

```
    echo "a) Small string at start: ".(strpos($large, $small) === 0 ? "Yes" : "No")."<br>";
```

```
    echo "b) Position of small string: ".strpos($large, $small)."<br>";
```

```
    echo "c) First $n char compare: ".(strncasecmp($large, $small, $n)==0 ? "Same" :  
    "Different")."<br>";
```

```
}
```

```
?>
```

```
</body>
```

```
</html>
```

Q2) Standardizing Data

```
import pandas as pd
```

```
from sklearn.preprocessing import StandardScaler
```

```
df = pd.read_csv("winequality-red.csv")
```

```
scaler = StandardScaler()
```

```
scaled = scaler.fit_transform(df)
```

```
print(scaled)
```

Viva

What is PHP? ? A server-side scripting language.

What is standardization? ? Converts data to mean 0 and std deviation 1.

What function finds substring? ? strpos().

What is StandardScaler? ? Class used for normalization.

Difference between GET and POST? ? GET visible in URL, POST hidden.

?? Slip 8

Q1) PHP String Split

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<form method="post">
```

```
Enter String: <input type="text" name="str"><br>
```

Select Separator:

```
<select name="sep">
```

```
<option>#</option><option>|</option><option>%</option>
```

```
</select>
```

```
<input type="submit" name="submit">
```

```
</form>
```

```
<?php
```

```
if(isset($_POST['submit'])){
```

```

$s = $_POST['str']; $sep = $_POST['sep'];
$arr = explode($sep, $s);
echo "a) Split Words: "; print_r($arr);
echo "<br>b) Replace Separator: ".str_replace($sep, "@", $s);
echo "<br>c) Last Word: ".$arr[count($arr)-1];
}
?>
</body>
</html>

```

Q2A) Line & Scatter Plot

```

import numpy as np, matplotlib.pyplot as plt
data = np.random.randint(1, 100, 50)
plt.plot(data); plt.title("Line Chart"); plt.show()
plt.scatter(range(50), data); plt.title("Scatter Plot"); plt.show()

```

Q2B) Pie Chart (Subjects vs Marks)

```

subjects = ['Math', 'Python', 'WT', 'DS', 'CN']
marks = [88, 92, 84, 79, 90]
plt.pie(marks, labels=subjects, autopct='%1.1f%%')
plt.title('Subject Marks')
plt.show()

```

Q2C) Iris Dataset Basic Info

```

import pandas as pd
df = pd.read_csv('winequality-red.csv')
print(df.describe())
print(df.shape)
print(df.head(3))

```

Viva

What is explode in PHP? ? Splits string into array.

What is str_replace()? ? Replaces substring.

What is pie chart used for? ? Display proportions.

What is scatter plot used for? ? Relation between two variables.

What does describe() return? ? Statistical summary.

?? Slip 9

Q1) PHP Math Operations

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<form method="post">
```

```
Number 1: <input type="number" name="n1"><br>
```

```
Number 2: <input type="number" name="n2"><br>
```

```
<input type="submit" name="submit">
```

```
</form>
```

```
<?php
```

```
if(isset($_POST['submit'])){
```

```
    $a=$_POST['n1']; $b=$_POST['n2'];
```

```
    function modVal($x,$y){ return $x%$y; }
```

```
    function power($x,$y){ return pow($x,$y); }
```

```
    function sumN($x){ return ($x*($x+1))/2; }
```

```
    function fact($n){ return $n<=1 ? 1 : $n*fact($n-1); }
```

```
    echo "Mod: ".modVal($a,$b)."<br>";
```

```
    echo "Power: ".power($a,$b)."<br>";
```

```
    echo "Sum 1..$a: ".sumN($a)."<br>";
```

```
    echo "Factorial of $b: ".fact($b);
```

```
}
```

```
?>
```

</body>

</html>

Q2A) Column-wise mean & median

```
import pandas as pd
```

```
df = pd.read_csv("SOCR-HeightWeight.csv")
```

```
print(df.mean())
```

```
print(df.median())
```

Q2B) Manhattan Distance

```
import numpy as np
```

```
points = np.random.rand(5,2)
```

```
dist = np.sum(np.abs(points[:, None] - points[None, :]), axis=2)
```

```
print(dist.sum())
```

Viva

What is factorial? ? Product of all positive integers up to n.

What is Manhattan distance? ? Sum of absolute differences between coordinates.

What is pow()? ? Function to find power.

What is a function in PHP? ? Reusable block of code.

What is CSV? ? Comma Separated Values file.

?? Slip 10

Q1) Bootstrap Buttons

```
<!DOCTYPE html>
```

```
<html lang="en">
```

```
<head>
```

```
<link rel="stylesheet"
```

```
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css">
```

```
</head>
```

```

<body class="p-4">
<button class="btn btn-primary">Primary</button>
<button class="btn btn-secondary">Secondary</button>
<button class="btn btn-success">Success</button>
<button class="btn btn-danger">Danger</button>
<button class="btn btn-warning">Warning</button>
<button class="btn btn-info">Info</button>
</body>
</html>

```

Q2A) Pie Plot for Iris Dataset

```

import pandas as pd, matplotlib.pyplot as plt
df = pd.read_csv("iris.csv")
species = df['species'].value_counts()
plt.pie(species, labels=species.index, autopct='%1.1f%%')
plt.title('Iris Species Frequency')
plt.show()

```

Q2B) View Statistical Details

```

df2 = pd.read_csv("winequality-red.csv")
print(df2.describe())

```

Viva

What is Bootstrap used for? ? UI & responsive design.

What is a pie chart? ? Circle chart showing proportion.

What is describe()? ? Summarizes dataset.

What library is used for plotting? ? Matplotlib.

How to install pandas? ? pip install pandas.

Would you like me to continue with Slip 11–15 next (with viva answers included)?

You said:

10 to 15

ChatGPT said:

Excellent ? Here are answers for Slip 10 to Slip 15 — each with HTML / PHP / Python programs and Viva Questions (5 marks) for your T.Y.B.Sc. (Computer Science) Web Technologies & Data Science Practical (CS-358).

?? Slip 10

Q1) Bootstrap Buttons

```
<!DOCTYPE html>

<html lang="en">

<head>

<link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css">

</head>

<body class="p-4 text-center">

<h3>Bootstrap Button Styles</h3>

<button class="btn btn-primary m-2">Primary</button>

<button class="btn btn-secondary m-2">Secondary</button>

<button class="btn btn-success m-2">Success</button>

<button class="btn btn-danger m-2">Danger</button>

<button class="btn btn-warning m-2">Warning</button>

<button class="btn btn-info m-2">Info</button>

</body>

</html>
```

Q2A) Pie Plot (Iris Data)

```
import pandas as pd

import matplotlib.pyplot as plt
```

```
df = pd.read_csv('iris.csv')

species = df['species'].value_counts()
```

```
plt.pie(species, labels=species.index, autopct='%1.1f%%')  
plt.title('Iris Species Distribution')  
plt.show()
```

Q2B) Statistical Details

```
df2 = pd.read_csv("winequality-red.csv")  
print(df2.describe())
```

Viva Questions

What is Bootstrap? ? CSS framework for responsive UI.

What is a pie chart used for? ? Display percentage distribution.

What does describe() return? ? Mean, std, min, max, etc.

How do you import a CSV file in Python? ? pd.read_csv("file.csv")

Name a Python plotting library. ? matplotlib

?? Slip 11

Q1) PHP Arithmetic Operations (using functions & include)

index.php

```
<form action="result.php" method="post">  
Number 1: <input type="number" name="num1"><br>  
Number 2: <input type="number" name="num2"><br>  
<select name="op">  
<option>Add</option><option>Subtract</option>  
<option>Multiply</option><option>Divide</option>  
</select><br>  
<input type="submit" value="Calculate">  
</form>
```

result.php

```

<?php
function calc($a, $b, $op='Add'){
    switch($op){
        case 'Add': return $a+$b;
        case 'Subtract': return $a-$b;
        case 'Multiply': return $a*$b;
        case 'Divide': return $b!=0 ? $a/$b : 'Error';
    }
}
}
include 'index.php';
echo "Result: ".calc($_POST['num1'], $_POST['num2'], $_POST['op']);
?>

```

Q2A) Random Array Visualization

```

import numpy as np
import matplotlib.pyplot as plt

data = np.random.randint(1, 100, 50)
plt.plot(data); plt.title("Line Chart"); plt.show()
plt.scatter(range(50), data); plt.title("Scatter Plot"); plt.show()
plt.hist(data); plt.title("Histogram"); plt.show()
plt.boxplot(data); plt.title("Box Plot"); plt.show()

```

Q2B) DataFrame with Missing & Duplicate Values

```

import pandas as pd

data = {'Name':['A','B','C','A','B',None],
        'Salary':[10000,20000,None,10000,20000,15000],
        'Dept':['IT','CS','AI','IT','CS',None]}

df = pd.DataFrame(data)
df.dropna(inplace=True)

print(df)

```

Viva

What is include in PHP? ? To include file code.

What is dropna()? ? Removes missing values.

What is a DataFrame? ? Table-like data structure.

Why use functions? ? Code reusability.

What is histogram? ? Shows frequency distribution.

?? Slip 12

Q1) PHP Chess Board using CSS

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<style>
```

```
table { border-collapse: collapse; }
```

```
td {
```

```
    width: 60px; height: 60px;
```

```
}
```

```
.white { background: #fff; }
```

```
.black { background: #000; }
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<table border="1">
```

```
<?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>

```

Q2A) Petal vs Width Graph

```

import pandas as pd
import matplotlib.pyplot as plt
df = pd.read_csv("iris.csv")
plt.scatter(df['petal_length'], df['petal_width'])
plt.xlabel('Petal Length')
plt.ylabel('Petal Width')
plt.title('Petal Length vs Width')
plt.show()

```

Q2B) Max-Min of Flattened Array

```

import numpy as np
arr = np.array([[1,2,3],[4,5,6]])
flat = arr.flatten()
print("Max:", flat.max())
print("Min:", flat.min())

```

Viva

What is flatten()? ? Converts array into 1D array.

What is scatter plot? ? Relation between two variables.

What is CSS? ? Cascading Style Sheets.

What loop is used in PHP? ? for, while, foreach.

What is border-collapse? ? Removes double borders.

?? Slip 13

Q1) Bootstrap 3 Column Layout

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Bootstrap Layout</title>
<link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css">
</head>
<body>
<div class="container text-center mt-3">
  <div class="row">
    <div class="col-md-4 bg-primary text-white p-3">Column 1</div>
    <div class="col-md-4 bg-warning p-3">Column 2</div>
    <div class="col-md-4 bg-success text-white p-3">Column 3</div>
  </div>
</div>
</body>
</html>
```

Q2A) Weighted Average

```
import numpy as np
arr = np.array([1,2,3,4])
weights = np.array([0.1,0.2,0.3,0.4])
print("Weighted Average:", np.average(arr, weights=weights))
```

Q2B) Statistical Details (advertising.csv)

```
import pandas as pd
df = pd.read_csv("advertising.csv")
print(df.describe())
```

Viva

What is weighted average? ? Mean based on weights.

What does describe() show? ? Summary stats.

What is Bootstrap grid system? ? Layout with rows/columns.

What is container class? ? Centers content.

What is np.average()? ? NumPy weighted mean.

?? Slip 14

Q1) String Operations Form

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<form method="post">
```

```
Enter String: <input type="text" name="str"><br>
```

```
<input type="submit" name="submit">
```

```
</form>
```

```
<?php
```

```
if(isset($_POST['submit'])){
```

```
    $s = $_POST['str'];
```

```
    echo "a) First 5 words: ".implode(' ', array_slice(explode(' ', $s),0,5))."<br>";
```

```
    echo "b) Title Case: ".ucwords(strtolower($s))."<br>";
```

```
    echo "c) Padded: '". $s."<br>";
```

```
    echo "d) Trimmed: '".ltrim($s)."<br>";
```

```
    echo "e) Reverse: ".strrev($s);  
}  
?>  
</body>  
</html>
```

Q2A) Random Array Charts

```
import numpy as np, matplotlib.pyplot as plt  
data = np.random.randint(1,100,50)  
plt.plot(data); plt.title('Line'); plt.show()  
plt.scatter(range(50),data); plt.title('Scatter'); plt.show()  
plt.hist(data); plt.title('Histogram'); plt.show()  
plt.boxplot(data); plt.title('Box'); plt.show()
```

Q2B) Subject Marks Pie Chart

```
subjects=['Python','DS','WT','AI','CN']  
marks=[85,78,92,80,88]  
plt.pie(marks, labels=subjects, autopct='%1.1f%%')  
plt.title('Student Marks')  
plt.show()
```

Viva

What is strrev()? ? Reverse string.

What is ucwords()? ? Converts to title case.

What is ltrim()? ? Removes left whitespaces.

What is pie chart used for? ? Percentage visualization.

What is histogram? ? Distribution graph.

?? Slip 15

Q1) PHP Student Marks


```

<!DOCTYPE html>

<html>

<body>

<form method="post">

Enter Marks (5 subjects, comma-separated):

<input type="text" name="marks"><br>

<input type="submit" name="submit">

</form>


<?php
if(isset($_POST['submit'])){
    $marks = explode(",", $_POST['marks']);
    $total = array_sum($marks);
    $percent = $total / 5;
    if($percent>=75) $grade="A";
    elseif($percent>=60) $grade="B";
    elseif($percent>=50) $grade="C";
    else $grade="Fail";

    echo "<table border='1'><tr><th>Total</th><th>Percentage</th><th>Grade</th></tr>";
    echo "<tr><td>$total</td><td>$percent%</td><td>$grade</td></tr></table>";
}

?>

</body>

</html>

```

Q2A) Subject Pie & Bar Chart

```

import matplotlib.pyplot as plt

subjects = ['Python','WT','DS','CN','AI']

marks = [88,90,84,70,75]

plt.pie(marks, labels=subjects, autopct='%1.1f%%')

plt.title('Subject Marks - Pie Chart')

```

```
plt.show()
```

```
plt.bar(subjects, marks)
```

```
plt.title('Subject Marks - Bar Chart')
```

```
plt.show()
```

Q2B) Students DataFrame

```
import pandas as pd
```

```
data = {'Name':['A','B','C','D'],
```

```
        'Age':[21,22,23,20],
```

```
        'Percentage':[78,85,65,72]}
```

```
df = pd.DataFrame(data)
```

```
print(df)
```

```
print("Average Age:", df['Age'].mean())
```

```
print("Average Percentage:", df['Percentage'].mean())
```

Viva

What is an array in PHP? ? Collection of values.

How to find sum of array? ? array_sum().

What is DataFrame mean function? ? Finds average.

What is a bar chart? ? Shows comparisons among categories.

What function creates a table in HTML? ? <table> tag.

Would you like me to continue with Slip 16–20 (including viva Q&A and full Python + PHP + HTML code)?

You said:

15 to 100

15 to 20

ChatGPT said:

Perfect ?? Here's your complete answer set for Slip 15 to Slip 20 of

T.Y.B.Sc. (Computer Science) Semester V – Web Technologies & Fundamentals of Data Science (CS-358)

with HTML / PHP / Python codes + Viva questions (5 marks each).

?? Slip 15

Q1) PHP Script – Student Marks Table

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<form method="post">
```

Enter Marks of 5 Subjects (comma-separated):

```
<input type="text" name="marks">
```

```
<input type="submit" name="submit">
```

```
</form>
```

```
<?php
```

```
if(isset($_POST['submit'])){
```

```
    $marks = explode(",", $_POST['marks']);
```

```
    $total = array_sum($marks);
```

```
    $percent = $total / count($marks);
```

```
    if($percent >= 75) $grade = "A";
```

```
    elseif($percent >= 60) $grade = "B";
```

```
    elseif($percent >= 50) $grade = "C";
```

```
    else $grade = "Fail";
```

```
    echo "<table border='1' cellpadding='5'>
```

```
    <tr><th>Total</th><th>Percentage</th><th>Grade</th></tr>
```

```
    <tr><td>$total</td><td>$percent%</td><td>$grade</td></tr></table>";
```

```
}
```

?>

</body>

</html>

Q2A) Pie & Bar Chart

```
import matplotlib.pyplot as plt
```

```
subjects = ['Python', 'WT', 'DS', 'CN', 'AI']
```

```
marks = [85, 90, 78, 82, 88]
```

```
plt.pie(marks, labels=subjects, autopct='%1.1f%%')
```

```
plt.title('Marks Distribution - Pie Chart')
```

```
plt.show()
```

```
plt.bar(subjects, marks)
```

```
plt.title('Marks Distribution - Bar Chart')
```

```
plt.show()
```

Q2B) DataFrame Average Calculation

```
import pandas as pd
```

```
data = {'Name':['A','B','C','D'], 'Age':[20,21,22,23], 'Percentage':[80,70,90,85]}
```

```
df = pd.DataFrame(data)
```

```
print(df)
```

```
print("Average Age:", df['Age'].mean())
```

```
print("Average Percentage:", df['Percentage'].mean())
```

Viva

What is array_sum()? ? Adds all elements in array.

What is a DataFrame? ? 2D table in pandas.

What is the use of pie chart? ? Show proportions.

What is the default Python plotting library? ? Matplotlib.

What is a variable in PHP? ? Storage container for data.

?? Slip 16

Q1) PHP – Associative Array Sorting

```
<?php
```

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

```
echo "<h3>Ascending by Value:</h3>";
```

```
asort($arr); print_r($arr);
```

```
echo "<h3>Ascending by Key:</h3>";
```

```
ksort($arr); print_r($arr);
```

```
echo "<h3>Descending by Value:</h3>";
```

```
arsort($arr); print_r($arr);
```

```
echo "<h3>Descending by Key:</h3>";
```

```
krsort($arr); print_r($arr);
```

```
?>
```

Q2A) Scatter Plot (Iris Dataset)

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

```
df = pd.read_csv("iris.csv")
```

```
plt.scatter(df['sepal_length'], df['sepal_width'], label='Sepal')
```

```
plt.scatter(df['petal_length'], df['petal_width'], label='Petal')
```

```
plt.legend()
```

```
plt.xlabel('Length')
```

```
plt.ylabel('Width')
```

```
plt.title('Iris Scatter Plot')
```

```
plt.show()
```

Q2B) DataFrame Creation

```
import pandas as pd
```

```
df = pd.DataFrame({
    'Name':['A','B','C','D','E'],
    'Age':[22,23,24,25,26],
    'Salary':[30000,40000,35000,45000,38000],
    'Department':['IT','HR','Sales','IT','Finance']
})
print(df)
Viva
```

What is associative array? ? Key-value pairs.

Difference between `asort()` and `ksort()`? ? Value vs Key sorting.

What is scatter plot used for? ? Comparing two features.

How to add a column in pandas? ? `df['new']=values`.

What is pandas? ? Data analysis library.

?? Slip 17

Q1) PHP – Associative Array Operations

```
<?php
```

```
$arr = array("A"=>"Apple","B"=>"Ball","C"=>"Cat");
```

```
echo "a) Reversed Key-Value: ";
```

```
print_r(array_flip($arr));
```

```
echo "<br>b) Random Order: ";
```

```
shuffle($arr); print_r($arr);
```

```
echo "<br>c) Convert to Variables:<br>";
```

```
extract($arr);
```

```
echo "\$A = $A, \$B = $B, \$C = $C";
```

```
echo "<br>d) Display Elements:<br>";
```

```
foreach($arr as $key=>$value)
```

```
    echo "$key => $value<br>";
```

```
?>
```

Q2A) Box Plot (Iris Dataset)

```
import seaborn as sns, pandas as pd, matplotlib.pyplot as plt
```

```
df = pd.read_csv("iris.csv")
```

```
sns.boxplot(x="species", y="sepal_length", data=df)
```

```
sns.boxplot(x="species", y="petal_length", data=df)
```

```
plt.show()
```

Q2B) Heights & Weights Dataset

```
df = pd.read_csv("heights_weights.csv")
```

```
print(df.head())
```

```
print(df.tail())
```

```
print(df.sample(10))
```

Viva

What is array_flip()? ? Swap keys with values.

What is extract()? ? Convert array keys to variables.

What is shuffle()? ? Randomize array order.

What is a box plot? ? Shows data distribution with quartiles.

What does .head() do? ? Displays first few rows.

?? Slip 18

Q1) PHP – String Operations

```
<!DOCTYPE html>
```

```

<html>

<body>

<form method="post">

Big String: <input type="text" name="big"><br>
Small String: <input type="text" name="small"><br>
Position: <input type="number" name="pos"><br>
Length: <input type="number" name="len"><br>
<input type="submit" name="submit">

</form>


<?php
if(isset($_POST['submit'])){
    $big = $_POST['big']; $small = $_POST['small'];
    $pos = $_POST['pos']; $len = $_POST['len'];

    echo "a) Deleted Part: ".substr_replace($big, "", $pos, $len)."<br>";
    echo "b) Inserted String: ".substr_replace($big, $small, $pos, 0)."<br>";
    echo "c) Replaced String: ".substr_replace($big, $small, $pos, $len);
}
?>

</body>

</html>

```

Q2) DataFrame Operations

```

import pandas as pd

df = pd.DataFrame({'Name':['A','B','C','D','E'],
                  'Age':[22,25,24,23,21],
                  'Percentage':[80,75,90,65,70]})

print(df.shape)

print(df.describe())

```

```

# Add duplicates and missing values

```



```
df2 = df.append(df.iloc[0:2])
```

```
df2.loc[5,'Remarks']=''
```

```
print(df2)
```

Viva

What is `substr_replace()`? ? Replaces part of a string.

What is DataFrame shape? ? (Rows, Columns).

What is `.append()` used for? ? Add new rows.

How to handle missing values? ? `fillna()` or `dropna()`.

What is `.describe()`? ? Statistical summary.

?? Slip 19

Q1) PHP – Array Operations

```
<?php
```

```
$arr = array(10,15,20,25,30,35,40);
```

```
echo "a) Split into chunks:<br>";
```

```
print_r(array_chunk($arr,3));
```

```
echo "<br>b) Sort by values (keep keys):<br>";
```

```
asort($arr); print_r($arr);
```

```
echo "<br>c) Filter even elements:<br>";
```

```
print_r(array_filter($arr, fn($x)=>$x%2==0));
```

```
?>
```

Q2A) Random Array Visualization

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

```
data = np.random.randint(1,100,50)
```

```
plt.plot(data); plt.show()
plt.scatter(range(50),data); plt.show()
plt.hist(data); plt.show()
plt.boxplot(data); plt.show()
Q2B) Add Outliers & Show Boxplot
data = np.append(data, [150,160]) # add outliers
plt.boxplot(data)
plt.title('Boxplot with Outliers')
plt.show()
```

Viva

What is array_chunk()? ? Splits array into parts.

What is an outlier? ? Unusual data value far from others.

What does array_filter() do? ? Filters elements by condition.

What is a boxplot? ? Visualizes spread and outliers.

What function sorts arrays? ? sort() / asort().

?? Slip 20

Q1) PHP – Temperature Array

```
<?php
$temp = array(30,32,28,34,35,36,33,31,29,38,37,32,30,33,35);
$avg = array_sum($temp)/count($temp);
rsort($temp);
$warmest = array_slice($temp,0,5);

echo "Average Temperature: $avg °C<br>";
echo "Five Warmest: "; print_r($warmest);
?>
```

Q2A) Bar Plot (Iris Data)

```
import pandas as pd, matplotlib.pyplot as plt
df = pd.read_csv("iris.csv")
species = df['species'].value_counts()
plt.bar(species.index, species.values)
plt.title("Iris Species Frequency - Bar Plot")
plt.show()
```

Q2B) Histogram (Iris Data)

```
plt.hist(df['sepal_length'])
plt.title('Sepal Length Distribution')
plt.xlabel('Sepal Length')
plt.ylabel('Frequency')
plt.show()
```

Viva

What is `rsort()`? ? Sorts array in descending order.

What is histogram used for? ? Shows data distribution.

What function calculates average in PHP? ? `array_sum()/count()`.

What is a bar chart? ? Compares categorical data.

What is `pandas value_counts()`? ? Counts unique values.

Would you like me to continue with Slip 21–25 next (including viva answers + PHP & Python code)?

You said:

21 to 25

ChatGPT said:

Excellent ? Here are the answers for Slip 21 to Slip 25 — with full PHP / HTML / Python programs + Viva Q&A (5 marks each) for your T.Y.B.Sc. (Computer Science) Semester V — Web Technologies & Fundamentals of Data Science (CS-358) (2019 Pattern).

?? Slip 21

Q1) PHP – Queue Operations

```
<?php
```

```
$queue = [];
```

```
function insert(&$q, $val){ array_push($q, $val); }
```

```
function deleteElement(&$q){ return array_shift($q); }
```

```
function display($q){ print_r($q); }
```

```
insert($queue, 10);
```

```
insert($queue, 20);
```

```
insert($queue, 30);
```

```
echo "Queue after insertion: ";
```

```
display($queue);
```

```
echo "<br>Deleted Element: ".deleteElement($queue);
```

```
echo "<br>Queue after deletion: ";
```

```
display($queue);
```

```
?>
```

Q2) Python – Data Normalization, Standardization, Rescaling

```
import pandas as pd
```

```
from sklearn.preprocessing import MinMaxScaler, StandardScaler, Normalizer
```

```
df = pd.read_csv("winequality-red.csv")
```

```
# a) Min-Max Scaling
```

```
minmax = MinMaxScaler()
```

```
df_scaled = minmax.fit_transform(df)
```

```
print("MinMax Scaled:\n", df_scaled[:5])
```

b) Standardization

```
std = StandardScaler()
```

```
df_std = std.fit_transform(df)
```

```
print("\nStandardized Data:\n", df_std[:5])
```

c) Normalization

```
norm = Normalizer()
```

```
df_norm = norm.fit_transform(df)
```

```
print("\nNormalized Data:\n", df_norm[:5])
```

Viva

What is a queue? ? FIFO (First In First Out) structure.

What is MinMaxScaler? ? Scales data between 0–1.

What is Standardization? ? Mean = 0, Std = 1.

What is Normalization? ? Rescales each observation to unit norm.

What function removes first element from queue? ? array_shift().

?? Slip 22

Q1) PHP – Stack Operations

```
<?php
```

```
$stack = [];
```

```
function push(&$s, $val){ array_push($s, $val); }
```

```
function popVal(&$s){ return array_pop($s); }
```

```
function display($s){ print_r($s); }
```

```
push($stack, 5);
push($stack, 10);
push($stack, 15);

echo "Stack after push: ";
display($stack);

echo "<br>Popped Element: ".popVal($stack);
echo "<br>Stack after pop: ";
display($stack);

?>
```

Q2) Python – Rescaling, Standardizing, Binarizing

```
import pandas as pd
from sklearn.preprocessing import MinMaxScaler, StandardScaler, Binarizer
```

```
df = pd.read_csv("winequality-red.csv")
```

```
# Rescaling
```

```
scaler = MinMaxScaler()
rescaled = scaler.fit_transform(df)
print("Rescaled Data:\n", rescaled[:5])
```

```
# Standardizing
```

```
std = StandardScaler()
standardized = std.fit_transform(df)
print("\nStandardized:\n", standardized[:5])
```

```
# Binarizing
```

```
binarizer = Binarizer(threshold=5)
binary = binarizer.fit_transform(df)
print("\nBinarized:\n", binary[:5])
```

Viva

What is a stack? ? LIFO (Last In First Out) structure.

What function adds element to stack? ? array_push().

What is binarization? ? Converts values > threshold to 1, else 0.

What library provides Binarizer? ? sklearn.preprocessing

What is the main difference between normalization and standardization? ? Scale range vs mean deviation.

?? Slip 23

Q1) PHP – File Append Program

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<form method="post">
```

```
File 1: <input type="text" name="f1"><br>
```

```
File 2: <input type="text" name="f2"><br>
```

```
<input type="submit" name="submit">
```

```
</form>
```

```
<?php
```

```
if(isset($_POST['submit'])){
```

```
    $f1 = $_POST['f1'];
```

```
    $f2 = $_POST['f2'];
```

```
    $data = file_get_contents($f1);
```

```
    file_put_contents($f2, $data, FILE_APPEND);
```

```
    echo "Content of $f1 appended to $f2 successfully!";
```

```
}
```

?>

</body>

</html>

Q2A) Bar Plot – Iris Species

```
import pandas as pd
```

```
import matplotlib.pyplot as plt
```

```
df = pd.read_csv("iris.csv")
```

```
species = df['species'].value_counts()
```

```
plt.bar(species.index, species.values, color=['r','g','b'])
```

```
plt.title('Iris Species Frequency - Bar Plot')
```

```
plt.show()
```

Q2B) Histogram – Iris Data

```
plt.hist(df['sepal_length'], bins=10, color='orange')
```

```
plt.title('Sepal Length Distribution')
```

```
plt.xlabel('Sepal Length')
```

```
plt.ylabel('Frequency')
```

```
plt.show()
```

Viva

What is `file_get_contents()`? ? Reads file content.

What is `file_put_contents()`? ? Writes to a file.

What is a bar chart used for? ? Comparing categories.

What is histogram? ? Frequency distribution visualization.

What is `FILE_APPEND` flag? ? Appends data instead of overwriting.

?? Slip 24

Q1) PHP – File Operations

```
<!DOCTYPE html>

<html>

<body>

<form method="post">

Enter File Name: <input type="text" name="fname">

<input type="submit" name="submit">

</form>


<?php
if(isset($_POST['submit'])){
    $file = $_POST['fname'];
    if(file_exists($file)){
        echo "a) File Type: ".filetype($file)."<br>";
        echo "b) Last Modified: ".date("F d Y H:i:s.", filemtime($file))."<br>";
        echo "c) File Size: ".filesize($file). " bytes<br>";
        unlink($file);
        echo "d) File Deleted!";
    } else {
        echo "File not found.";
    }
}
?>

</body>

</html>
```

Q2A) Random Array Charts

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

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


plt.plot(data); plt.title('Line Plot'); plt.show()

plt.scatter(range(50), data); plt.title('Scatter'); plt.show()
```

```
plt.hist(data); plt.title('Histogram'); plt.show()
plt.boxplot(data); plt.title('Box Plot'); plt.show()
Q2B) Pie Chart – Subject Marks
subjects=['Python','WT','DS','AI','CN']
marks=[88,76,90,82,85]
plt.pie(marks, labels=subjects, autopct='%1.1f%%')
plt.title('Subject Marks')
plt.show()
```

Viva

What is unlink()? ? Deletes a file.

What is filetype()? ? Returns file type.

What is boxplot? ? Shows distribution with outliers.

What is filemtime()? ? Returns file modification time.

What is the use of histogram? ? Displays frequency range.

?? Slip 25

Q1) PHP – Doctor–Hospital Relation

```
<?php
// Assume MySQL Database connection established
$con = mysqli_connect("localhost","root","","hospitaldb");

$hname = "City Hospital";
$sql = "SELECT d.dname, d.city FROM doctor d
        JOIN hospital h ON d.hosp_no = h.hosp_no
        WHERE h.hname='$hname'";
$result = mysqli_query($con, $sql);
```

```

echo "<table border='1'><tr><th>Doctor</th><th>City</th></tr>";
while($row = mysqli_fetch_assoc($result)){
    echo "<tr><td>{$row['dname']}</td><td>{$row['city']}</td></tr>";
}
echo "</table>";
?>

```

Q2A) Random Array Visualizations

```

import numpy as np, matplotlib.pyplot as plt

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

plt.plot(data); plt.title('Line'); plt.show()

plt.scatter(range(50),data); plt.title('Scatter'); plt.show()

plt.hist(data); plt.title('Histogram'); plt.show()

plt.boxplot(data); plt.title('Box Plot'); plt.show()

```

Q2B) Bar Chart – Subject Marks

```

subjects=['Python','WT','DS','AI','CN']
marks=[82,91,85,76,88]

plt.bar(subjects, marks, color='skyblue')

plt.title('Marks in Each Subject')

plt.xlabel('Subjects')

plt.ylabel('Marks')

plt.show()

```

Viva

What is JOIN in SQL? ? Combines data from multiple tables.

What is RDBMS? ? Relational Database Management System.

What is foreign key? ? Key that links two tables.

What is primary key? ? Unique identifier for records.

What does mysqli_fetch_assoc() return? ? Array of row data.

Would you like me to continue with Slip 26–30 (last part, with all viva Q&A and programs)?

You said:

25 to 30

ChatGPT said:

Excellent ? Here's the final set — Slip 25 to Slip 30 with full PHP / HTML / Python answers and Viva Q&A for

?? T.Y.B.Sc. (Computer Science) — Web Technologies & Fundamentals of Data Science (CS-358) (2019 Pattern).

?? Slip 25

Q1) PHP — Doctor–Hospital Relationship

<?php

// Example script to show doctor visiting hospital

\$hospital = "City Hospital";

\$doctors = [

["doc_no"=>1, "dname"=>"Dr. Patil", "hname"=>"City Hospital"],

["doc_no"=>2, "dname"=>"Dr. Rao", "hname"=>"Noble Hospital"],

["doc_no"=>3, "dname"=>"Dr. Mehta", "hname"=>"City Hospital"]

];

echo "<h3>Doctors Visiting \$hospital</h3>";

echo "<table border='1'><tr><th>Doctor No</th><th>Name</th></tr>";

foreach(\$doctors as \$d){

if(\$d["hname"]==\$hospital)

echo "<tr><td>{\$d['doc_no']}</td><td>{\$d['dname']}</td></tr>";

}

echo "</table>";

?>

Q2A) Random Array Graphs

import numpy as np, matplotlib.pyplot as plt

```
data = np.random.randint(1,100,50)
plt.plot(data); plt.title('Line Plot'); plt.show()
plt.scatter(range(50),data); plt.title('Scatter Plot'); plt.show()
plt.hist(data); plt.title('Histogram'); plt.show()
plt.boxplot(data); plt.title('Box Plot'); plt.show()
```

Q2B) Bar Chart (Subject Marks)

```
subjects=['Python','WT','DS','AI','CN']
marks=[80,75,92,78,85]

plt.bar(subjects, marks)
plt.xlabel('Subjects')
plt.ylabel('Marks')
plt.title('Student Marks Bar Chart')
plt.show()
```

Viva

What is a foreign key? ? A key linking two tables.

What is JOIN in SQL? ? Combines records from multiple tables.

What does foreach do in PHP? ? Iterates through array elements.

What is the purpose of boxplot? ? Shows data distribution and outliers.

What is a histogram? ? Shows frequency of data intervals.

?? Slip 26

Q1) PHP — Copy Content Between Files

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<form method="post">
```

```
File 1: <input type="text" name="f1"><br>
```

```
File 2: <input type="text" name="f2"><br>
<input type="submit" name="submit" value="Copy">
</form>
```

```
<?php
if(isset($_POST['submit'])){
    $f1 = $_POST['f1'];
    $f2 = $_POST['f2'];
    $data = file_get_contents($f1);
    file_put_contents($f2, $data);
    echo "Content copied from $f1 to $f2 successfully!";
}
?>
</body>
</html>
```

Q2) Encoding on Dataset

```
import pandas as pd
from sklearn.preprocessing import OneHotEncoder, LabelEncoder
```

```
data = pd.DataFrame({
    'Country': ['India', 'USA', 'UK', 'India'],
    'Purchased': ['Yes', 'No', 'Yes', 'No']
})
```

```
# OneHot Encoding
onehot = OneHotEncoder()
encoded = onehot.fit_transform(data[['Country']]).toarray()
print("OneHot Encoded:\n", encoded)
```

```
# Label Encoding
label = LabelEncoder()
```

```
data['Purchased'] = label.fit_transform(data['Purchased'])  
print("\nLabel Encoded:\n", data)
```

Viva

What is OneHotEncoder? ? Converts categorical values into binary columns.

What is LabelEncoder? ? Converts categories to numeric labels.

What is file handling? ? Reading/writing data from files.

Which function reads file? ? file_get_contents().

Which function writes file? ? file_put_contents().

?? Slip 27

Q1) PHP — Student File Data Program

<?php

```
$file = fopen("student.dat", "r");
```

```
echo "<table border='1'><tr><th>Roll
```

```
No</th><th>Name</th><th>OS</th><th>WT</th><th>DS</th><th>Python</th><th>Java</th><th>C
```

```
N</th><th>Percentage</th></tr>";
```

```
while(($data = fgetcsv($file)) !== FALSE){
```

```
    $total = $data[2]+$data[3]+$data[4]+$data[5]+$data[6]+$data[7];
```

```
    $percent = $total/6;
```

```
    echo "<tr>";
```

```
    foreach($data as $d) echo "<td>$d</td>";
```

```
    echo "<td>$percent%</td></tr>";
```

```
}
```

```
fclose($file);
```

```
echo "</table>";
```

```
?>
```

Q2) DataFrame Operations

```
import pandas as pd
df = pd.DataFrame({
    'Name':['A','B','C','D'],
    'Age':[21,22,20,23],
    'Percentage':[75,80,70,90]
})
print(df)
print("Shape:", df.shape)
print("Description:\n", df.describe())
```

```
# Add duplicate & missing
df2 = df.append(df.iloc[0:2])
df2.loc[5,'Remarks']="
print(df2)
```

Viva

What is fgetcsv()? ? Reads data from a CSV file.

What is fopen() used for? ? Opens a file for read/write.

What is .append()? ? Adds rows to DataFrame.

What is .describe()? ? Summarizes data statistics.

What is DataFrame shape? ? (rows, columns).

?? Slip 28

Q1) PHP — Event & Committee Update

```
<?php
```

```
$events = [
    ['eno'=>1,'title'=>'Tech Fest','committee'=>'Planning','status'=>'Pending'],
    ['eno'=>2,'title'=>'Cultural Fest','committee'=>'Music','status'=>'Pending']
```



```
];
```

```
$title = "Tech Fest";
```

```
foreach($events as &$e){  
    if($e['title'] == $title){  
        $e['status'] = "Working";  
    }  
}
```

```
echo "<h3>Updated Committees:</h3><table  
border='1'><tr><th>Event</th><th>Committee</th><th>Status</th></tr>";  
foreach($events as $e)  
    echo "<tr><td>{$e['title']}</td><td>{$e['committee']}</td><td>{$e['status']}</td></tr>";  
echo "</table>";  
?>
```

Q2) Encoding

```
import pandas as pd
```

```
from sklearn.preprocessing import OneHotEncoder, LabelEncoder
```

```
data = pd.DataFrame({  
    'Country':['India','UK','USA','India'],  
    'Purchased':['Yes','No','Yes','No']  
})
```

```
encoder = OneHotEncoder()  
encoded = encoder.fit_transform(data[['Country']]).toarray()  
print("OneHot Encoded:\n", encoded)
```

```
le = LabelEncoder()  
data['Purchased'] = le.fit_transform(data['Purchased'])
```

```
print("\nLabel Encoded:\n", data)
```

Viva

What is a many-to-many relationship? ? Both entities relate to multiple records of each other.

What is a status field? ? Attribute representing current state.

What is OneHotEncoder? ? Converts text labels into multiple binary columns.

What is LabelEncoder? ? Converts categorical labels to numbers.

What library provides these encoders? ? scikit-learn (sklearn).

?? Slip 29

Q1) PHP — Student–Competition Relationship

```
<?php
```

```
$competition = "Coding Contest";
```

```
$students = [
```

```
['stud_id'=>1,'name'=>'Ravi','competition'=>'Coding Contest','rank'=>1,'year'=>2024],
```

```
['stud_id'=>2,'name'=>'Sneha','competition'=>'Art','rank'=>2,'year'=>2024],
```

```
['stud_id'=>3,'name'=>'Rohit','competition'=>'Coding Contest','rank'=>1,'year'=>2024]
```

```
];
```

```
echo "<h3>Top Students in $competition</h3>";
```

```
echo "<table border='1'><tr><th>ID</th><th>Name</th><th>Rank</th><th>Year</th></tr>";
```

```
foreach($students as $s){
```

```
    if($s['competition']==$competition && $s['rank']==1)
```

```
        echo
```

```
"<tr><td>{$s['stud_id']}</td><td>{$s['name']}</td><td>{$s['rank']}</td><td>{$s['year']}</td></tr>";
```

```
}
```

```
echo "</table>";
```

```
?>
```

Q2) Visualization

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

```
data = np.random.randint(1,100,50)

plt.plot(data); plt.title('Line Chart'); plt.show()

plt.scatter(range(50), data); plt.title('Scatter Chart'); plt.show()

plt.hist(data); plt.title('Histogram'); plt.show()

plt.boxplot(data); plt.title('Box Plot'); plt.show()
```

```
subjects=['Python','WT','DS','CN','AI']

marks=[85,90,80,75,95]

plt.bar(subjects, marks)

plt.title('Student Marks Bar Chart')

plt.show()
```

Viva

What is many-to-many relation? ? Both entities relate to multiple records.

What is foreach()? ? Loop to iterate through arrays.

What is histogram used for? ? Frequency visualization.

What is boxplot? ? Shows spread and outliers.

What is plt.bar()? ? Draws bar chart.

?? Slip 30

Q1)

(Only reference link given in PDF — No unique question, but let's cover likely patterns from earlier slips.)

? Probable Q1 from source app: "Create a PHP or HTML task similar to other slips (File handling / Bootstrap layout)."

Here's a Bootstrap layout example answer:

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Web Tech Project</title>
<link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css">
</head>
<body>
<div class="container text-center mt-3">
  <h2 class="bg-primary text-white p-3">Student Information</h2>
  <div class="row">
    <div class="col-md-4 bg-light p-3">Name: Shubham</div>
    <div class="col-md-4 bg-warning p-3">Course: TYBSc (CS)</div>
    <div class="col-md-4 bg-success text-white p-3">College: SPPU</div>
  </div>
</div>
</body>
</html>
```

Q2) Dataset Visualization

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

```
df = pd.read_csv("iris.csv")
```

```
# Bar Plot
```

```
species = df['species'].value_counts()
```

```
plt.bar(species.index, species.values)
```

```
plt.title('Iris Species Frequency')
```

```
plt.show()
```

```
# Histogram
```

```
plt.hist(df['sepal_length'])  
plt.title('Sepal Length Histogram')  
plt.show()
```

Viva

What is Bootstrap used for? ? Responsive webpage design.

What tag makes a row in Bootstrap? ? <div class="row">.

What is plt.hist()? ? Plots histogram.

What is value_counts()? ? Counts unique items.

What does csv stand for? ? Comma Separated Values.

? All 30 Slips (1–30) now covered

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ChatGPT said:

? Your full practical solution set (Slips 1–30) has been compiled into a PDF.

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