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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » **Privacy And Security In Online Social Media**
(course)



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Course
outline

How does an
NPTEL online
course work?
()

Prerequisite
Assignment ()

Welcome to
PSOSM class
()

Introduction
to Social
Media API ()

Misinformation
and Privacy

Week 4: Assignment 4

The due date for submitting this assignment has passed.

Due on 2023-08-23, 23:59 IST.

Assignment submitted on 2023-08-23, 23:08 IST

1) What is the critical challenge that Latanya Sweeney's research on k-anonymity addresses? **1 point**

- ☐ make datasets larger for analysis
- ☐ eliminate data from datasets
- ☒ anonymise data without losing utility
- ☐ ignore research utility for better privacy

Yes, the answer is correct.

Score: 1

Accepted Answers:

anonymise data without losing utility

Suppose you're working on a project that involves analysing sales data for a chain of stores. You are provided with a list of daily sales figures for a particular product over some time. The task is to calculate various statistics such as the total sales, average sales, and maximum sales for that product. Answer the following questions [2-4]:

2) Which data structure can significantly enhance the efficiency and simplicity of your calculations? **1 point**

()

Privacy and Pictures on Online Social Media ()

● Week-4.1
Privacy and Pictures on Online Social Media (unit? unit=37&lesson=38)

● Tutorial 4- Python essentials-Part 1 numpy (unit? unit=37&lesson=39)

● Tutorial 4- Python essentials-Part 2 pandas,matplotlib (unit? unit=37&lesson=40)

● Quiz: Week 4: Assignment 4 (assessment? name=125)

● Week 4 Feedback Form : Privacy and Security in Online Social Media (unit? unit=37&lesson=41)

● Week 4: Solution (unit? unit=37&lesson=124)

Policing and Social Media ()

- ☐ Python numpy list
- ☒ Python numpy array
- ☐ Python variables
- ☐ None of these

Yes, the answer is correct.

Score: 1

Accepted Answers:

Python numpy array

3) Fill in the correct function calculate_total_sales(sales_list) which calculates the total sales from a list of daily sales figures using NumPy in the below code **1 point**

```
import numpy as np
```

```
def calculate_total_sales(sales_list):
```

```
<<<write your code here>>>>
```

```
    return total_sales
```

```
daily_sales = [1200, 1500, 1300, 1400, 1800, 1600]
```

```
total_sales = calculate_total_sales(daily_sales)
```

```
print("Total sales:", total_sales)
```

- ☒ sales_array = np.array(sales_list)
total_sales = np.sum(sales_array)
- ☐ sales_array = np.list(sales_list)
total_sales = np.sum(sales_array)
- ☐ sales_array = np.array(sales_list)
total_sales = np.sum(np.concatenate(sales_array,sales_list))
- ☐ None of the above

Yes, the answer is correct.

Score: 1

Accepted Answers:

sales_array = np.array(sales_list)

total_sales = np.sum(sales_array)

4) Fill in the correct function calculate_maximum_sales(sales_list) which calculates the maximum sales from a list of daily sales figures using NumPy in the below code **1 point**

```
import numpy as np
```

```
def calculate_maximum_sales(sales_list):
```

```
<<<write your code here>>>>
```

```
    return max_sales
```

```
daily_sales = [1200, 1500, 1300, 1400, 1800, 1600]
```

E-crime and social media ()

Social media and ecrime ()

Identity resolution and social media ()

Research papers: Location based Privacy ()

Research Papers Part - II ()

Week 11: Summary ()

Lecture materials/Notes ()

Text Transcripts ()

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Problem Solving Session - July 2023 ()

```
maximum_sales = calculate_maximum_sales(daily_sales)
print("Maximum sales:", maximum_sales)
```

- ☒ sales_array = np.array(sales_list)
max_sales = np.max(sales_array)
- ☐ sales_array = np.list(sales_list)
max_sales = np.max(sales_array)
- ☐ sales_array = np.array(sales_list)
max_sales = np.max(np.concatenate(sales_array,sales_list))
- ☐ None of the above

Yes, the answer is correct.

Score: 1

Accepted Answers:

```
sales_array = np.array(sales_list)
max_sales = np.max(sales_array)
```

Imagine you have a NumPy array representing your monthly expenses for the past year. Each array element corresponds to the total expenses (in dollars) for a specific month. The task is to analyze and extract specific information.

```
import numpy as np
```

```
expenses_array = np.array([1200, 1500, 1300, 1400, 1800, 1600, 1400, 1250, 1350, 1500, 1700, 1900])
```

Answer the following questions from [5-7]:

5) How would you extract expenses for the second half of the year (July to December)? **1 point**

- ☒ second_half_expenses = expenses_array[6:]
- ☐ second_half_expenses = expenses_array[5:]
- ☐ second_half_expenses = expenses_array[:12]
- ☐ second_half_expenses = expenses_array[7:]

Yes, the answer is correct.

Score: 1

Accepted Answers:

```
second_half_expenses = expenses_array[6:]
```

6) Identify the months where expenses exceeded \$1600.

1 point

- ☐ high_expense_months = np.where(expenses_array < 1600)[0]
- ☒ high_expense_months = np.where(expenses_array > 1600)[0]
- ☐ high_expense_months = np.where(expenses_array > 1600))
- ☐ high_expense_months = np.where(expenses_array > 1600)[0] + 1

No, the answer is incorrect.

Score: 0

Accepted Answers:

high_expense_months = np.where(expenses_array > 1600)[0] + 1

7) Calculate the average expenses for the first quarter of year.

1 point

- ☐ *first_quarter_average = np.mean(expenses_array[:4])*
- ☐ *first_quarter_average = np.mean(expenses_array[:2])*
- ☒ *first_quarter_average = np.mean(expenses_array[:3])*
- ☐ *first_quarter_average = np.mean(expenses_array[:6])*

Yes, the answer is correct.

Score: 1

Accepted Answers:

first_quarter_average = np.mean(expenses_array[:3])

8) Choose the correct option for “result”

1 point

import pandas as pd

data = {

'Product': ['A', 'B', 'A', 'B', 'C', 'A', 'C', 'B', 'C', 'A'],

'Category': ['Electronics', 'Clothing', 'Electronics', 'Clothing', 'Home', 'Electronics', 'Home',

'Clothing', 'Home',

'Electronics'],

'Price': [500, 40, 600, 35, 100, 550, 80, 30, 90, 480]

}

sales_df = pd.DataFrame(data)

grouped = sales_df.groupby('Category')

result = grouped.agg({

'Price': ['sum', 'mean']

}).reset_index()

Rename the columns

result.columns = ['Category', 'Total Revenue', 'Average Price']

print(result)

a.



	Category	Total Revenue	Average Price
0	clothing	105	35.00
1	electronics	1630	543.33
2	home	270	90.00

b.

☐

	Category	Total Revenue	Average Price
0	clothing	1630	35.00
1	electronics	105	543.33
2	home	270	90.00

c.

☐

	Category	Total Revenue	Average Price
0	clothing	105	35.00
1	electronics	270	90.00
2	home	1630	543.33

☒ None of the above

Yes, the answer is correct.

Score: 1

Accepted Answers:

None of the above

9) What is the primary goal of k-anonymity in data privacy?

1 point

- ☐ Ensure that every attribute in the dataset is unique.
- ☐ Prevent unauthorised access to the dataset.
- ☐ Minimize the amount of data collected.
- ☒ Making it difficult to link specific individuals to their records.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Making it difficult to link specific individuals to their records.

10) What will be the output of the below code:

1 point

```
import numpy as np
import matplotlib.pyplot as plt
time = np.linspace(0, 2 * np.pi, 1000)
amplitude = 1.0
frequency = 1.0
sine_wave = amplitude * np.sin(frequency * time)
plt.figure(figsize=(8, 6))
plt.plot(time, sine_wave, label='Sine Wave', color='blue')
plt.title('Sine Wave')
plt.xlabel('Time')
plt.ylabel('Amplitude')
plt.legend()
plt.grid(True)
plt.show()
```

- ☒ A plot consisting of sine wave
- ☐ A plot consisting of cosine wave
- ☐ Logical error in code
- ☐ None of the above

Yes, the answer is correct.

Score: 1

Accepted Answers:

A plot consisting of sine wave