

Arrays 2D

1: Row-wise Sum of a 2D Array

You are given a 2D array. Write a function to calculate the sum of elements in each row and return a list containing these sums.

Input: A 2D array (matrix)

Output: A list of row-wise sums

Sample Test Case:

Input:

```
[[1, 2, 3],  
 [4, 5, 6],  
 [7, 8, 9]]
```

Output:

```
[6, 15, 24]
```

2: Column-wise Sum of a 2D Array

Given a 2D array, write a function to compute the sum of elements in each column and return a list containing these sums.

Input: A 2D array (matrix)

Output: A list of column-wise sums

Sample Test Case:

Input:

```
[[1, 2, 3],  
 [4, 5, 6],  
 [7, 8, 9]]
```

Output:

```
[12, 15, 18]
```

3: Identity Matrix

Create a function to generate an identity matrix of size $n \times n$.

Input: An integer 'n' (size of the matrix)

Output: Identity matrix of size $n \times n$

Sample Test Case:

Input:

```
n = 3
```

Output:

```
[[1, 0, 0],  
 [0, 1, 0],  
 [0, 0, 1]]
```

4: Unique Numbers in a 2D Array

Write a function to print all unique numbers present in a given 2D array.

Input: A 2D array (matrix)

Output: Set of unique numbers present in the matrix

Sample Test Case:

Input:

```
[[1, 2, 2],  
 [3, 4, 4],  
 [5, 6, 6]]
```

Output:

```
{1, 2, 3, 4, 5, 6}
```