Diagonal Difference

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Given a square matrix, calculate the absolute difference between the sums of its diagonals.

For example, the square matrix arr is shown below:

```
1 2 3
4 5 6
9 8 9
```

- The left-to-right diagonal = $1 + 5 + 9 = 15$.
- The right-to-left diagonal = $3 + 5 + 9 = 17$.

Their absolute difference is $|15 - 17| = 2$.

Function description

Complete the *diagonalDifference* function with the following parameter:

- $int\ arr[n][m]$: a 2-D array of integers

Return

- int: the absolute difference in sums along the diagonals

Input Format

The first line contains a single integer, n, the number of rows and columns in the square matrix arr.

Each of the next n lines describes a row, $arr[i]$, and consists of n space-separated integers $arr[i][j]$.

Constraints

- $-100 \leq arr[i][j] \leq 100$

Sample Input

```
STDIN       Function
-----       --------
3           arr[][] sizes n = 3, m = 3
11 2 4      arr = [[11, 2, 4], [4, 5, 6], [10, 8, -12]]
4 5 6
10 8 -12
```

Sample Output

```
15
```

Explanation

The primary diagonal is:

```
11
  5
    -12
```

Sum across the primary diagonal: $11 + 5 - 12 = 4$.

The secondary diagonal is:

```
    4
  5
10
```

Sum across the secondary diagonal: $4 + 5 + 10 = 19$

Difference: $|4 - 19| = 15$

Note: |x| is the absolute value of x.

Change Theme Language Python 3

```python
#!/bin/python3

import math
import os
import random
import re
import sys

#
# Complete the 'diagonalDifference' function below.
#
# The function is expected to return an INTEGER.
# The function accepts 2D_INTEGER_ARRAY arr as parameter.
#

def diagonalDifference(arr):
    # Write your code here
    n = len(arr)
    primary_sum = 0
    secondary_sum = 0

    for i in range(n):
        primary_sum += arr[i][i]
        secondary_sum += arr[i][n - 1 - i]

    return abs(primary_sum - secondary_sum)
if __name__ == '__main__':
    fptr = open(os.environ['OUTPUT_PATH'], 'w')

    n = int(input().strip())

    arr = []

    for _ in range(n):
```

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Next Challenge

- Test case 0
- Test case 1
- Test case 2
- Test case 3
- Test case 4
- Test case 5
- Test case 6

Compiler Message

```
Success
```

Input (stdin) Download

```
3
11 2 4
4 5 6
10 8 -12
```

Expected Output Download

```
15
```