

Curso: Ciencia de Datos en Python  
Catedrático: Ing. Luis Leal  
Estudiante: Dany Rafael Díaz Lux (21000864)

### Tarea preparatoria para Parcial

Usuario de hackerrank: [https://www.hackerrank.com/dany\\_diaz\\_22](https://www.hackerrank.com/dany_diaz_22)

### Ejercicios:

1. <https://www.hackerrank.com/challenges/py-if-else/problem>

The screenshot shows the HackerRank interface for the 'Python If-Else' challenge. The top navigation bar includes links for PRACTICE, CERTIFICATION, COMPETE, JOBS, and LEADERBOARD. The user's profile is 'dany\_diaz\_22'. The challenge title is 'Python If-Else' with a star icon. The user's rank is 968873 and they have 10/35 points. The submission table shows one submission with a score of 10.0, accepted. The sidebar on the right has links for 'View tutorial', 'View discussions', 'View editorial', and 'View top submissions'.

RESULT	SCORE	LANGUAGE	TIME
Accepted	10.0	Python 2	a few seconds ago

### Solución

```
#!/bin/python

import math
import os
import random
import re
import sys

if __name__ == '__main__':
    n = int(raw_input().strip())

    if n % 2 == 1:
        print('Weird')
    else:
        if 2 <= n <= 5:
            print('Not Weird')
        elif 6 <= n <= 20:
            print('Weird')
        elif n > 20:
            print('Not Weird')
```

2. <https://www.hackerrank.com/challenges/python-arithmetic-operators/problem>

HackerRank PRACTICE CERTIFICATION COMPETE JOBS LEADERBOARD

Practice > Python > Introduction > Arithmetic Operators > Submissions

Arithmetic Operators ☆

15 more points to get your first star!  
Rank: 898671 | Points: 20/35

Problem Submissions Leaderboard Discussions Editorial Tutorial

RESULT	SCORE	LANGUAGE	TIME
Accepted	10.0	Python 3	a few seconds ago

View Results

NEED HELP?

- View tutorial
- View discussions
- View editorial
- View top submissions

Solución:

```
if __name__ == '__main__':  
    a = int(input())  
    b = int(input())  
  
    print(a+b)  
    print(a-b)  
    print(a*b)
```

3. <https://www.hackerrank.com/challenges/python-division/problem>

HackerRank PRACTICE CERTIFICATION COMPETE JOBS LEADERBOARD

Practice > Python > Introduction > Python: Division > Submissions

Python: Division ☆

5 more points to get your first star!  
Rank: 858443 | Points: 30/35

Problem Submissions Leaderboard Discussions Editorial Tutorial

RESULT	SCORE	LANGUAGE	TIME
Accepted	10.0	Python 3	a few seconds ago

View Results

NEED HELP?

- View tutorial
- View discussions
- View editorial
- View top submissions

Solución:

```
if __name__ == '__main__':  
    a = int(input())  
    b = int(input())  
  
    print(a//b)  
    print(a/b)
```

4. <https://www.hackerrank.com/challenges/python-loops/problem>

**HackerRank** PRACTICE CERTIFICATION COMPETE JOBS LEADERBOARD

Practice > Python > Introduction > Loops > Submissions

30 more points to get your next star!  
Rank: 799968 | Points: 40/70

Loops ☆

Problem Submissions Leaderboard Discussions Editorial Tutorial

RESULT	SCORE	LANGUAGE	TIME	
Accepted	10.0	Python 3	a few seconds ago	<a href="#">View Results</a>

< 1 >

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Solución:

```
if __name__ == '__main__':  
    n = int(input())  
  
    i = 0  
    while i < n:  
        print(i**2)  
        i += 1
```

5. <https://www.hackerrank.com/challenges/write-a-function/problem>

**HackerRank** PRACTICE CERTIFICATION COMPETE JOBS LEADERBOARD

Practice > Python > Introduction > Write a function > Submissions

20 more points to get your next star!  
Rank: 741430 | Points: 50/70

Write a function ☆

Problem Submissions Leaderboard Discussions Editorial

RESULT	SCORE	LANGUAGE	TIME	
Accepted	10.0	Python 3	a few seconds ago	<a href="#">View Results</a>

< 1 >

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Solución:

```
def is_leap(year):  
    leap = False  
  
    if year % 400 == 0:  
        leap = True  
    elif year % 4 == 0 and year % 100 != 0:  
        leap = True  
  
    return leap
```

6. <https://www.hackerrank.com/challenges/find-second-maximum-number-in-a-list/problem>

HackerRank PRACTICE CERTIFICATION COMPETE JOBS LEADERBOARD

Practice > Python > Basic Data Types > Find the Runner-Up Score! > Submissions

**Find the Runner-Up Score!** ☆

10 more points to get your next start!  
Rank: 693501 | Points: 60/70

Problem Submissions Leaderboard Discussions Editorial

RESULT	SCORE	LANGUAGE	TIME	
Accepted	10.0	Python 3	a few seconds ago	<a href="#">View Results</a>

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Solución:

```
if __name__ == '__main__':  
    n = int(input())  
    arr = map(int, input().split())  
  
    maxScore = -101  
    runnerUp = -101  
  
    for score in arr:  
        if score > maxScore:  
            runnerUp = maxScore  
            maxScore = score  
        elif score > runnerUp and score != maxScore:  
            runnerUp = score  
    print(runnerUp)
```

7. <https://www.hackerrank.com/challenges/finding-the-percentage/problem>

HackerRank PRACTICE CERTIFICATION COMPETE JOBS LEADERBOARD

Practice > Python > Basic Data Types > Finding the percentage > Submissions

**Finding the percentage** ☆

40 more points to get your next start!  
Rank: 660806 | Points: 70/110

Problem Submissions Leaderboard Discussions Editorial Tutorial

RESULT	SCORE	LANGUAGE	TIME	
Accepted	10.0	Python 3	a few seconds ago	<a href="#">View Results</a>

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[View tutorial](#)  
[View discussions](#)  
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Solución:

```
if __name__ == '__main__':  
    n = int(input())  
    student_marks = {}  
    for _ in range(n):  
        name, *line = input().split()  
        scores = list(map(float, line))  
        student_marks[name] = scores  
    query_name = input()  
  
    total = 0.0  
    for mark in student_marks[query_name]:  
        total += mark  
    total /= 3  
  
    print('{:0.2f}'.format(total))
```

8. <https://www.hackerrank.com/challenges/python-lists/problem>

**HackerRank** **PRACTICE** CERTIFICATION COMPETE JOBS LEADERBOARD

Practice > Python > Basic Data Types > Lists > Submissions

**Lists** ☆

30 more points to get your next star!  
Rank: 537941 | Points: 80/110

Python

Problem Submissions Leaderboard Discussions Editorial Tutorial

RESULT	SCORE	LANGUAGE	TIME	
Accepted	10.0	Python 3	a few seconds ago	<a href="#">View Results</a>

< 1 >

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Solución:

```
if __name__ == '__main__':
    N = int(input())

    commands = []
    mainList = []
    for _ in range(N):
        commands.append(input())

    for comm in commands:
        commList = comm.split()
        justCommand = commList[0].lower()

        if justCommand == 'insert':
            mainList.insert(int(commList[1]),int(commList[2]))
        elif justCommand == 'print':
            print(mainList)
        elif justCommand == 'remove':
            mainList.remove(int(commList[1]))
        elif justCommand == 'append':
            mainList.append(int(commList[1]))
        elif justCommand == 'sort':
            mainList.sort()
        elif justCommand == 'pop':
            mainList.pop()
        elif justCommand == 'reverse':
            mainList.reverse()
```

9. <https://www.hackerrank.com/challenges/python-tuples/problem>

**HackerRank** PRACTICE CERTIFICATION COMPETE JOBS LEADERBOARD

Practice > Python > Basic Data Types > Tuples > Submissions

**Tuples** ☆

20 more points to get your next star!  
Rank: 482700 | Points: 90/110

Problem Submissions Leaderboard Discussions Editorial Tutorial

RESULT	SCORE	LANGUAGE	TIME
Accepted	10.0	Python 3	a few seconds ago

< 1 >

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[View editorial](#)  
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Solución:

```
if __name__ == '__main__':
    n = int(input())
    integer_list = map(int, input().split())
    print(hash(tuple(integer_list)))
```

10. <https://www.hackerrank.com/challenges/defaultdict-tutorial/problem>

Practice > Python > Collections > DefaultDict Tutorial > Submissions

**DefaultDict Tutorial** ☆

110 more points to get your next star!  
Rank: 401038 | Points: 110/220

Problem Submissions Leaderboard Discussions Editorial

RESULT	SCORE	LANGUAGE	TIME
Accepted	20.0	Python 3	a few seconds ago
Accepted	20.0	Python 3	a few seconds ago
Accepted	20.0	Python 3	2 minutes ago

NEED HELP?  
[View discussions](#)  
[View editorial](#)  
[View top submissions](#)

Solución:

```
# Enter your code here. Read input from STDIN. Print output to STDOUT
if __name__ == '__main__':
    n,m = map(int,input().split())
    def defaultValue():
        return ['-1']

    from collections import defaultdict
    d = defaultdict(defaultValue)

    for i in range(n):
        word = input()
        if d[word][0] == '-1':
            d[word][0] = str(i+1)
        else:
            d[word].append(str(i+1))

    for i in range(m):
        word = input()
        print(' '.join(d[word]))
```

11. <https://www.hackerrank.com/challenges/collections-counter/problem>

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Practice > Python > Collections > collections.Counter() > Submissions

**collections.Counter()** ☆

100 more points to get your next star!  
Rank: 357272 | Points: 120/220

Problem

Submissions

Leaderboard

Discussions

Editorial

RESULT	SCORE	LANGUAGE	TIME	
Accepted	10.0	Python 3	a few seconds ago	<a href="#">View Results</a>

< 1 >

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[View editorial](#)  
[View top submissions](#)

Solución:

```
# Enter your code here. Read input from STDIN. Print output to STDOUT
if __name__ == '__main__':
    n = int(input())
    shoeSizes = map(int, input().split())
    clientNumbers = int(input())

    from collections import Counter
    sizeCounter = Counter(shoeSizes)
    total = 0

    for _ in range(clientNumbers):
        size, price = map(int, input().split())
        if size in sizeCounter.keys() and sizeCounter[size] > 0:
            sizeCounter[size] -= 1
            total += price

    print(total)
```

12. [https://www.hackerrank.com/challenges/minimum-swaps-2/problem?h\\_l=interview&playlist\\_slugs%5B%5D=interview-preparation-kit&playlist\\_slugs%5B%5D=arrays](https://www.hackerrank.com/challenges/minimum-swaps-2/problem?h_l=interview&playlist_slugs%5B%5D=interview-preparation-kit&playlist_slugs%5B%5D=arrays)

**HackerRank** PRACTICE CERTIFICATION COMPETE JOBS LEADERBOARD  dany\_diaz\_22

Practice > Interview Preparation Kit > Arrays > Minimum Swaps 2 > Submissions

## Minimum Swaps 2 ☆

Problem Submissions Leaderboard Discussions Editorial

RESULT	SCORE	LANGUAGE	TIME	
Accepted	40.0	Python 3	a few seconds ago	<a href="#">View Results</a>
Terminated due to...	16.0	Python 3	22 minutes ago	<a href="#">View Results</a>
Terminated due to...	16.0	Python 3	44 minutes ago	<a href="#">View Results</a>

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[View top submissions](#)

Solución:

```
#!/bin/python3

import math
import os
import random
import re
import sys

# Complete the minimumSwaps function below.
def minimumSwaps(arr):
    tempArray = arr.copy()
    arrSorted = arr.copy()
    arrSorted.sort()
    arrIndexes = [len(tempArray)] * (arrSorted[-1] + 1)
    for i, val in enumerate(tempArray, start=0):
        arrIndexes[val] = i

    swapsNeeded = 0
    for currentPos in range(len(tempArray)-1):
        minPos = arrIndexes[arrSorted[currentPos]]
        if tempArray[minPos] < tempArray[currentPos]:
            arrIndexes[tempArray[minPos]], arrIndexes[tempArray[currentPos]] =
arrIndexes[tempArray[currentPos]], arrIndexes[tempArray[minPos]]
            tempArray[minPos], tempArray[currentPos] = tempArray[currentPos],
tempArray[minPos]
            swapsNeeded += 1

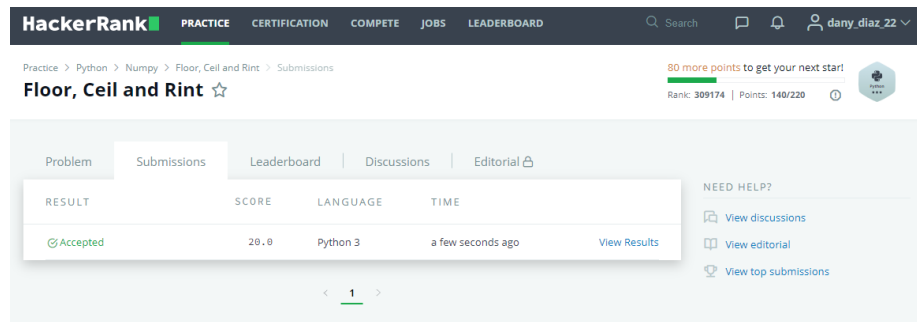
    return swapsNeeded

if __name__ == '__main__':
    fptr = open(os.environ['OUTPUT_PATH'], 'w')

    n = int(input())
    arr = list(map(int, input().rstrip().split()))
    res = minimumSwaps(arr)
    fptr.write(str(res) + '\n')
    fptr.close()
```



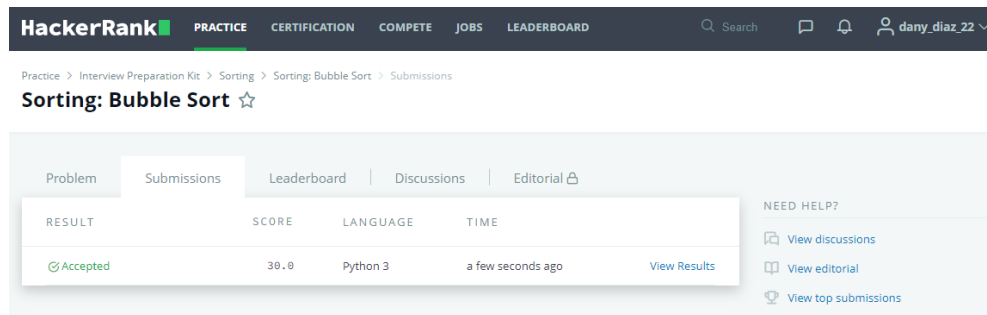
13. <https://www.hackerrank.com/challenges/floor-ceil-and-rint/problem>



Solución:

```
import numpy
numpy.set_printoptions(legacy='1.13')
float_map = map(float, input().split())
float_array = numpy.array(list(float_map))
print(numpy.floor(float_array))
print(numpy.ceil(float_array))
print(numpy rint(float_array))
```

14. [https://www.hackerrank.com/challenges/ctci-bubble-sort/problem?h\\_l=interview&playlist\\_slugs%5B%5D=interview-preparation-kit&playlist\\_slugs%5B%5D=sorting](https://www.hackerrank.com/challenges/ctci-bubble-sort/problem?h_l=interview&playlist_slugs%5B%5D=interview-preparation-kit&playlist_slugs%5B%5D=sorting)



Solución:

```
#!/bin/python3
import math
import os
import random
import re
import sys

# Complete the countSwaps function below.
def countSwaps(a):
    result = 0
    for i in range(len(a)):
        for j in range(len(a) - 1):
            if a[j] > a[j+1]:
                a[j], a[j+1] = a[j+1], a[j]
                result += 1

    print('Array is sorted in', result, 'swaps.')
    print('First Element:', a[0])
    print('Last Element:', a[-1])

if __name__ == '__main__':
    n = int(input())
    a = list(map(int, input().rstrip().split()))
    countSwaps(a)
```

15. <https://www.hackerrank.com/challenges/np-arrays/problem>

**HackerRank** PRACTICE CERTIFICATION COMPETE JOBS LEADERBOARD

Practice > Python > Numpy > Arrays > Submissions

60 more points to get your next star!  
Rank: 277160 | Points: 160/220

## Arrays ☆

Problem Submissions Leaderboard Discussions Editorial

RESULT	SCORE	LANGUAGE	TIME	
Accepted	20.0	Python 3	a few seconds ago	<a href="#">View Results</a>

< 1 >

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[View top submissions](#)

Solución:

```
def arrays(arr):  
    # complete this function  
    # use numpy.array  
    arr.reverse()  
    return numpy.array(arr, float)
```

16. <https://www.hackerrank.com/challenges/np-zeros-and-ones/problem>

Practice > Python > Numpy > Zeros and Ones > Submissions

40 more points to get your next star!  
Rank: 251638 | Points: 180/220

## Zeros and Ones ☆

Problem Submissions Leaderboard Discussions Editorial

RESULT	SCORE	LANGUAGE	TIME	
Accepted	20.0	Python 3	a few seconds ago	<a href="#">View Results</a>
Runtime Error	6.67	Python 3	2 minutes ago	<a href="#">View Results</a>

NEED HELP?  
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Solución:

```
import numpy  
  
numberList = list(map(int, input().split()))  
  
print(numpy.zeros(tuple(numberList), dtype = numpy.int))  
print(numpy.ones(tuple(numberList), dtype = numpy.int))
```