HIGH PEAK

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COLLEGE:VIT,VELLORE

Q) Let's say the HR team of a company has goodies set of size N each with a different price tag for each goodie. Now the HR team has to distribute the goodies among the M employees in the company such that one employee receives one goodie. Find out the goodies the HR team can distribute so that the difference between the low price goodie and the high price goodie selected is minimum.

Input:

Goodies and Prices:

Fitbit Plus: 7980

IPods: 22349

MI Band: 999

Cult Pass: 2799

Macbook Pro: 229900

Digital Camera: 11101

Alexa: 9999

Sandwich Toaster: 2195

Microwave Oven: 9800

Scale: 4999

Example Output

Number of the employees: 4

Here the goodies that are selected for distribution are:

Fitbit Plus: 7980

Microwave Oven: 9800

Alexa: 9999

Digital Camera: 11101

And the difference between the chosen goodie with highest price and the lowest price is 3121

Number of employees: 6

Here the goodies that are selected for distribution are:

Sandwich Toaster: 2195

Cult Pass: 2799

Scale: 4999

Fitbit Plus: 7980

Microwave Oven: 9800

Alexa: 9999

And the difference between the chosen goodie with highest price and the lowest price is 7804

Number of employees: 2

Here the goodies that are selected for distribution are:

Microwave Oven: 9800

Alexa: 9999

And the difference between the chosen goodie with highest price and the lowest price is 199

The input has to be read from a file. The input file contains the all the goodies and their prices as shown in the example input file sample_input.txt in the current folder .

The output has to be written to a file as shown in the example output file sample_output.txt in the current folder.

Usage of any libraries provided by the language or the framework used is restricted, except for the Mathematics and the I/O libraries.

PYTHON CODE:

```
n = int(input())
goodies = {}
for i in range(n):
  a = input()
  b = int(input())
  goodies[b]=a
goodies = dict(sorted(goodies.items(), key=lambda item: item[1]))
price=list(goodies.keys())
no = int(input())
price = sorted(price)
c = {}
for i in range(len(price)-no+1):
  d = price[i+no-1]-price[i]
  c[d]  = [i,i+no]
c = dict(sorted(c.items(), key=lambda item: item[0]))
i,j = list(c.values())[0]
result_price=[]
for i in range(i,j):
  result_price.append(price[i])
for i in result_price:
  print(goodies[i],i)
print("The difference between the chosen goodie with highest price and the lowest price is ",list(c.keys())[0])
```

PYTH 3.6 (Python 3.6)

```
n = int(input())
goodies = {}
for i in range(n):
  a = input()
  b = int(input())
  goodies[b]=a
goodies = dict(sorted(goodies.items(), key=lambda item: item[1]))
price=list(goodies.keys())
no = int(input())
price = sorted(price)
c = {}
for i in range(len(price)-no+1):
  d = price[i+no-1]-price[i]
  c[d]  = [i,i+no]
c = dict(sorted(c.items(), key=lambda item: item[0]))
i,j = list(c.values())[0]
result_price=[]
for i in range(i,j):
  result_price.append(price[i])
for i in result_price:
  print(goodies[i],i)
print("The difference between the chosen goodie with highest price and the lowest price is ",list(c.keys())[0])
```

Output:

TestCase 1:

Custom Input

```
10
Fitbit Plus
7980
IPods
22349
MI Band
999
```

Status Successfully executed **Date** 2021-04-25 12:05:50 **Time** 0.03 sec **Mem** 17.968 kB

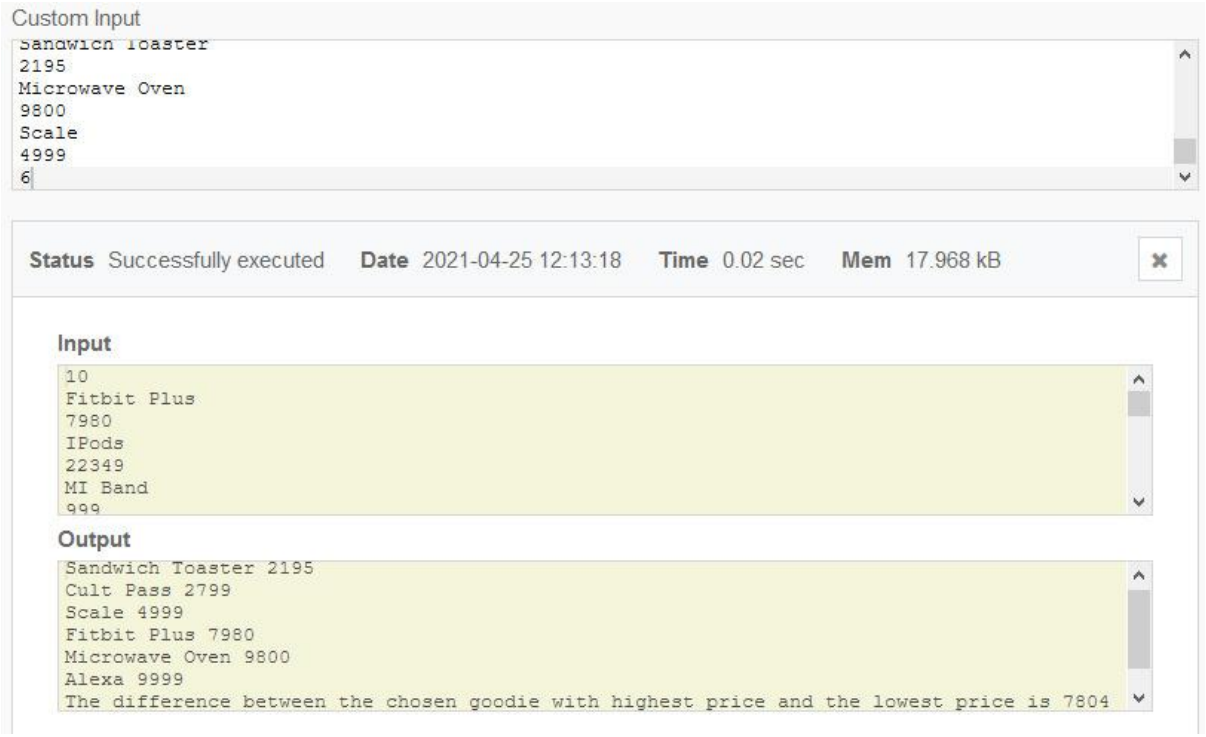
Input

```
Sandwich Toaster
2195
Microwave Oven
9800
Scale
4999
4
```

Output

```
Fitbit Plus 7980
Microwave Oven 9800
Alexa 9999
Digital Camera 11101
The difference between the chosen goodie with highest price and the lowest price is  3121
```

TestCase 2:



TestCase 3:

Custom Input

```
Sandwich Toaster
2195
Microwave Oven
9800
Scale
4999
2
```

Status Successfully executed **Date** 2021-04-25 12:08:55 **Time** 0.01 sec **Mem** 17.968 kB

Input

```
10
Fitbit Plus
7980
IPods
22349
MI Band
999
```

Output

```
Microwave Oven 9800
Alexa 9999
The difference between the chosen goodie with highest price and the lowest price is 199
```