

Suridata – Backend Engineer Exercise

Thank you for applying to Suridata, as part of the process we would like you to do a short exercise in Python.

Exercise guidelines:

1. You will receive a template that contains a list of employees, each employee contains three fields.
2. You will need to simulate a “Dwarf-Giant” game – in case you are unfamiliar, the goal of the game is to create unique pairs of all employees.
3. Each pair includes a Dwarf and a Giant – [(dwarf1, giant1), (dwarf2, giant2), ...]
4. For the game to be fair, each employee needs to be a dwarf exactly one time, and a giant exactly one time.

Please consider the following:

1. The input may include duplicates – it needs to be validated and cleaned. The unique index is a combination of all three fields.
2. The output needs to be random – each execution will need to produce a different output.
3. The combination of pairs such as (employee_1, employee_2) and (employee_2, employee_1) is forbidden.
4. For validation purposes, the output must be a single list of tuples, where the first element of each tuple is the dwarf's name and the second element in a giant's name (only name, not the entire object).

Bonus: Separate the input into chunks and run the algorithm in multiple process.

Notes:

1. The final output should be free of duplications.
2. All the heavy lifting should be done multi-process including the randomizing and pair selection.
3. See the annex in the next page to see an example of an input/output.

Submission: Please send a GitHub link, if that's not possible a zip file is sufficient.

Thank you and good luck!

```
employees = [  
  {  
    'department': 'R&D',  
    'name': 'emp1',  
    'age': 46,  
  },  
  {  
    'department': 'Sales',  
    'name': 'emp2',  
    'age': 28,  
  },  
  {  
    'department': 'R&D',  
    'name': 'emp3',  
    'age': 33,  
  },  
  {  
    'department': 'R&D',  
    'name': 'emp4',  
    'age': 29,  
  },  
]  
  
output: [('emp2', 'emp4'), ('emp4', 'emp1'), ('emp1', 'emp3'),  
         ('emp3', 'emp2')]
```