Chapter_02_Combinatorial_statistics

June 4, 2022

1 Combinatorial statistics

1.0.1 After this Chapter you will be able to:

- Compute and understand how to interprate the permutations
- Compute and understand how to interprate the arrangments
- Compute and understand how to interprate the combinations

1.0.2 Exercises (Trading):

- Compute the number of combinations between the following currencies: USD, EUR,CAD. (We consider that EUR/USD = USD/EUR).
- Compute the number of combinations between the following currencies: USD, EUR,CAD. (We consider that EUR/USD != USD/EUR)

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2 Exercises (Trading):

- Compute the number of combinations between the following currencies: USD, EUR,CAD. (We consider that EUR/USD = USD/EUR).
- Compute the number of combinations between the following currencies: USD, EUR,CAD. (We consider that EUR/USD != USD/EUR)

```python
import numpy as np
```

```python
def combination(n,k, repetition=False):

    if repetition:
        C = np.math.factorial(n+k-1) / (np.math.factorial(k)*np.math.factorial(n-1))
    else:
        C = np.math.factorial(n) / (np.math.factorial(k)*np.math.factorial(n-k))

    return C


combination(3,2)
```

```
[ ]: 3.0
```

```
[ ]: combination(3,2, repetition=True)
```

```
[ ]: 6.0
```

```
[ ]:
```