Permutations and Combinations

Permutations

In [ ]:
```
pip install itertools
```

```
ERROR: Could not find a version that satisfies the requirement itertools
 (from versions: none)
ERROR: No matching distribution found for itertools
WARNING: You are using pip version 21.2.4; however, version 23.3.1 is avai
lable.
You should consider upgrading via the '/data/user/0/ru.iiec.pydroid3/file
s/aarch64-linux-android/bin/python3.9 -m pip install --upgrade pip' comman
d.
Note: you may need to restart the kernel to use updated packages.
```

In [ ]:
```
from itertools import*

# Create permutations iterator
perm = permutations([1, 2, 3, 4, 5])
# Initialize a variable to count the number of permutations
count = 0

# Loop to iterate through each permutations in perm and print each permut
for i in perm:
    print(i)
    count += 1

# Prints the count of permutations
print(count)
```

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(5, 4, 3, 2, 1)
120
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In [ ]:

```
from itertools import*

# Create permutations iterator
perm = permutations([1, 2, 3, 4, 5], 3) # Here 2 is 'k'
# Initialize a variable to count the number of permutations
count = 0

# Loop to iterate through each permutations in perm and print each permut
for i in list(perm):
    print(i)
    count += 1

# Prints the count of permutations
print(count)
```

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(5, 4, 3)
60
```

Combinations

In [ ]:
```python
# Create combinations iterator
com = combinations([1, 2, 3, 4, 5], 3)
# Initialize a variable to count the number of combinations
count = 0

# Loop to iterate through each combinations in com and print each combina
for i in list(com):
    print(i)
    count += 1

# Prints the count of combinations
print("Number of combinations of 3 chosen from 5 =", format(count))
```

```
(1, 2, 3)
(1, 2, 4)
(1, 2, 5)
(1, 3, 4)
(1, 3, 5)
(1, 4, 5)
(2, 3, 4)
(2, 3, 5)
(2, 4, 5)
(3, 4, 5)
Number of combinations of 3 chosen from 5 = 10
```