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In [1]: import random
import time
import matplotlib.pyplot as plt
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In [2]: def insert_sort(A):
    for j in range(1, len(A)):
        key = A[j]
        i = j - 1
        while i >= 0 and A[i] > key:
            A[i+1] = A[i]
            i = i - 1
        A[i + 1] = key
    # print(A)
```

```
In [3]: Best_case = [0 ,1, 2, 3, 4, 5, 6 , 7]

st = time.time()
insert_sort(Best_case)
et = time.time()
elapsed_time = et - st
print('Best Case Execution time:', elapsed_time, 'seconds')

Best Case Execution time: 2.8133392333984375e-05 seconds
```

```
In [4]: worst_case = [7, 6, 5, 4, 3, 2, 1, 0]

st = time.time()
insert_sort(worst_case)
et = time.time()
elapsed_time = et - st
print('Worst Case Execution time:', elapsed_time, 'seconds')

Worst Case Execution time: 3.0994415283203125e-05 seconds
```

```
In [5]: avg_case = [0 , 1, 2, 3, 7, 6, 5, 4]

st = time.time()
insert_sort(avg_case)
et = time.time()
elapsed_time = et - st
print('Avg Case Execution time:', elapsed_time, 'seconds')

Avg Case Execution time: 3.0040740966796875e-05 seconds
```

```
In [6]: input_list = [10, 1000, 5000, 10000]
time_taken = []
for i in input_list:
    random.seed(10)
    randomlist = random.sample(range(0 , i), i)
    st = time.time()
    insert_sort(randomlist)
    et = time.time()
    elapsed_time = et - st
    time_taken.append(elapsed_time)
    print('When input is', i ,':Execution time:', elapsed_time, 'seconds')
```