

```
In [3]: import random
        from random import sample
        import time
        import matplotlib.pyplot as plt
```

```
In [4]: def measure(seq,number):
        start = time.time()
        subset = sample(seq, number)
        for i in range(10000):
            subset.insert(number//5,25)
        end = time.time()
        runtimeIn = end - start
        print(f"The runtime is {runtimeIn} sec")
        return runtimeIn
```

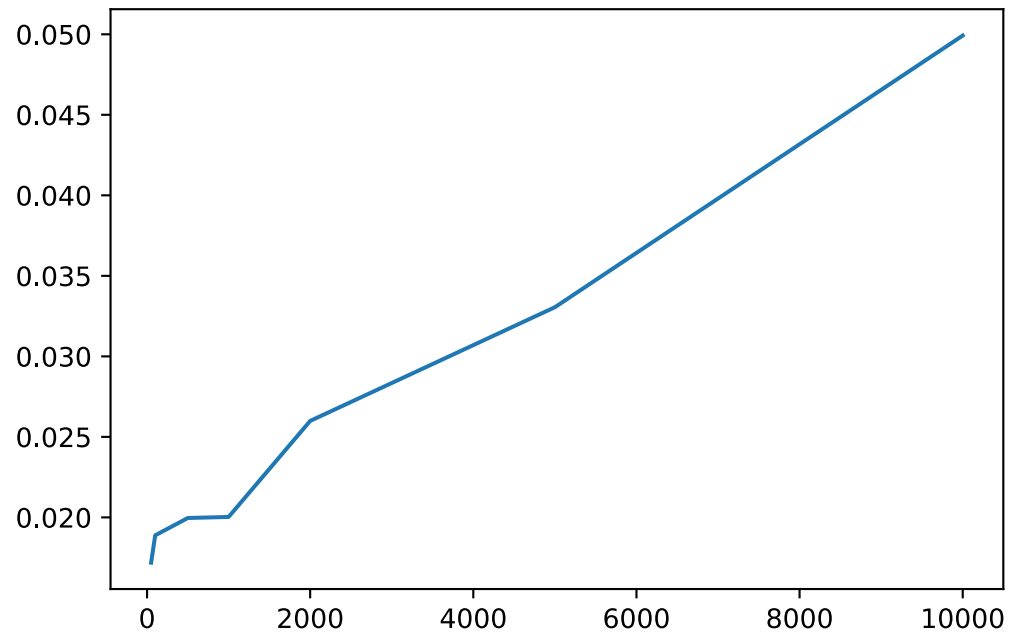
```
In [9]: random.seed(1)
        sequence = [i for i in range(100000)]
        seqRange = [50,100,500,1000,2000,5000,10000]
        runtime = []
        for i in range(7):
            print(f"{i+1}: for {seqRange[i]} operations\n -----")
            runtime.append(measure(sequence,seqRange[i]))
```

```
1: for 50 operations
-----
The runtime is 0.017191410064697266 sec
2: for 100 operations
-----
The runtime is 0.018888235092163086 sec
3: for 500 operations
-----
The runtime is 0.01996612548828125 sec
4: for 1000 operations
-----
The runtime is 0.02003026008605957 sec
5: for 2000 operations
-----
The runtime is 0.02599334716796875 sec
6: for 5000 operations
-----
The runtime is 0.03305387496948242 sec
```

```
7: for 10000 operations
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The runtime is 0.04992270469665527 sec
```

```
In [10]: plt.plot(seqRange, runtime)
```

```
Out[10]: [<matplotlib.lines.Line2D at 0x290b4fb4b20>]
```



```
In [ ]:
```