

## 5.1 - dtypes

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```
In [1]: import pandas as pd
```

```
In [2]: df = pd.DataFrame(index=range(10000))
```

```
In [3]: def fill_1(df):  
    mydf = df.copy()  
    for idx in mydf.index:  
        mydf.loc[idx, 'a'] = idx * 2  
    return mydf
```

```
In [4]: def fill_2(df):  
    mydf = df.copy()  
    mydf['a'] = -1  
    for idx in mydf.index:  
        mydf.loc[idx, 'a'] = idx * 2  
    return mydf
```

```
In [5]: fill_1(df).dtypes
```

```
a      float64  
dtype: object
```

```
In [6]: fill_2(df).dtypes
```

```
a      int64  
dtype: object
```

```
In [7]: %timeit fill_1(df)
```

```
1 loop, best of 3: 1.14 s per loop
```

```
In [8]: %timeit fill_2(df)
```

```
1 loop, best of 3: 1.32 s per loop
```

```
In [9]: def fill_1b(df):
        mydf = df.copy()
        mydf['a'] = -1.0
        for idx in mydf.index:
            mydf.loc[idx, 'a'] = idx * 2
        return mydf
```

```
In [10]: %timeit fill_1b(df)
```

1 loop, best of 3: 1.14 s per loop

```
In [11]: def fill_3(df):
        mydf = df.copy()
        for idx in mydf.index:
            mydf.loc[idx, 'a'] = idx * 2
        return mydf
```

```
def fill_4(df):
    mydf = df.copy()
    mydf['a'] = -1
    for idx in mydf.index:
        mydf.loc[idx, 'a'] = idx * 2
    return mydf
```

```
def fill_5(df):
    mydf = df.copy()
    mydf['a'] = -1.0
    for idx in mydf.index:
        mydf.loc[idx, 'a'] = idx * 2
    return mydf
```

```
In [12]: %timeit fill_1(df)
```

1 loop, best of 3: 1.2 s per loop

```
In [13]: %timeit fill_2(df)
```

1 loop, best of 3: 1.36 s per loop

```
In [14]: %timeit fill_3(df)
```

1 loop, best of 3: 1.27 s per loop