Creating New Columns in pandas

1. Direct Assignment

```
df['Returns'] = df['Close'].pct_change()
```

Simple, fast, most common method

2. Using assign()

```
df = df.assign(Returns=df['Close'].pct_change())
```

Returns new DataFrame, chainable

3. Arithmetic Operations

```
df['Spread'] = df['High'] - df['Low']
```

Element-wise operations on columns

4. Conditional (np.where)

```
df['Signal'] = np.where(df['Returns']>0, 'Up', 'Down')
```

Conditional column based on logic

Example: Stock DataFrame After Column Creation

Date	Close	Returns	Spread	Signal
2024-01-01	$150.00	-	$3.50	-
2024-01-02	$152.50	+1.67%	$4.20	Up
2024-01-03	$151.00	-0.98%	$3.80	Down