```python
In [2]: import pandas as pd

        # Computes nanoseconds per operation value from FTDC data.
        def get_ratio(path):
            data = pd.read_csv(path)
            data = data[['ts', 'counters.ops', 'timers.dur']]
            data = data.sort_values(by=['ts'])

            last_row = data.iloc[-1,:]
            return last_row['timers.dur'] / len(data)
```

```python
In [3]: full_validation = []
        no_validation = []
        for run_index in range(1, 4):
            full_validation.append(get_ratio(f'run{run_index}/full_validation/update.csv'))
            no_validation.append(get_ratio(f'run{run_index}/no_validation/update.csv'))
```

```python
In [4]: import numpy as np

        table = [['Run name', 'Full validation (ns/op)', 'No validation (ns/op)', 'Ratio']]
        for index, (full, none) in enumerate(zip(full_validation, no_validation)):
            row = [
                f'Run #{index + 1}',
                int(full),
                int(none),
                f'{(none/full - 1) * 100:.2f}%',
            ]
            table.append(row)

        full_mean = np.mean(full_validation)
        no_mean = np.mean(no_validation)

        table.append([
            f'Mean',
            int(full_mean),
            int(no_mean),
            f'{(no_mean/full_mean - 1) * 100:.2f}%',
        ])
```

```python
In [5]: from IPython.display import HTML, display
        import tabulate

        display(HTML(tabulate.tabulate(
            table,
            tablefmt='html',
            headers='firstrow',
        )))
```

Run name	Full validation (ns/op)	No validation (ns/op)	Ratio
Run #1	1820831	1227463	-32.59%
Run #2	1863841	1252807	-32.78%
Run #3	1820939	1224831	-32.74%
Mean	1835204	1235034	-32.70%

```python
In [7]: print(tabulate.tabulate(
            table,
            tablefmt='jira',
            headers='firstrow',
        ))
```

```
|| Run name  ||  Full validation (ns/op) ||  No validation (ns/op) || Ratio   ||
| Run #1      |                  1820831 |                1227463 | -32.59% |
| Run #2      |                  1863841 |                1252807 | -32.78% |
| Run #3      |                  1820939 |                1224831 | -32.74% |
| Mean        |                  1835204 |                1235034 | -32.70% |
```

```python
In [ ]:
```