I learned how to handle pandas. From head, tail, sample, shape, info, and describe, which are simple functions dealing with data frames, I was able to learn iloc and loc functions using slicing. The basic structure of slicing is df[start:stop:step]. This []Slicing problem is that the execution time is long, and problems can arise when a new value is added. So the use of iloc and loc is required, and iloc is slliced with int and loc with label. Among the example codes, there was a code with an impressive coding style, as follows.

```
mask = (df['revenue_millions'] > 400) & (df['director'] == 'Christopher Nolan')

df.loc[mask]
```

There were also functions that were not covered in the class in exercise. It is recommended to use chatgpt such as Googling, and it is said that it is necessary to understand the code instead. Functions required for exercise included nlargest, sort_values, plot, value_counts, apply, and groupby, and the application function and the expode function were unfamiliar, so I looked it up. The apply function is used to apply a function that changes a value to a specific column, and the expode function is used to expand the value of a specific column.

In the second hour after lunch, it was interesting to obtain various analysis information about the dataset using the ProfileReport tool. I thought it would be useful to use this tool if you simply wanted to get analysis results about the dataset quickly, unless you were writing code for study. I learned a new way of reading csv that I can read the clipboard of copied content in ctrl+c. I also learned a new thing about the Benford law, and it was amazing that the Benford law could determine whether the data was manipulated. When you want to import multiple files over and over again, import Path using the glob library. The code structure of files = [Path(x).name for x in glob.glob('/data/sales_*.csv)] was impressive.