**[오픈소스개발프로젝트 2021F]**

**출석 과제**

주의사항: 본문 글자 크기, 자간, 장평 등 서식 변경 금지

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| 해당 주차의 동영상을 시청하고 내용을 **영문으로** 요약하시오. (250 단어 이상) |
| Based on the basic python grammar I learned before the last midterm exam, it seems that I am learning to extract data as desired by the user using panda in earnest from this week. Since panda is a library, it is imported by import. head and tail are functions that call the first 5 and the last 5 of each row. Unlike python, pandas recognizes data types differently. Rows are horizontal and columns are vertical. When extracting data, use square brackets and column names to extract columns. When extracting rows, use loc or iloc. Data can be extracted through the slice or range from the midterm exam. By using the groupby function, you can obtain basic average values ​​or statistics while grouping and extracting the same names. You can count the number of grouped data using nunique. You can also draw graphs using the plot function by importing graph-related libraries from pandas. In chapter2 we learned to extract and in chapter3 we learned to add data. Create data using series. If nothing is set, the row index is a number by default, but if you want to directly specify a string, use the index argument. You can also create data using a dictionary through a dataframe. We learned how to represent various statistical values ​​such as maximum, minimum, average, and sort through the series method. bool expresses true and false, and we learned how to extract only true values ​​by utilizing the concept. Pickle is used in python to load a file. pickle converts data into binary format and saves it. It can be saved and loaded as csv or tsv. Series cannot be saved in Excel, but dataframes can be saved in Excel. |
| 동영상 내용에서 질문 사항이 있는 경우 작성하시오. |
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