Data Analytics in Python
COMP 2800
Spring 2024

Assignment 5

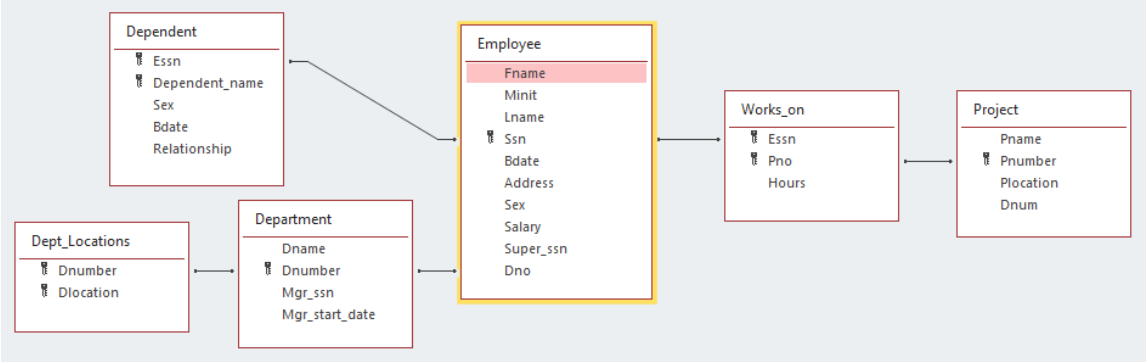
Complete each of the following exercises by writing the Python code required to get the given output. Put all of your code into a single Python file to submit it.

1. **For this exercise we will use another dataset on the course website:**

   http://faculty.otterbein.edu/dstucki/comp2800/CompanyData.xlsx

   You can either download it and open it using a filename and path, or you can open it directly from the URL.

   This dataset is an export of a simple relational database that has been exported to Excel, in which each table is represented by a worksheet. The relational design, including primary keys and foreign keys is represented in the diagram below:



2. **Write code that reads each of the six worksheets into a dictionary in which each key/value pair is a worksheet name and a DataFrame that has the contents of that worksheet. You can do this without hard-coding the worksheet names by iterating over wb.sheets and for each one using sheet.name.**

3. **It is most likely that that way that you implemented #2 resulted in the first column of each table to be set up as the index of the DataFrame. Write code that changes he index for each DataFrame to be is primary key. One way to do this is to use a combination of reset_index() and set_index(). For the two DataFrames with two attributes in the key, just reset the indices but do not set either of the key attributes to be an index. You will need to hard code the column names into your code for this task.**

4. **Write code that will merge Department with Dept_Locations, so that each department is paired up with all of its locations (you should get 12 rows).**
5. **Write code that will list the employee name and project name for each employee working on any project.**
6. **Write code that will list the project name and department name for each project.**
7. **Extra credit: write code that will list the project name and department name for each project that is worked on by Frankin Wong.**
8. **Email your file as an attachment to prof. stucki. Change the extension to .txt before attaching it.**

Due: Friday, 3/1/2024 by 11:59pm