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Pseudocode for Task D & E

START

IMPORT w2120666_code AS code1

IMPORT tkinter AS tk

DEFINE CLASS HistogramApp:

 FUNCTION __init__(results, date):

 INITIALIZE traffic_data WITH results

 INITIALIZE date WITH date

 CREATE Tkinter root window

 SET window title

 CREATE canvas for histogram display

 DISPLAY canvas

 FUNCTION setup_window():

 DRAW x-axis on canvas

 LABEL x-axis with "Hours 00:00 to 24:00"

 FUNCTION draw_histogram():

 INITIALIZE hourly_counts dictionary for 24 hours WITH 0 counts

 FOR each hour and entry IN traffic_data[0]:

 IF hour IS valid IN hourly_counts:

 UPDATE Elm counts

```
FOR each hour and entry IN traffic_data[1]:
```

```
    IF hour IS valid IN hourly_counts:
```

```
        UPDATE Hanley counts
```

```
EXTRACT hours, Elm counts, Hanley counts
```

```
CALCULATE scaling factor based on maximum count
```

```
FOR each hour IN hours:
```

```
    DRAW Elm bar
```

```
    LABEL Elm bar with count
```

```
    DRAW Hanley bar
```

```
    LABEL Hanley bar with count
```

```
    LABEL x-axis with hour
```

```
FUNCTION add_legend():
```

```
    ADD legend title WITH date
```

```
    ADD Elm and Hanley bar color legend
```

```
FUNCTION run():
```

```
    CALL setup_window()
```

```
    CALL draw_histogram()
```

```
    CALL add_legend()
```

```
    START Tkinter main loop
```

```
DEFINE CLASS MultiCSVProcessor:
```

```
    FUNCTION __init__():
```

```
        INITIALIZE empty current_data
```

```
        INITIALIZE file_path WITH None
```

FUNCTION clear_previous_data():

 CLEAR current_data

 SET file_path TO None

FUNCTION load_csv_data():

 OPEN file_path

 READ data LINES

 STORE processed data in current_data

 CLOSE file

FUNCTION handle_user_interaction():

 TRY:

 VALIDATE date input using code1

 FORMAT file_date based on input date

 SET file_path WITH formatted file path

 PROCESS CSV data using code1

 SAVE results using code1

 CALL load_csv_data()

 CALL process_files()

 EXCEPT TypeError:

 PRINT error message WITH file_path

FUNCTION process_files():

 PRINT welcome message

 INITIALIZE hourly counts dictionaries for Hanley and Rabbit

 FOR each row IN current_data:

 DETERMINE hour

 IF row IS for Hanley:

```
        UPDATE Hanley count
    ELSE:
        UPDATE Rabbit count
    CLEAR current_data
    APPEND hourly counts dictionaries TO current_data
```

MAIN FUNCTION:

```
WHILE True:
    TRY:
        CREATE MultiCSVProcessor instance
        CALL handle_user_interaction()
        IF current_data EXISTS:
            CREATE HistogramApp instance
            CALL run()
        WHILE True:
            PROMPT user TO continue OR quit
            IF user inputs 'N':
                PRINT quit message
                EXIT
            ELIF user inputs 'Y':
                PRINT load another file
                BREAK
            ELSE:
                PRINT invalid input message
        EXCEPT AttributeError, NameError, FileNotFoundError:
            PRINT error message
        CONTINUE
```

END