

```
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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
```