# Introduction

This document provides an explanation of a Python script that processes a dataset to determine specific visitor related statistics

## Tools Used

**Pandas Library**
- Purpose: The pandas library helps with manipulating and analyzing data. It offers structures like DataFrames that simplify loading, processing, and analyzing data.

- Reason for Use:
    a. Data Loading: The function pandas.read_excel is used to bring data from an Excel file into a DataFrame.
    b. Data Processing: Functions like pd.to_datetime and value_counts are useful for transforming and analyzing the data.

**Datetime Library**
- Purpose: The datetime library is for managing and manipulating date and time information.

- Reason for Use: Date Conversion: This library ensures that the 'Time' column in the dataset is formatted as datetime

# Code Overview

The code main tasks: processing the data to find the minute with the most visitors, and identifying the most common visitor type. Additionally, it interacts with the user to respond to specific queries about the data.

**Inputs Section**

The dataset is loaded using the pandas library. The path and sheet number are specified as inputs

**Logic Section**

The script includes three main functions:
- get_minute_with_most_visitors:This function calculates the minute with the highest number of visitors

- get_most_common_visitor:This function identifies the most common type of visitor by combining attributes such as gender, hijab, niqab, child, and bag status. It then finds the most frequent combination

- query_input:This function processes user queries and calls the appropriate function based on the query content.

# Code Overview

## User Interaction Section

The script includes a user interaction section where the user can choose from three options to get information about the dataset. Based on the user's choice, the script responds with either the minute with the most visitors, the most common visitor type, or both

## Output Section

The script's output provides insights into the visitor patterns

```
lenovo@lenovo-IdeaPad-Gaming-3-15IMH05:~/Desktop/EL/code$ python3 task.py
please choose an option:
1: Which minute with the most visitors?
2: Who is my most common visitor?
3: Both queries
choose: 1
the minute with the most visitors is: 12
```

```
the minute with the most visitors is: 12
lenovo@lenovo-IdeaPad-Gaming-3-15IMH05:~/Desktop/EL/code$ python3 task.py
please choose an option:
1: Which minute with the most visitors?
2: Who is my most common visitor?
3: Both queries
choose: 2
the most common type of visitors: Female, Hijab, No Niqab, Adult, No Bag
lenovo@lenovo-IdeaPad-Gaming-3-15IMH05:~/Desktop/EL/code$
```