Operations Research Project Proposal

About System:

Our web application allows users to input data such as Poisson and Exponential means to model a queuing system.

- The output of the simulation is a detailed analysis of the queuing system, including information on expected wait times and average number of users in the queue.
- The application is user-friendly and intuitive, making it easy for anyone to create and analyze a queuing model.
- Our algorithm considers a wide range of variables to provide the most accurate and reliable results.
- With the Queuing Model System, users can quickly and easily understand the behavior of their queuing system and make informed decisions.

Objective:

Develop a queueing model for an airport security checkpoint and study the effects of different security protocols and passenger arrival rates on the checkpoint's performance and passenger wait times.

To develop a queueing model for an airport security checkpoint, we would need to gather data on several different factors, including:

- The number of security lanes at the checkpoint
- The rate at which passengers arrive at the checkpoint
- The average time it takes for a passenger to go through security
- The capacity of each security lane (i.e., the maximum number of passengers it can process per hour)

Using this information, we can create a queuing model that simulates the behavior of the checkpoint and predicts passenger wait times under different scenarios. For example, we could study the effects of adding additional security lanes, changing security protocols, or increasing the arrival rate of passengers on the checkpoint's performance and passenger wait times.

Once we have developed the model, we can use it to experiment with different scenarios and identify potential solutions to improve the checkpoint's performance and reduce passenger wait times. This could include identifying bottlenecks in the security process and implementing measures to address them, such as implementing more efficient security protocols or increasing the capacity of security lanes.

Overall, the development of a queueing model for an airport security checkpoint would provide valuable insights into the behavior of the checkpoint and help identify potential solutions to improve its performance and reduce passenger wait times.