THE OPEN UNIVERSITY OF SRI LANKA

FACULTY OF ENGINEERING TECHNOLOGY

THE DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING

EEX5362 - Performance Modeling

Mini Project Report

A.M. Fathima Humaira

s22009993

222513186

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**System Overview**

This project models the **monthly outpatient clinic process** in a government hospital — focusing on the **waiting time** patients experience when consulting doctors during the morning session (8:00 a.m. – 12:00 p.m.).

Patients arrive early to collect tokens and wait to be seen by available doctors. Due to high patient load and limited doctor availability, long waiting times and congestion occur.

The system exhibits characteristics of a **queuing system**, making it suitable for performance modeling and analysis.

**Performance Objective**

**Objective:**  
To **minimize the average patient waiting time** between arrival and the start of consultation.

This is achieved by modeling the system as an **M/M/c queue** (Poisson arrivals, exponential service, multiple servers) and varying the number of doctors (c) to observe its effect on performance.

GitHub url:

<https://github.com/am-fathima/performance-modelling-MP.git>