

UNIVERSITI TEKNOLOGI MARA

**INVESTIGATING FEASIBILITY OF QUEUING
MODEL TO ELIMINATE SERVER DEADLOCK:
CASE OF SPP
(PATIENT MANAGEMENT SYSTEM)**

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ABSTRACT

The goal of transaction is to ensure that all of the objects managed by a server remain in a consistent state where, when they are accessed by multiple transactions and in the presence of server crashes or down. In any object that represents a shared resource in a distributed system, it must be responsible in ensuring that it can operate correctly in a concurrent environment. Therefore, programmers should take concern in implementing any objects or processes which will not be intended to use in a distributed system so that it will stay safe in a concurrent environment. This is to avoid from any issue such as server deadlock to be happened. A deadlock occurs when two or more processes are waiting on the same resource and each of the process is waiting on the other process to complete before moving forward. Deadlock also is a particularly common situation when clients are involved in a program, for a transaction in the program may last for a long period of time. This may resulting in many objects being locked thus, preventing other client using them. When this kind of situation occurs, there will be no way for these processes to resolve the conflict. In this research, researcher will determined on the modules which has been provided by the stakeholder, which the three selected modules has high number of server deadlock occurrence. In completing this research project, researcher tends to achieve two objectives here which are firstly, to identify server deadlock occurrence in three different modules in SPP. Then, researcher has decided to choose Queuing Model as the solution and second objective would be to investigate the feasibility of Queuing Model concept in solving or at least reducing current server deadlock problem. This research scope is the evaluation will only be done on three different modules which have been identified by the stakeholder, to have the most occurrence of server deadlock. Hopefully from this research contribution can helps stakeholder in reducing the occurrence of server deadlock as it occurs in a most crucial application system which is in health care information systems. For the future works, this research project can be extended by conducting an experimental research or simulation testing and implement the proposed M/M/1 Markov Model to SPP.

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