**Project Interim Report**

**Designing MPI Based Queuing Management System Using JAVA Language**

**Abstract:**

Since queues are formed of entities or people in different scenarios and locations like restaurants, banks and so on, therefore in order to cater these queues in better way a system is required.

Such system having capability to reduce time, cost and make better customer service in different situations. Thus, we are going to make queuing system where communication amongst components of queuing system will be MPI based that will be implemented in Java language.

Moreover, systems has already been present in market with C++ background. programming. So, for enabling it with add on features, we are going to implement the same queuing system with JAVA language as a prototype for commercial use

By using queuing system, customers are satisfied with the turn by turn system and there is no mess up at the counter. Token number will be called and the one with the same token number have an access to the counter for collecting their meal/product.

Although Socket programming has already been used for achieving the task but now a day working on MPI is due to the benefit that it will ease down the complexities of coding and implementing algorithms.

**Preliminary design:**

As per the design to implement middle ware as MPI to achieve communication between the components of queuing management system.

We have been using open MPI library to achieve the required task.

**Actions:**

Linux VM is being created where queue management system java interface is on NetBeans having all components kitchen, caller and take order.

MPI library is added in same OS and by using this library all components message passing will be achieved.

**To Be Done:**

MPI code is under progress including sending and receiving and its ranking and size in java which will be used for communicating component of queue management system like kitchen, order placement and etc. The whole program will be integrated in Java language.

**References:**

[1] <http://mpitutorial.com/tutorials/mpi-send-and-receive/>

[2][https://www.cs.carleton.edu/faculty/dmusican/cs348/mpi.html?fbclid=IwAR0vZhe9k6A\_KiXQsAjwaq3io74LWxDuLfmfCSm20WMJ967ssaLjX\_l7A4](https://www.cs.carleton.edu/faculty/dmusican/cs348/mpi.html?fbclid=IwAR0vZohe9k6A_KiXQsAjwaq3io74LWxDuLfmfCSm20WMJ967ssaLjX_l7A4)

[3] [https://www.open-mpi.org](https://www.open-mpi.org/)

[4]https://www.youtube.com/watch?v=EfD6A8rFZk&fbclid=IwAR2XEGUm5j1c3wRlXSmK3lPYGmzmx6YcnLCTKwh45UZHTwlMe3ULQwuTNMc