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**WEB BASED AUTOMATED SYSTEM FOR NURSE  
SCHEDULING**

A PROJECT REPORT PRESENTED BY

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to the Board of Study in Statistics & Computer Science of the  
**POSTGRADUATE INSTITUTE OF SCIENCE**

*In partial fulfillment of the requirements  
for the award of the degree of*

**MASTER OF SCIENCE IN COMPUTER SCIENCE**

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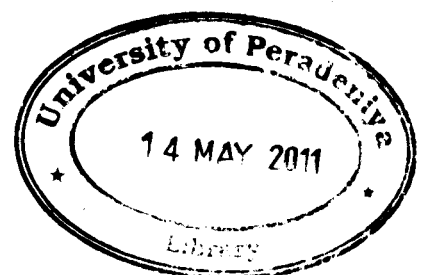
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# **WEB BASED AUTOMATED SYSTEM FOR NURSE SCHEDULING**

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Nurse Scheduling is the one of a famous scheduling problem which is faced by the many hospitals in all over the world. In Sri Lanka also, hospital management is facing this problem. Government hospitals in Sri Lanka normally use manual system to create the Nurse Roster (NR). Responsible person of a particular ward whom considered as the head nurse is creating the NR. After analyzing the existing method, it was revealed that there so many drawbacks in that method. Creation of this NR is a time consuming work for the Head nurse. Nurses are making so many complaints regarding the NR is another problem. Sometimes that NR does not meet the requirements of hospital management as well as of the patients. Other than these, quality of the NR is indirectly affected to the Nurses family life, leisure activity, etc. So the objective of the study is to create feasible, high quality monthly schedule for nurses of the hospitals in Sri Lanka. Proposed solution is a web based automated system for nurse scheduling. Nurse scheduling is taken as a constraints satisfaction problem also. During the requirement analyzing all the constraint were identified and divided them into two groups as hard constraints and soft constraints. After that considering the constraints and other requirements nurses were divided into shift groups. Algorithm was implemented using the graph coloring method to divide the nurses. Then schedule was created taking nurses from those shift groups but for the same shift, nurses from different shift groups were not jointly used. System was implemented using server side scripting language PHP, and MySQL was used as backend. Feasible schedule was given as the output. In this study all the soft constraints were not considered. As further study, algorithm can be developed without violating any soft constraints to increase the quality of the schedule. Also by combining graph coloring method and other existing algorithms feasible high quality monthly schedule for nurses can be developed.