

**Universiti Teknologi MARA**

**Optimizing Kindergarten Schedule  
Using Graph Coloring**

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## **STUDENT'S DECLARATION**

I certify that this report and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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## **ABSTRACT**

Starting kindergarten is an important milestone in children life. It provides platform for developing early childhood education that combines learning with play. These will develop children's mind and connecting their brain cells for become creative thinker. However, uncomfortable environment and too packed schedule will lead the children to get tired easily. One of the ways to help the children is by optimize kindergarten schedule in order to increase their motor skills. A graph coloring method were used to develop the new schedule by considering the essential and preferential conditions provided by the organization. The greedy algorithm was used to color the graph and it was supported by the C++ program. The result concludes that only six minimal colors are needed for the graph. The color represents the minimum time slot required for the schedule. Though, the results obtained may be varied and different according to the different essential constraints given.

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