

**SOLVING LARGE SYSTEM OF LINEAR EQUATION USING  
ITERATIVE METHODS (SUCCESSIVE OVER-RELAXATION,  
CONJUGATE GRADIENT AND PRECONDITIONED  
CONJUGATE GRADIENT)**

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## DECLARATION BY CANDIDATE

I certify that this report and the project to which it refers is the product of my own work and that any idea 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

Nowadays, system of linear equations are widely used especially in industrial. Application in industrial usually involve large problem. System of linear equation can be solved using direct and indirect method. Direct method required the use of inverse matrix to solve the problem. However, for large system of linear equation, finding an inverse could be difficult and time consuming. Therefore, indirect method in the form of numerical calculation is used. Such method are Successive Over-Relaxation, Conjugate Gradient and Preconditioned Conjugate Gradient. This research compare the performance of this three method to solve variety of system of linear equation from small scale to large scale in the form of number of iteration and CPU time. Numerical result show that the Conjugate Gradient method is the best to solve system of linear equation in terms of both number of iteration and CPU time. Above all, these three method could be used to solve system of linear equations.

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