**COMBINATORICS AND GRAPH THEORY**

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**Diagnostic Task No. 2**

Instruction: Find books, and write-ups on Combinatorics and Graph Theory, Discuss the course in 200 to 300 words and include its significance to computer science.

* Combinatorics is all about counting, problem selection, arrangement, and operation within a finite or discrete system. It is mainly used to develop how many operations a computer algorithm will require. Graph Theory on other hand, is a mathematical structure that is belong to discrete math is used to model pairwise relationship between objects. It provides an ideal subject area for computer science students to learn basic techniques. Combinatorics and Graph Theory is extremely important subjects when it comes to computer sciences. It teaches us to different techniques for analyzing and design. For example, combinatorics will increase our knowledge when it comes to lower bounds in computational models, randomized algorithms, coding theory and pseudo randomness that is helpful on creating a web/software. Same on Graph Theory, for us to be familiar with designing process we need to study the concept on web graph represented by vertices and hyperlinks. Graph Theory play an important role in figuring out whether an object can move through certain locations and make its way back that will help to create a better web/software. We can construct a better program if we apply all the subjects on Combinatorics and Graph Theory. Being a Computer Science student is sure will be hard especially understanding the different subjects, but it was a ticket to a safe but mediocre career.