A Review on Game Theoretic Scheduling

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***Abstract*—This document is a model and instructions for LaTeX.**

***Index Terms*—component, formatting, style, styling, insert**

I. Introduction

Task scheduling is an essential aspect of operating systems, real-time systems, cloud computing, and many other areas in computer science. It is a means by which computer processes and their threads are allowed to utilize computer system resources such as CPU time, memory, I/O data lines, network connections, etc [1]. For a multi-core system, task scheduling is done to perform load balancing, which reduces the piled up workload on one single core by dividing said workload among the multiple cores in the system [1]. The need for task scheduling, especially for real-time systems, stems from the fact that more than one task or operation may need to be executed by a system, where all these operations are critical and necessary for proper functionality of said system. In such a scenario, all these operations must be performed not only accurately, but also timely [1]. This means that a set of tasks that a processor needs to execute must be scheduled in a way such that all the tasks are finished within their corresponding deadlines. In soft-real-time systems such as general-purpose computers where there isn't really a strict deadline, task scheduling is still beneficial for multitasking. Modern laptops and desktop computers allow users to have several internet browser tabs at once, on top of having a handful of other programs running in the background - task scheduling is powerful and computers use it all around us. Task scheduling in computers is implemented using so-called task scheduling algorithms.

II. Understanding High Level Synthesis (HLS)

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III. Model-based design of Game Theoretic Scheduling

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IV. HLS of Game Theoretic Scheduling

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References

[1] Abraham Silberschatz, Greg Gagne, and Peter Baer Galvin, "Operating System Concepts, Eighth Edition ", Chapter 5.