**CS401 Graded Discussion Board**

Performance evaluation is at the foundation of computer architecture research and development. Present-day microprocessors are so complex that architects cannot design systems based on intuition and simple models only. Adequate performance evaluation methods are crucial to leading the research and development process in the right direction. To embed the parallelism in the processor as well as accuracy, modularity, power, and predictability as the key performance measures, what do you think how the systems should be developed while taking the consideration of hardware infrastructure prototypes or simulation-based design?

You are hereby required to select one of the given above design approaches along with three specific reasons to select your model. Give a precise and to-the-point answer not more than five lines.

**Solution:**

According to the given scenario I chose the “**Simulation-based design**” while consideration of hardware infrastructure in the research and development process.

**Why I chose Simulation-based design:**

As we know that, microprocessors are very expensive, complex and time consuming to build. Also, architects cannot design systems based on simple models:

* Simulations are good for products or hardware that are very expensive and time-consuming to create or test.
* Simulation is very useful and cost effective in order to have strong knowledge about its model and design.
* Simulation allows architect to determine how a system responds to different inputs for better understanding about how it operates or perform.
* Simulation-based design eliminates the unfit or non-useable designs before the significant material or resources have been consumed.
* Using Simulations, designers are able to create virtual prototypes, which speed up the design phase and reduces the product development time.