BYTE QUEST

Vasavi College of Engineering

Department of Computer Science and Engineering

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Contents:

Byte Quest is the article published by the CSE dept of Vasavi College of Engineering regarding the latest innovative Technologies and Software that have been emerged in the competitive world. The motto of this article is to update the people regarding the improvement in technology. The article is designed by the active participation of students under the guidance of faculty coordinators.

 Good, bad or indifferent if you are not investing in new technology, you are going to be left behind.

-Philip Green

 Once a new technology rolls over you, if you're not part of the steamroller, you're part of the road.

-Stewart Brand

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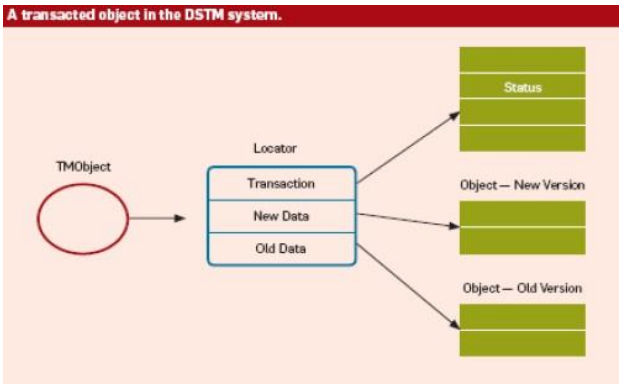
TRANSACTIONAL MEMORY

A primary challenge of parallel programming is to find better abstractions for expressing parallel computation and for writing parallel programs. Parallel programming encompasses all of the difficulties of sequential programming, but also introduces the hard problem of coordinating interactions among concurrently executing tasks.Today, most parallel programs employ low-level programming constructs that are just a thin veneer over the underlying hardware. These constructs consist of threads, which are an abstract processor, and explicit synchronization (for example, locks, semaphores, and monitors) to coordinate thread execution.

All TM systems use either hardware-based or software-based approaches to implement the two basic TM mechanisms: data versioning and conflict detection.



KANISHK (CSE –A 2/4)

DIGITAL TWIN TECHNOLOGY

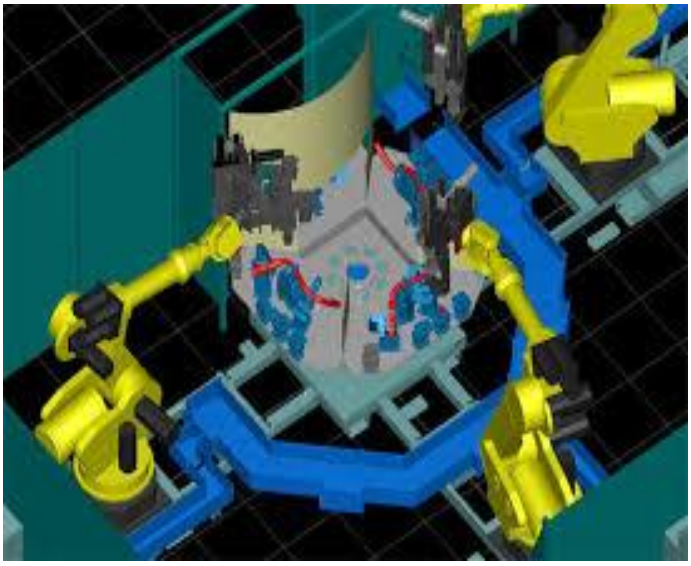
A Digital Twin Technology is the creation of the virtual replicas of physical elements or devices that data scientists and other IT professionals work on before setting up the real devices. The concept of the Digital Twin technology is based on three major pillars i.e. a physical object or device that exists in the real space, a virtual product that exists in the digital world and the bridge that connects these two pillars that help send and receive data and information between them. Digital twins and IoT together with artificial intelligence help us analyse data and monitor systems to scrutinise and solve problems. Today, Digital Twins have become essential for businesses and its products and services. The digital twin applications not only speed up the innovations but also reduce the costs of the project simultaneously. It helps analyse, observe and navigate to even a smaller detail with so much precision that there is no space for errors and inaccuracies.

SUSHMA (CSE-A 2/4)

ROBOTICS SIMULATOR

We have evolved from room-sized mainframes to laptops, from using stick shifts to autonomous vehicles, from personal assistants to virtual assistants, and to so much more in just the blink of an eye. The fast-paced technology-driven world has made our lives extremely convenient now. We see breakthroughs happening in our lives with technological applications doing the heavy lifting most of the time. This level of sophistication and ease is only possible because of industries becoming digitized. The ultimate aim - to have increased efficiency, enhanced accuracy, improved customer satisfaction and optimized workflows - has engaged organizations to invest in automation and operating tools. One such automation tool that is widely used today is robotic process automation. Designed to take up low-quality jobs, robotic process automation has helped organizations reduce human errors significantly. Low to no manual errors have led to increased productivity, ultimately profiting the industries in business and revenue growth. Hence, organizations across the world are largely deploying robotic process automation, which is why its market size is expected to hit 3.11 billion dollars by 2025.

Robotic process automation tools are applications that run predetermined codes to carry out a specific set of tasks. For the tool to provide accurate results, it should be fed with the right inputs. Inputs should be in an understandable manner, which means the data should be in a structured format. If the tool is fed with unstructured data, the tool will not understand how to analyze the data in the first place. To add to the complexity, most of the data that organizations collect is in an unstructured format. Hence, to make the most out of all the data gathered, organizations are opting to make automation tools capable of not only handling workflows smartly but also making decisions.



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