

# MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE (UGC - AUTONOMOUS)

## A Guest Lecture on "Quantum computing"

Organized by MITS -Dept. of CSE

9<sup>th</sup> September 2021

### Top Creative Thinking Skills

- ANALYTICAL**  
Ability to analyze things first
- OPEN-MINDED**  
Thinking of things no one else has considered before
- PROBLEM SOLVING**  
Ability to solve an important issue
- ORGANIZATION**  
Being able to structure a plan of action with clear goals and deadlines
- COMMUNICATION**  
Strong written and oral skills, ability to listen and ask the right questions

the balance 23:41

Windows taskbar: Type here to search, 10:32 AM, 10/7/2021, 32°C, 100% volume, 40% battery.

Zoom participant list (partial): DR, SS, DR, MK, LP, AR, HK, CS, BM, +48.

### Automation Project

IA Process: Automat ed, Automat ed, Automat ed, Automat ed, Assisted, Assisted

Traditional Process: Manual

Process Flow: Detect → Validate & Enrich → Classify → Assign → Troubleshoot → Resolve

Windows taskbar: Type here to search, 10:32 AM, 10/7/2021, 32°C, 100% volume, 40% battery.

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Report Submitted by – Dr.K.Saravanan ASP/CSE

The CSE Department organized a Guest Lecture on “**Quantum computing**”, delivered by Mr. Loganathan, Network Engineer, Future-wave systems on 09-09-2021.

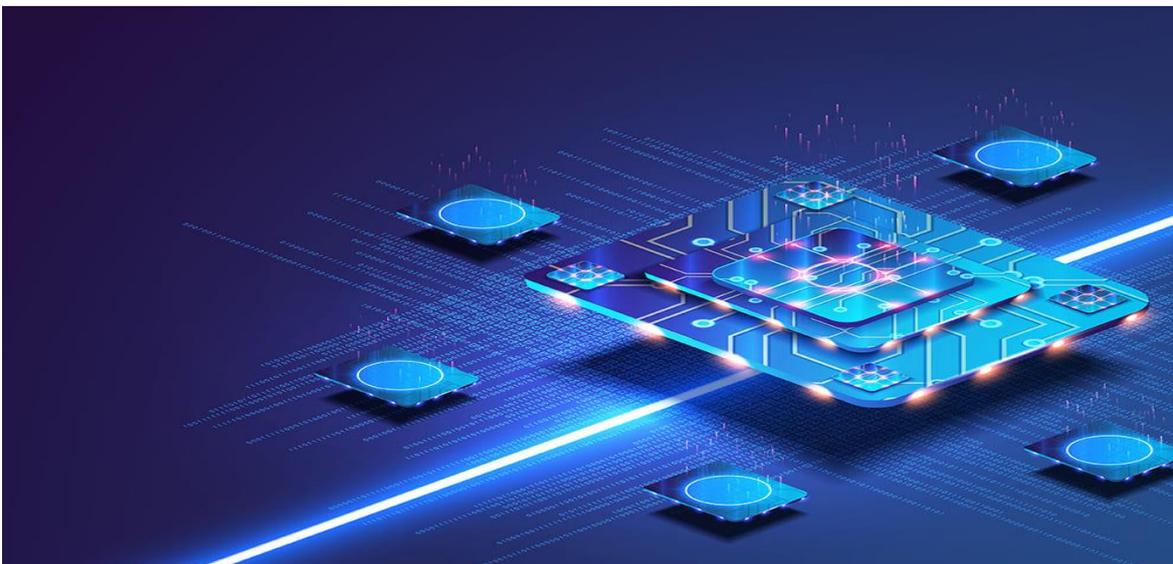
**HoD CSE:** The Professor and the Head, Department of Computer Science and Engineering, addressed about how Programming Languages is important in our software development. Then the session was handed over to Mr Loganathan N/W Engineer Future wave Systems.

The speaker discussed about quantum computing Life Cycle in detail. Quantum computing is the process of finding bugs in the software and making the software bug free. This quantum computing mainly improves the quality of software, reliability and performance of the system. Such a continuous testing to enhance the quality of software requires a lot of patience and knowledge in debugging the program to understand where is the possibility of encountering bugs. Tester may not require how to program, but always requires the knowledge of debugging the program. Such a testing must be actually included in the early stages of the SDLC phases so that the fixing of bugs may get lower and even bugs can be identified and rectified easily than identifying at the end. Around 68 Students has participated in the online programme.

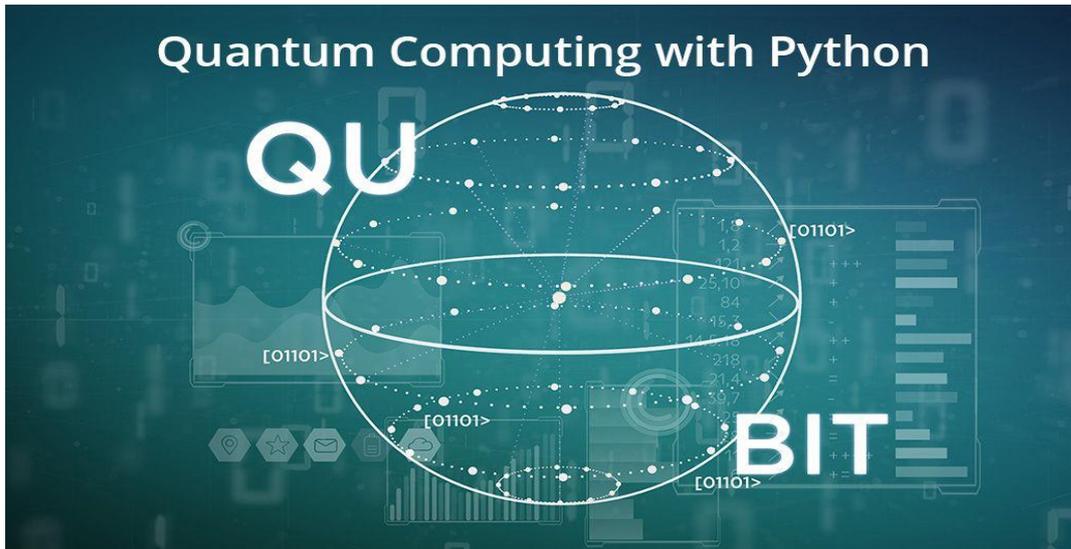
The speaker spoke about various types of quantum and importance of each and every type in a brief manner like Manual types.

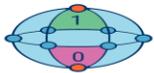
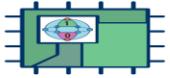
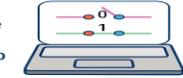
- Quantum computing is a rapidly-emerging technology that harnesses the laws of quantum mechanics to solve problems too complex for classical computers.
- Quantum computing opens the door potentially solving very large and complex computational problems that are basically impossible to solve on traditional computers.
- Taking large manufacturing data sets on operational failures and translating them to combinatoric challenges .

The students expressed that the technical session was very purposeful and helped them in knowing in depth about Quantum computing.



# Quantum Computing with Python



Quantum Computing	Vs.	Classical Computing
 <p>Calculates with qubits, which can represent 0 and 1 at the same time</p>		 <p>Calculates with transistors, which can represent either 0 or 1</p>
 <p>Power increases exponentially in proportion to the number of qubits</p>		 <p>Power increases in a 1:1 relationship with the number of transistors</p>
 <p>Quantum computers have high error rates and need to be kept ultracold</p>		 <p>Classical computers have low error rates and can operate at room temp</p>
 <p>Well suited for tasks like optimization problems, data analysis, and simulations</p>		 <p>Most everyday processing is best handled by classical computers</p>

CBINSIGHTS

Quantum computing is a type of computation whose operations can harness phenomena of quantum mechanics, such as superposition, interference, and entanglement. Devices that perform quantum computations are known as quantum computers.<sup>[1][2]</sup> Though current quantum computers are too small to outperform usual (classical) computers for practical applications, larger realizations are believed to be capable of solving certain computational problems, such as integer factorization (which underlies RSA encryption), substantially faster than classical computers. The study of quantum computing is a subfield of quantum information science.

