XAVIER INSTITUTE OF ENGINEERING

A SISTER INSTITUTION OF ST. XAVIER'S COLLEGE

Guest Lecture on "Applications of TCS"

DATE: 02/09/2021

Event Coordinator

1. Sushama Khanvilkar

Time& Place:

2:00pm-3:15pm

Online : Google Meet Platform

Department:

Computer Engineering

No of participants:

44

An online guest lecture was organized for T.E.(COMP) on the topic "**Applications of TCS**" and it was delivered by Prof. Swati Ringe, Asst. Professor, Computer Dept, Fr.CRCE, Bandra.

The guest lecture was conducted using Google meet on 2nd September 2021 and was organized by Ms. Sushama Khanvilkar from Computer Department.

Total 44 students attended the guest lecture and the objective of the guest lecture was to provide an insight to the third-year students about how the concepts in the Theory of Computation are applicable in different domains in real time and help them to understand importance of the subject as a research perspective.

The speaker shared his views on basics of automata theory, logic and automata relation, how automata could be used to build different real time applications and in computer science.

The students were quite astonished at the way available for different perspectives about applications of automata theory. Overall, the session was interesting, interactive and motivating for students to study Theory of Computer Science.

Student Feedback Student Feedback and Benefits:

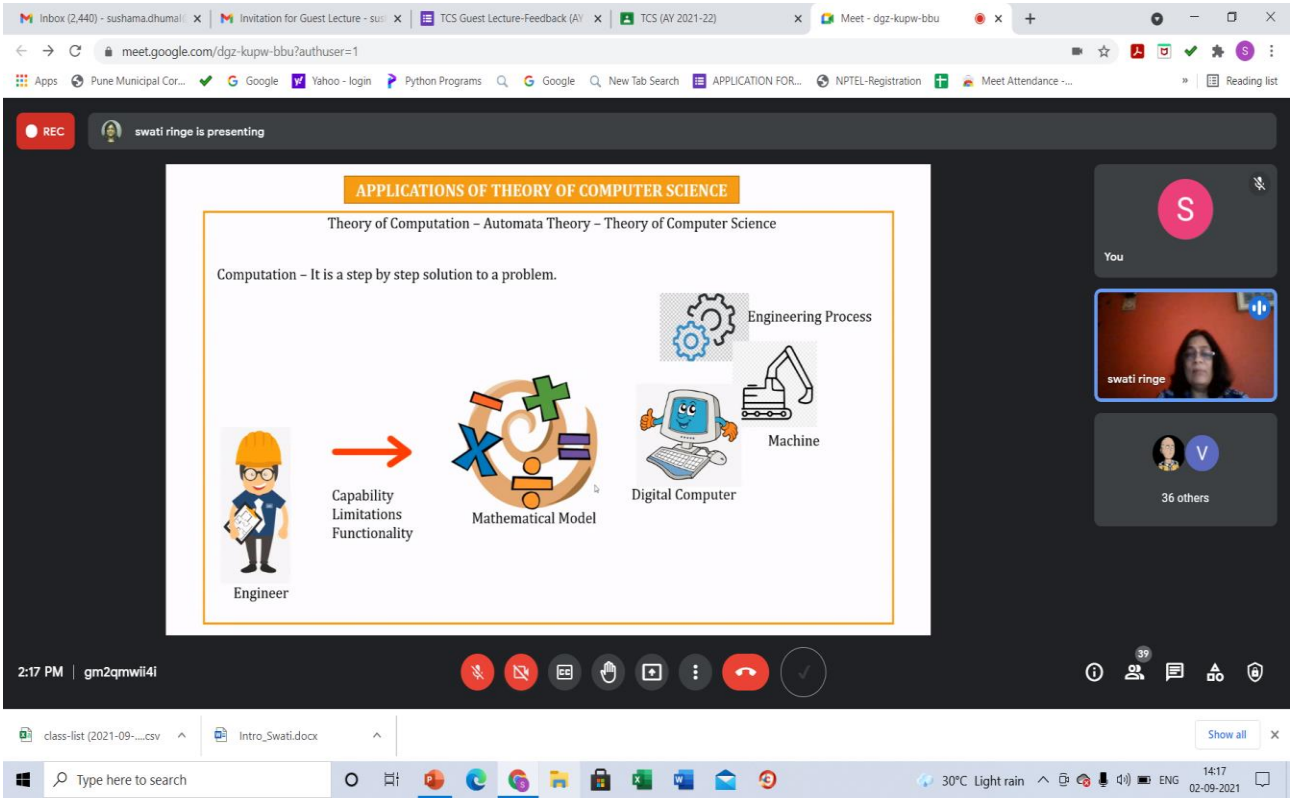
The students found the session very informative, helpful and excellent. It was a knowledge gaining session about applications of 'Theory of Computer Science' in various domains.

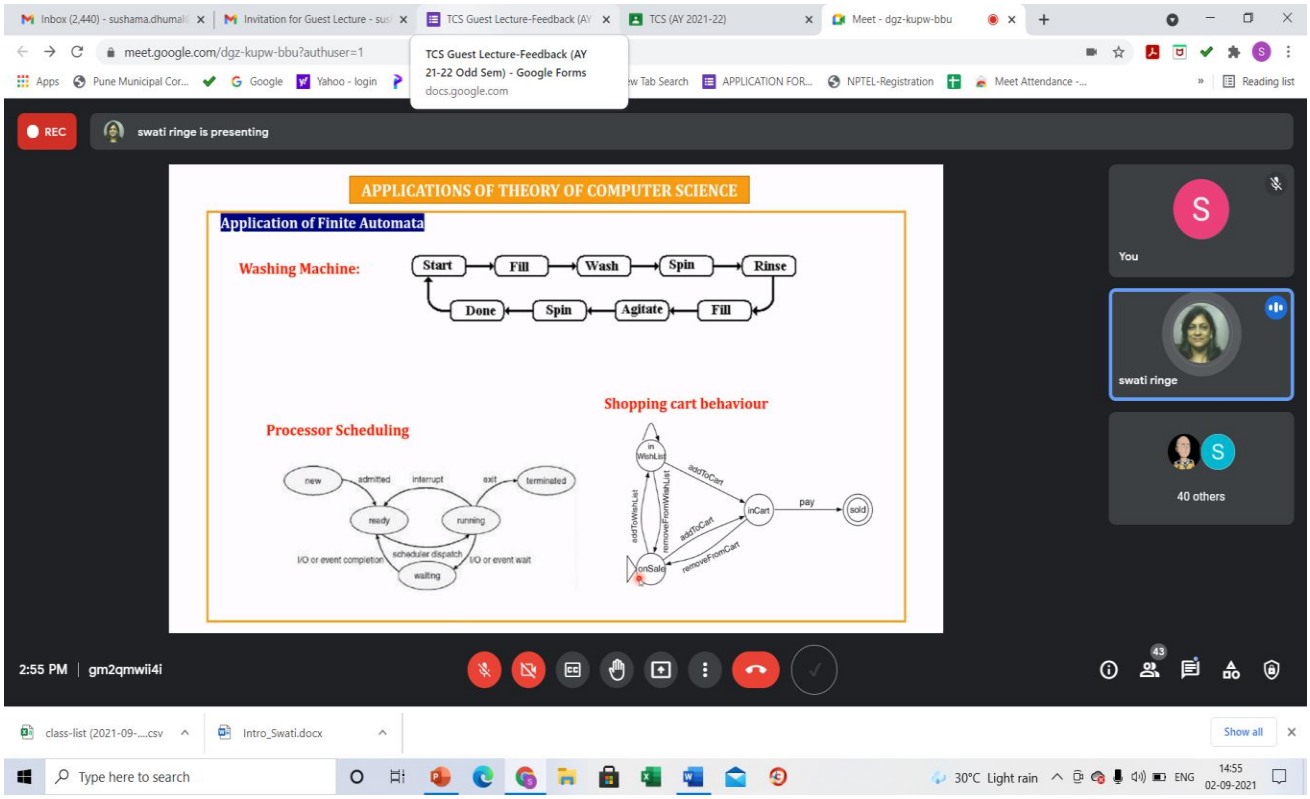
Ms. Sushama Khanvilkar
Assistant Professor
COMP Dept.

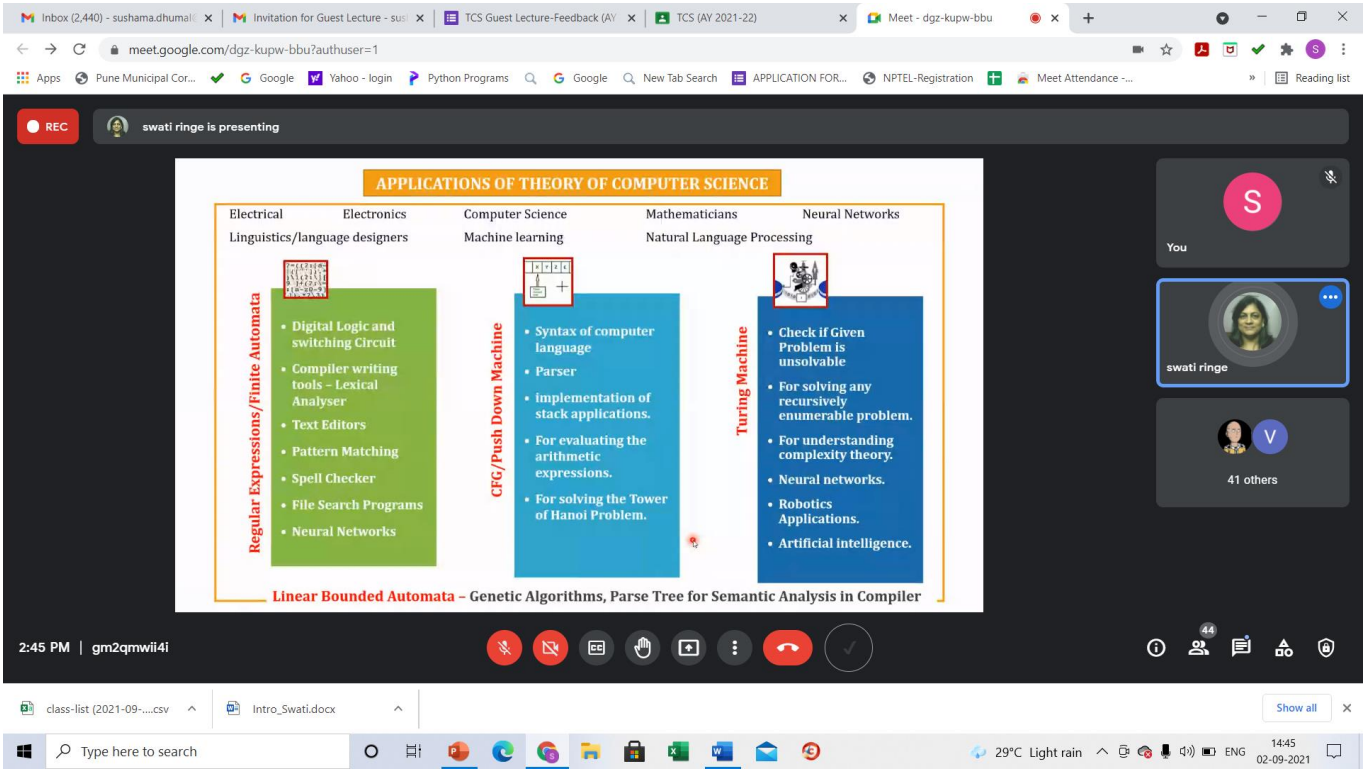
Dr. Saurabh Patil
Associate Professor &
HOD, COMP Dept.

Dr. Y. D. Venkatesh
Principal

Images (if Any)






REC
swati ringe is presenting
APPLICATIONS OF THEORY OF COMPUTER SCIENCE
Electrical
Electronics
Computer Science
Mathematicians
Neural Networks
Linguistics/language designers
Machine learning
Natural Language Processing
Regular Expressions/Finite Automata
Digital Logic and switching Circuit
Compiler writing tools – Lexical Analyser
Text Editors
Pattern Matching
Spell Checker
File Search Programs
Neural Networks
CFG/Push Down Machine
Syntax of computer language
Parser
implementation of stack applications.
For evaluating the arithmetic expressions.
For solving the Tower of Hanoi Problem.
Turing Machine
Check if Given Problem is unsolvable
For solving any recursively enumerable problem.
For understanding complexity theory.
Neural networks.
Robotics Applications.
Artificial intelligence.
Linear Bounded Automata – Genetic Algorithms, Parse Tree for Semantic Analysis in Compiler
You
swati ringe
41 others
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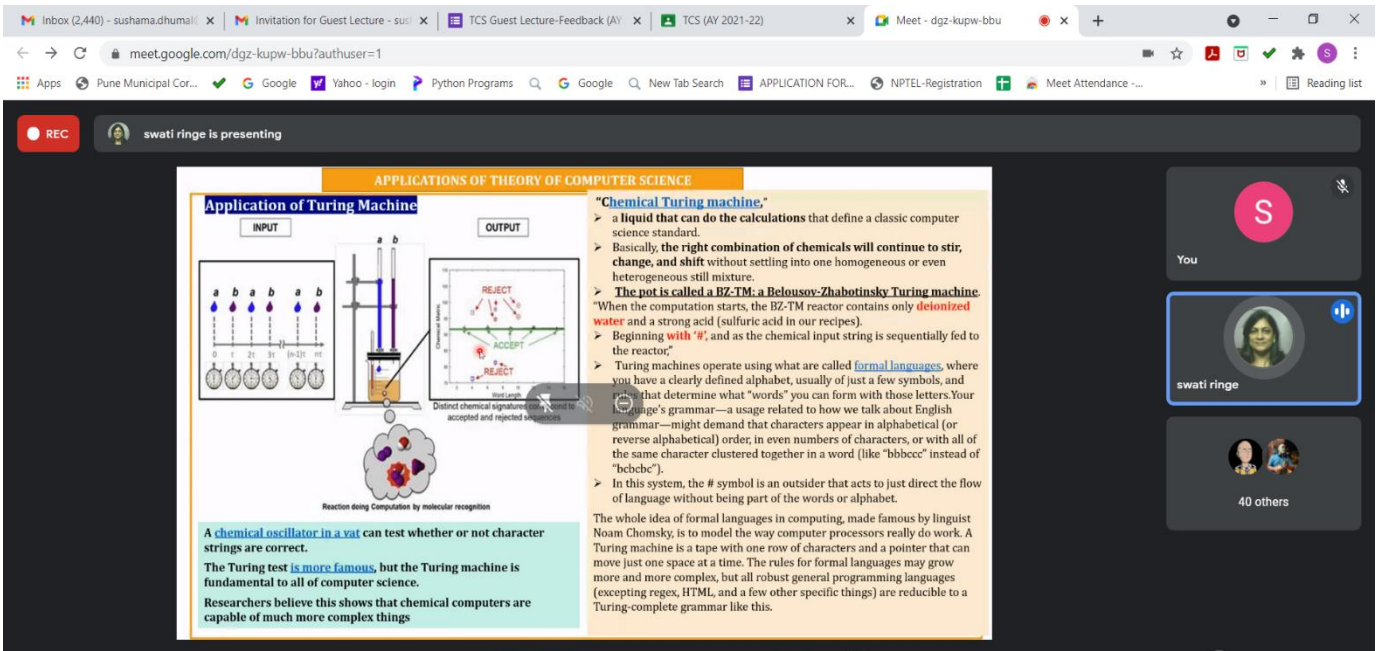
REC
swati ringe is presenting
APPLICATIONS OF THEORY OF COMPUTER SCIENCE
Application of Turing Machine
INPUT
OUTPUT
REJECT
ACCEPT
REJECT
Reaction doing Computation by molecular recognition
A chemical oscillator in a vat can test whether or not character strings are correct.
The Turing test is more famous, but the Turing machine is fundamental to all of computer science.
Researchers believe this shows that chemical computers are capable of much more complex things
"Chemical Turing machine,"
a liquid that can do the calculations that define a classic computer science standard.
Basically, the right combination of chemicals will continue to stir, change, and shift without settling into one homogeneous or even heterogeneous still mixture.
The pot is called a BZ-TM: a Belousov-Zhabotinsky Turing machine.
"When the computation starts, the BZ-TM reactor contains only deionized water and a strong acid (sulfuric acid in our recipes).
Beginning with '#,' and as the chemical input string is sequentially fed to the reactor,"
Turing machines operate using what are called formal languages, where you have a clearly defined alphabet, usually of just a few symbols, and rules that determine what "words" you can form with those letters.Your language's grammar—a usage related to how we talk about English grammar—might demand that characters appear in alphabetical (or reverse alphabetical) order, in even numbers of characters, or with all of the same character clustered together in a word (like "bbbccc" instead of "bcbcbc").
In this system, the # symbol is an outsider that acts to just direct the flow of language without being part of the words or alphabet.
The whole idea of formal languages in computing, made famous by linguist Noam Chomsky, is to model the way computer processors really do work. A Turing machine is a tape with one row of characters and a pointer that can move just one space at a time. The rules for formal languages may grow more and more complex, but all robust general programming languages (excepting regex, HTML, and a few other specific things) are reducible to a Turing-complete grammar like this.
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40 others
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