CSN-101 (Introduction to Computer Science and Engineering)

Lecture 22: Reviewing Syllabus for ETE

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Piazza Class Room: https://piazza.com/iitr.ac.in/fall2019/csn101

[Access Code: csn101@2019]

Moodle Submission Site: https://moodle.iitr.ac.in/course/view.php?id=45
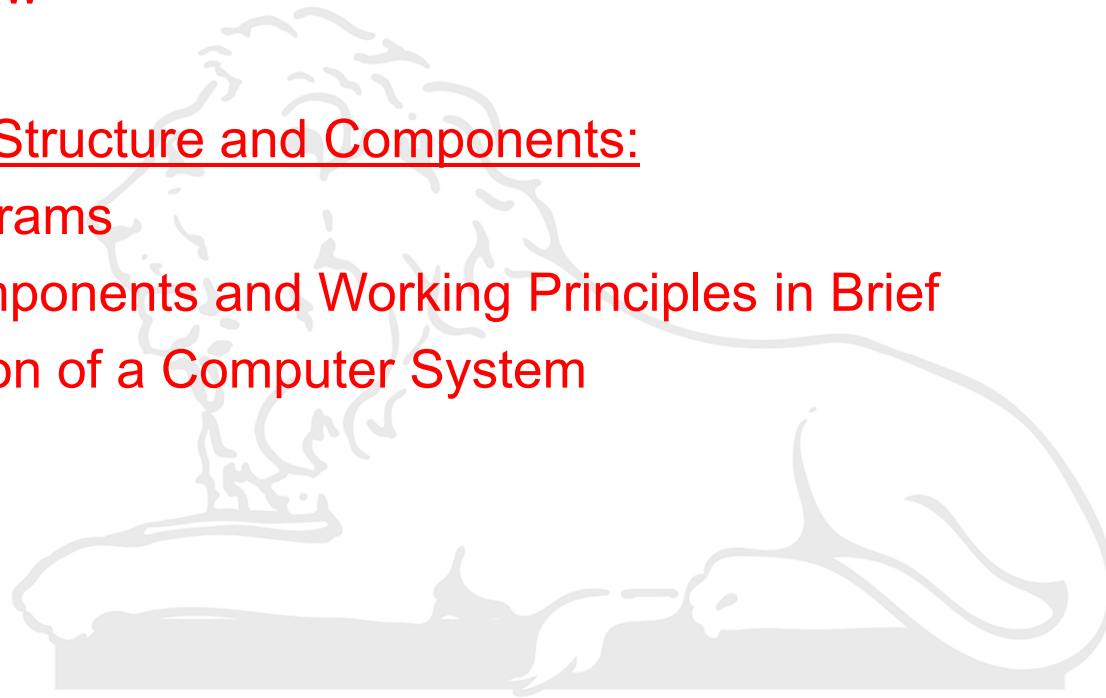
[Enrollment Key: csn101@2019]

Topics to Studied till MTE:

- <u>Evolution of Computer Hardware and Moore's Law:</u>
- X   History (no need to remember years)
- X   Moore's Law

- <u>Computer Structure and Components:</u>
- X   Block Diagrams
- X   List of Components and Working Principles in Brief
- X   Organization of a Computer System

Topics to Studied till MTE:

- <u>Computer Networking and Web Technologies:</u>
- X Basic concepts of networking, bandwidth, throughput
- X Different layers of networking
- X Network components
- X Type of networks
- X Network topologies
- X MAC, IP Addresses, DNS, URL
- X HTML - Basic tags

- <u>Linux Operating Systems:</u>
- X Basic utility commands
- X Some system administrator commands
- X Directory structure, file access permissions (read, write and executable)
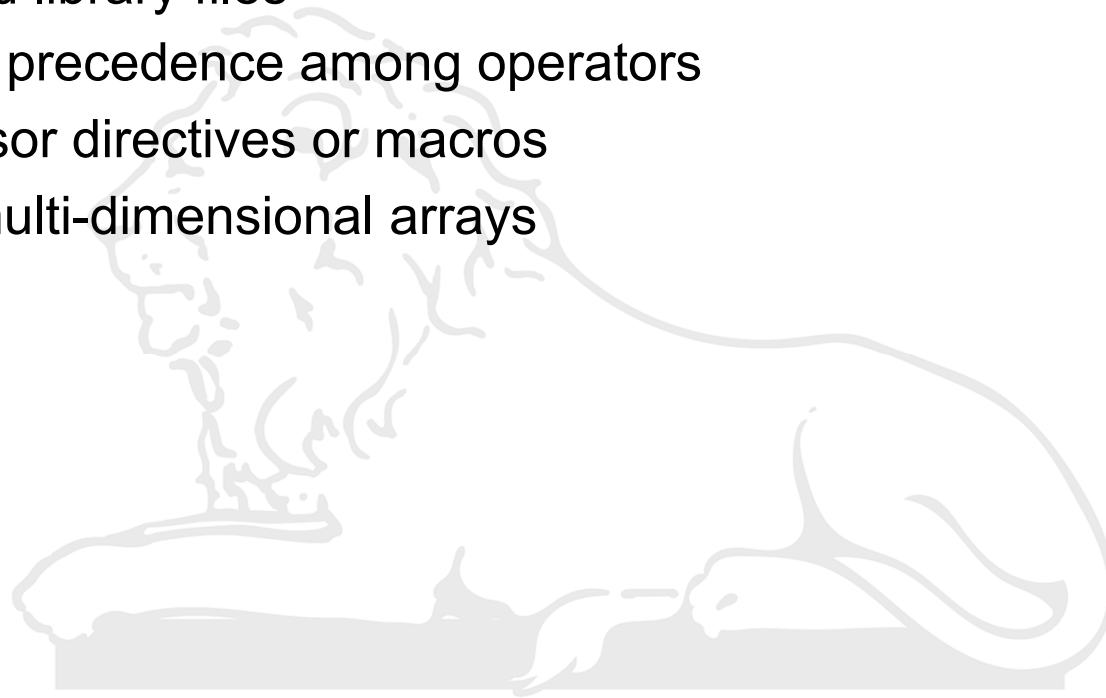- X Using Vi editor

Topics to Study for ETE:

- <u>Number Systems:</u>
- ✓ Decimal, Binary, Octal, Hexadecimal
- ✓ Conversions among them
- ✓ Negative number representation
- ✓ Fractional (Real) number representation
- ✓ Binary Number Representations, floating point numbers, IEEE 754 format

- <u>Problem solving using Computers:</u>
- ✓ Flowchart Drawing
- ✓ Writing Pseudo-codes for Algorithms to Solve Computational Problems
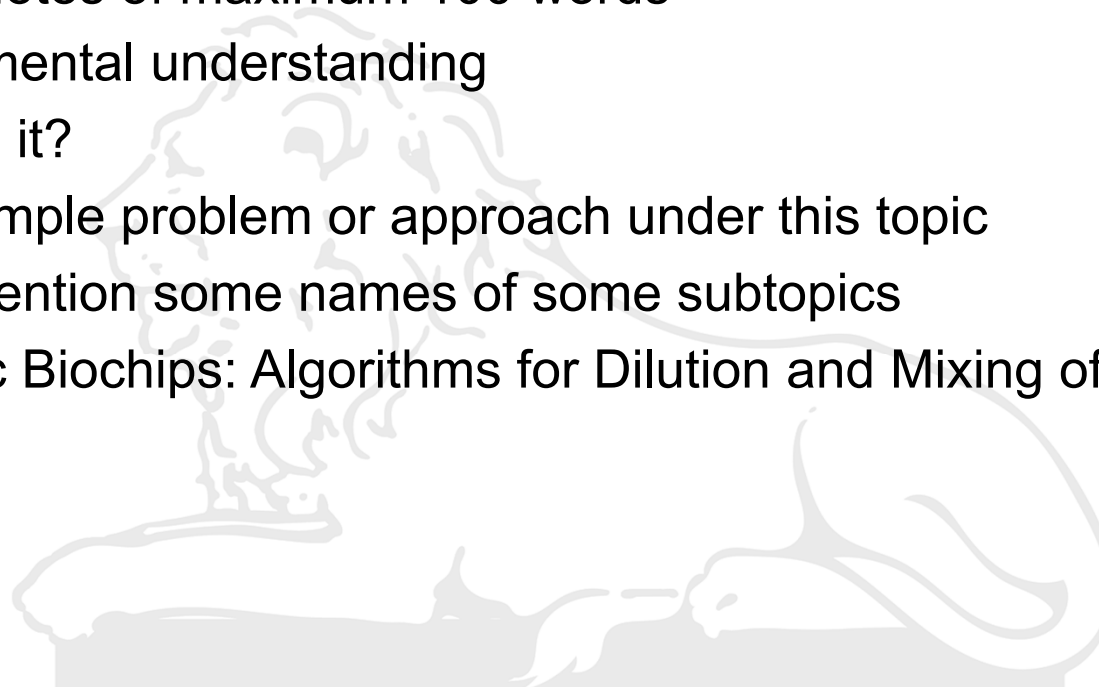- ✓ Example Algorithms – Bubble sort, Matrix Multiplication, etc.

Topics to Study for ETE:

- <u>C Programming:</u>
  - ✓ Basic data types
  - ✓ Header and library files
  - ✓ Operators, precedence among operators
  - ✓ Preprocessor directives or macros
  - ✓ One and multi-dimensional arrays
  - ✓ Functions
  - ✓ Pointers

Topics to Study for ETE:

- Emerging Technologies of CSE:
- ✓ Topics discussed during seminars of Term Projects:
  - ✓ Short Notes of maximum 100 words
  - ✓ Fundamental understanding
  - ✓ What is it?
  - ✓ An example problem or approach under this topic
  - ✓ Only mention some names of some subtopics
- ✓ Microfluidic Biochips: Algorithms for Dilution and Mixing of fluids

Best Wishes for Your ETEs!