

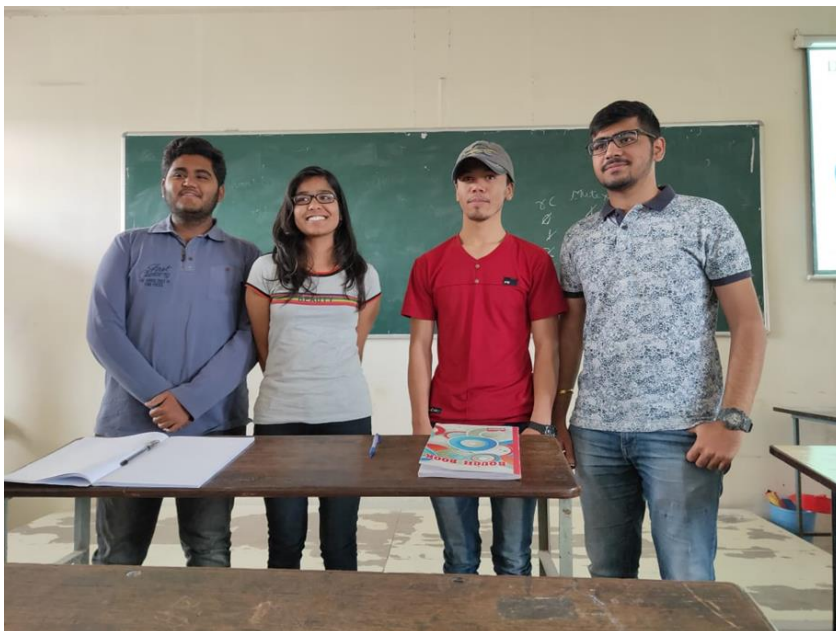
## Department of Information Technology

### Innovations in Teaching Learning

1)Name of the Course:Operating System

2)Name of the Faculty:Mrs.A.R.Sawant

3)Innovative method practised:Role play to explain Reader writer problem



1) Name of the Course: Object Oriented Programming

2) Name of the Faculty: Dr. P. A. Bailke

3) Innovative method practiced: Solved programming challenges on platforms like Hacker Rank

Such exercise has improved analytical as well as coding skills of students.

Example problem: [URL: <https://www.hackerrank.com/challenges/java-string-compare/problem?isFullScreen=true>]

We define the following terms:

Lexicographical Order, also known as alphabetic or dictionary order, orders characters as follows:

For example, ball < cat, dog < dorm, Happy < happy, Zoo < ball.

A substring of a string is a contiguous block of characters in the string. For example, the substrings of abc are a, b, c, ab, bc, and abc.

Given a string, `s`, and an integer, `k`, complete the function so that it finds the lexicographically smallest and largest substrings of length `k`.

Function Description

Complete the `getSmallestAndLargest` function in the editor below.

`getSmallestAndLargest` has the following parameters:

string `s`: a string

int `k`: the length of the substrings to find

Returns

string: the string `' + "\n" + '` where `and` are the two substrings

Input Format

The first line contains a string denoting `s`.

The second line contains an integer denoting `k`.

Constraints consists of English alphabetic letters only (i.e., [a-zA-Z]).

## Sample Input

welcometojava

3

## Sample Output

ava

wel

## Explanation

String has the following lexicographically-ordered substrings of length :

We then return the first (lexicographically smallest) substring and the last (lexicographically largest) substring as two newline-separated values (i.e., `ava\nwel`).

The stub code in the editor then prints `ava` as our first line of output and `wel` as our second line of output.

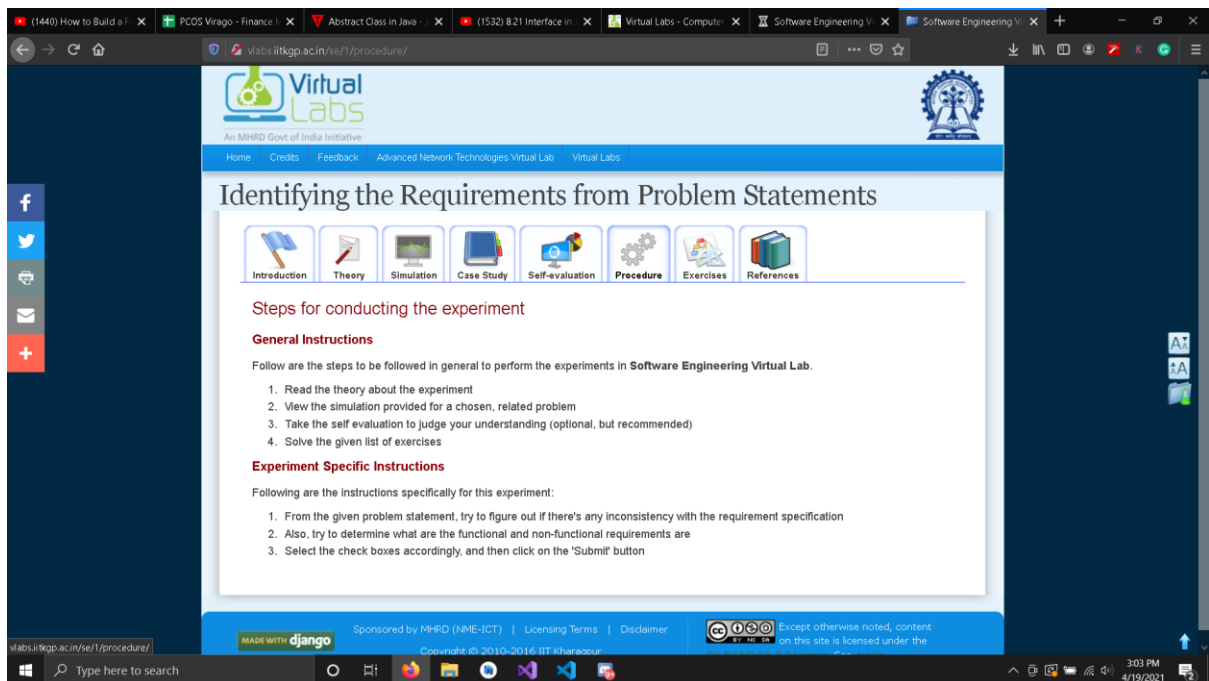
The screenshot shows the HackerRank interface for the 'Java Substring Comparisons' problem. The browser address bar shows the URL: `hackerrank.com/domains/java?filters%5Bstatus%5D%5B%5D=solved&filters%5Bsubdomains%5D%5B%5D=java-strings&badge_type=java`. The page header includes the HackerRank logo and navigation tabs: PREPARE, CERTIFY, and COMPETE. The user's profile is 'preeti\_bailke'. The problem title is 'Java Substring Comparisons', described as 'Easy, Java (Basic), Max Score: 10, Success Rate: 91.84%'. The status is 'Solved', indicated by a green checkmark and the word 'Solved' in a green box. The 'STATUS' section shows 'Solved' as checked and 'Unsolved' as unchecked. The 'SKILLS' section shows 'Java (Basic)' and 'Java (Intermediate)' as unchecked. A progress bar indicates '15 more points to get your first star!' with a rank of 1069755 and 10/25 points.

1)Name of the Course:Software Design Methodology

2)Name of the Faculty:Mrs.D.J.Joshi

3)Innovative method practised:Use of virtual lab for completing UML assignments.

Screenshot/evidence:



The screenshot shows a web browser window displaying the Virtual Labs website. The page title is "Identifying the Requirements from Problem Statements". The website header includes the Virtual Labs logo and navigation links: Home, Credits, Feedback, Advanced Network Technologies Virtual Lab, and Virtual Labs. A sidebar on the left contains social media icons for Facebook, Twitter, and a plus sign. The main content area features a navigation menu with icons for Introduction, Theory, Simulation, Case Study, Self-evaluation, Procedure, Exercises, and References. Below the menu, the page is titled "Steps for conducting the experiment" and contains two sections: "General Instructions" and "Experiment Specific Instructions".

**Virtual Labs**  
An MHRD Govt of India Initiative

Home Credits Feedback Advanced Network Technologies Virtual Lab Virtual Labs

## Identifying the Requirements from Problem Statements

Introduction Theory Simulation Case Study Self-evaluation Procedure Exercises References

### Steps for conducting the experiment

**General Instructions**

Follow are the steps to be followed in general to perform the experiments in Software Engineering Virtual Lab.

1. Read the theory about the experiment
2. View the simulation provided for a chosen, related problem
3. Take the self evaluation to judge your understanding (optional, but recommended)
4. Solve the given list of exercises

**Experiment Specific Instructions**

Following are the instructions specifically for this experiment:

1. From the given problem statement, try to figure out if there's any inconsistency with the requirement specification
2. Also, try to determine what are the functional and non-functional requirements are
3. Select the check boxes accordingly, and then click on the 'Submit' button

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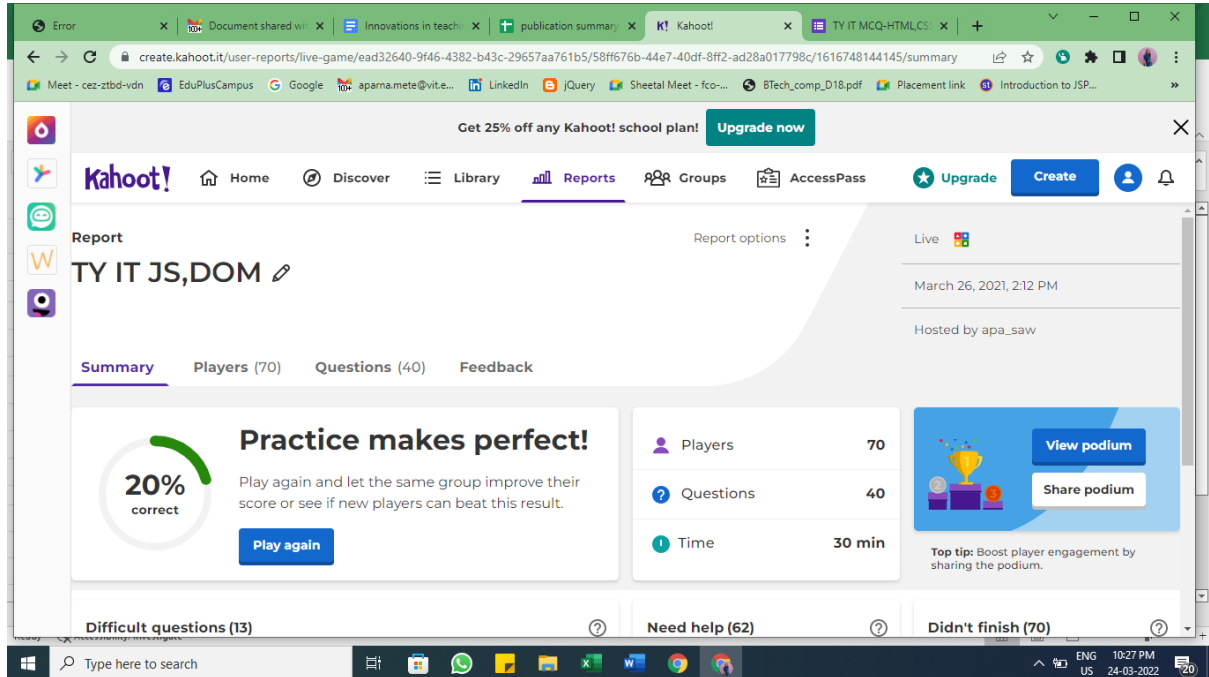
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Windows taskbar: Type here to search, 3:03 PM, 4/19/2021

1)Name of the Course:Web technology and Cloud Computing

2)Name of the Faculty:Mrs.A.R.Sawant

3)Innovative method practised:kKAHOOT quiz



1) Name of the Course: Internet of Things

2) Name of the Faculty: Mrs Deepali R Deshpande

3) Innovative method practised: To get more knowledge and explore the the concepts of IOT the guest session was conducted by an expert external faculty Prof. Dr. P N Mahalle. Also focussed on how IOT definitions are getting updated and requirements are creating big challenges in IOT.

The screenshot displays a Google Meet interface during a presentation. The main content area shows a slide with a Venn diagram illustrating the intersection of Cloud, Internet, and Mobile. The text on the slide includes:

- Trillion of End Points
- Billions of compute instances in public and private cloud
- Cloud
- Internet
- Mobile
- Calls for scalable and secure infrastructures and architectures
- Billions of IP devices in office & home
- Billions of mobile voice, and data devices

Below the slide, a list of participants is visible, including:

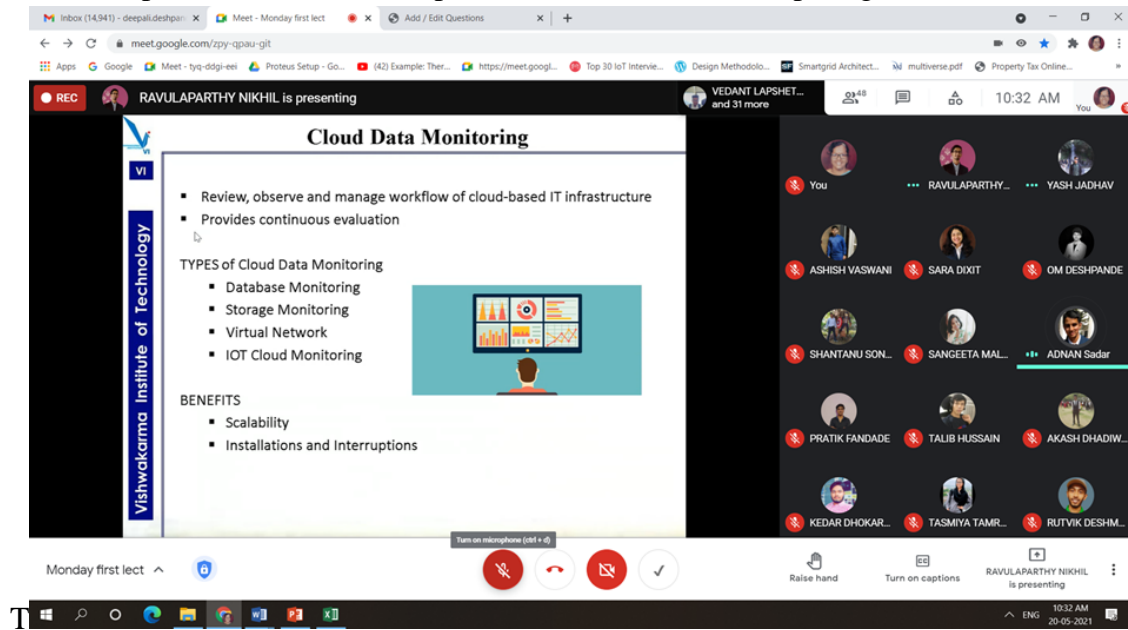
- You
- Parkshit N. Ma...
- PRASANNA AK...
- S ABHISHEK
- CHANCHAL MAL
- PALASH KOSE
- HIMALAY JAD...
- NEHA MOTKUR...
- Yashita Mahalle
- UTSAV TAYDE

The bottom of the screen shows the Windows taskbar with the time 04:26 PM on 15-05-2021.

1) Name of the Course: Internet of Things

2) Name of the Faculty: Mrs Deepali R Deshpande

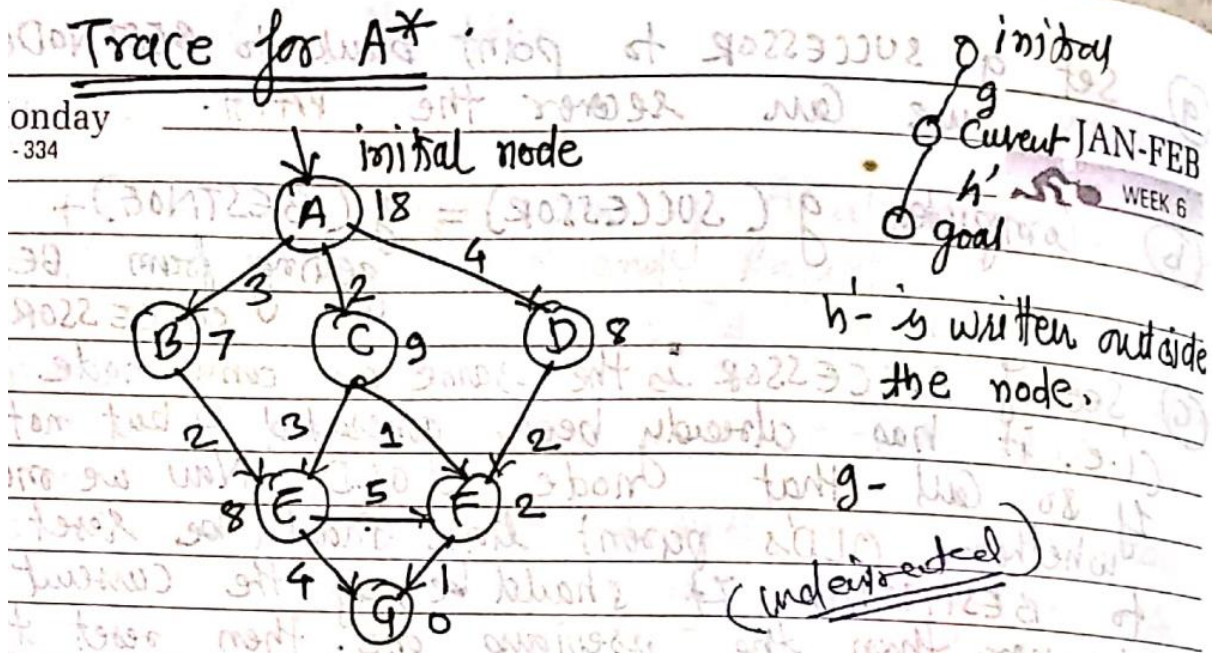
3) Innovative method practised: For motivating students, a group of students from the same class had presented on the concepts on the role of cloud computing in IOT to the entire class.



1) Name of the Course: Artificial Intelligence

2) Name of the Faculty: Dr. Priyadarshan Dhabe

3) Innovative method practised: Trace of algorithms A\* and AO\*





1)Name of the Course: CN [IT2008]: Computer Networks

2)Name of the Faculty:Ranjana S. Jadhav

3)Innovative method practised: Problem Solving,Case Study

Case Study

## A Case Study In Secure File Transfer: Implementing Secure FTP with SSL In Healthcare Organization

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LATKAR MEHUL SHAILESH,  
PAWAR BHARGAV  
SANDEEP,

(Vishwakarma Institute of Technology, Pune)

*Abstract*— Secure electronic file transfer are done between organizations has become essential for business transactions and communication. Healthcare organizations are no exception to this requirement. The ability to leverage the Internet to share protected health information also known as PHI or other sensitive information between health care organizations are going on increasing. From individual file encryption and VPN's (Virtual Private Networks), to a complete EDI (Electronic Data Interchange) system, a plethora of methods and applications exist for securing the transfer of files and data over the Internet.

*Keywords*—File Transfer Protocol (FTP), Secure Sockets layer (SSL), Virtual Private Network (VPN), Electronic data interchange (EDI).

functioned as a transparent gateway for data interchange between core back-end systems and provided limited access from the Internet from health care organization partners. The FTP server was a member server in a mixed Novell Netware/NT Domain environment where the NT Domain was interconnected to Novell Netware via a special redirector installed on the NT domain controllers.

### *B. Before-Methods Of Access*

Access to the FTP server was permitted not only via standard FTP from internal trusted systems, but also via network shares configured on the FTP server itself. Limited FTP access from the Internet was also devised. FTP access was permitted by any standard FTP client application on the trusted LAN with a valid FTP user name and password.

## Problem Solving:

### Ex 7

- A point-to-point satellite transmission line connecting two computers uses a stop and wait protocol and has the following properties
- Data Transmission Rate (DTR) = 64 kbps
- Frame Size = 2048 bytes
- One Way Propagation Delay = 180 ms  
Acknowledgement Size = 10 bytes
- Processing Delay of one computer = 25 ms
- Determine the throughput and Utilization.

### Sol 7

- Solution:
- Frame Transmission Time =  $(2048 \times 8) / 64000 = 0.256s = 256ms$
- Ack Transmission Time =  $(10 \times 8) / 64000 = 1.25 ms$
- Total time to transmit frame and receive ack is
  - = Frame Trans Time + Ack Trans Time + Proc Delay + 2xProp Delay
  - = 256 ms + 1.25 ms + 2x25 ms + 2x180 ms
  - = 256 ms + 1.25 ms + 50 ms + 360 ms
  - = 667.25 ms
  - = 0.667s

## Continued...

- Throughput =  $(2048 \times 8) / 0.667 = 24.563$  kbps  
a = Prop Time / Transfer Time =  $180 \text{ ms} / 256 \text{ ms} = 0.7$   
Utilization= $u = 1/(1+2a) = 1/(1+1.4) = 41.67\%$

1)Name of the Course: Image Processing and Computer Vision

2)Name of the Faculty: Dr. Premanand Ghadekar

3)Innovative method practised: Learning through Videos and Animation



## Interactive Games: Kinect

- Object Recognition:  
<http://www.youtube.com/watch?feature=iv&v=fQ59dXOo63o>
- Mario: <http://www.youtube.com/watch?v=8CTJL5IUjHg>
- 3D: <http://www.youtube.com/watch?v=7QrnwoO1-8A>
- Robot: <http://www.youtube.com/watch?v=w8BmgtMKFbY>



Prof P P Ghadekar, VIT Pune



## Smart Cars

manufacturer products consumer products

**Our Vision. Your Safety.**

rear looking camera forward looking camera side looking camera

• **EyeQ** Vision on a Chip [read more](#)

• **Vision Applications** Road, Vehicle, Pedestrian Protection and more [read more](#)

• **AWS** Advance Warning System [read more](#)

News

- Mobileye Advanced Technologies Power Volvo Cars World First Collision Warning With Auto Brake System
- Volvo: New Collision Warning with Auto Brake Helps Prevent Rear-end [read more](#)

Events

- Mobileye at Equip Auto, Paris, France
- Mobileye at SEMA, Las Vegas, NV [read more](#)

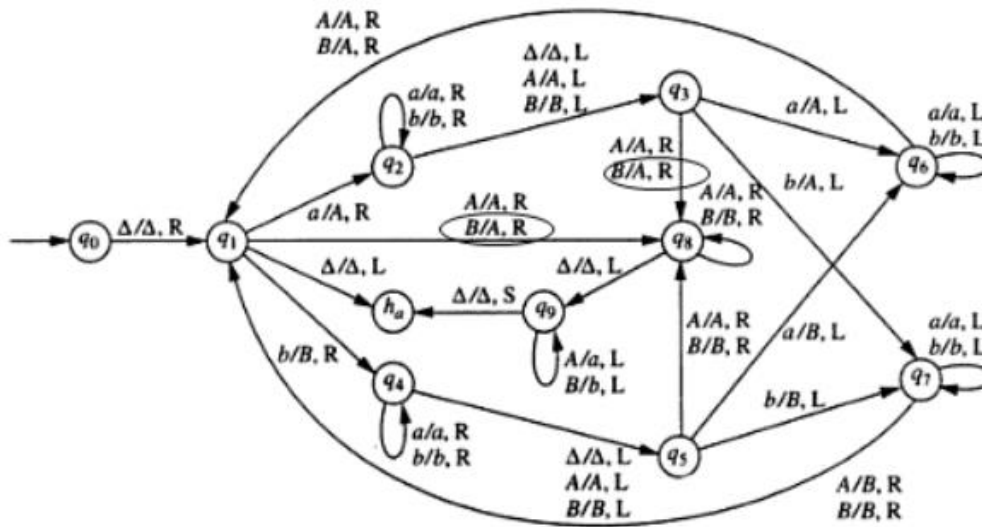
- Mobileye
  - Bought by Intel for 15 Billion dollars

Prof P P Ghadekar, VIT Pune

1)Name of the Course:Automata Theory

2)Name of the Faculty: Dr. K.B. Vayadande

3)Innovative method practised: Reversing String in TM



**Turing Machine to reverse string**