

# **Presentation on establishment of Smart Classroom and Digitization in Government Industrial Training Institutes**

# Current Challenges & Opportunities



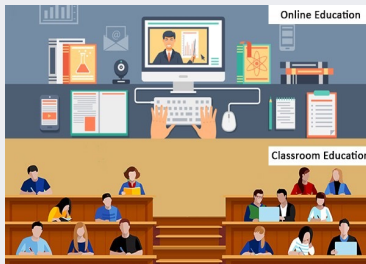
School Closure Has Mandated Online Learning



Most of the Students don't have access to Smartphones and Laptops



Systematic Approach for National Education Policy 2020



Supporting Platform for Online and Classroom Teaching Learning



Quality Education Delivery at Rural parts of State



Uniform Profile and Credit System for Students & Faculties

# **Proposed** **Scope of Work**

## Overview



# Proposed Scope of Work Overview

## Digital Initiative for Industrial Training Institutes In State

- Creation of Smart Classroom
- Digital content
- Facial Recognition Based Biometric Attendance
- TLMS

# Creation of Smart Classroom



# Layout Smart Classroom



## Components of Smart Classroom

- Interactive Flat Panel Display with OPS
- Digital Content
- Audio Speakers
- Biometric Attendance System
- Uninterrupted Power Supply
- Electrification, Deployment & Installation

# Proposed Smart Classroom

- Technology equipped with a specialized software, assistive listening devices and audio/visual capabilities in a classroom
- Access to infinite methods of teaching
- Learning and growing together as a unit.
- The opportunity to provide students with quality education
- Better concept understanding
- Improvement in reading and comprehension skills
- Gain in academic excellence



# Proposed Digital Content





# Proposed Digital Content

## Educational Content

- Syllabus approved by DGT for various trades
- Other relevant e-books and e-contents
- Illustration based videos
- Study reference materials and supplementary content

## Supporting Platform for Education Delivery

- Academic Management & Assessment
- Learning Management System
- Knowledge forum
- E-Library



Fitter

Electrician

Carpenter

Welder

Mechanic

Blacksmith

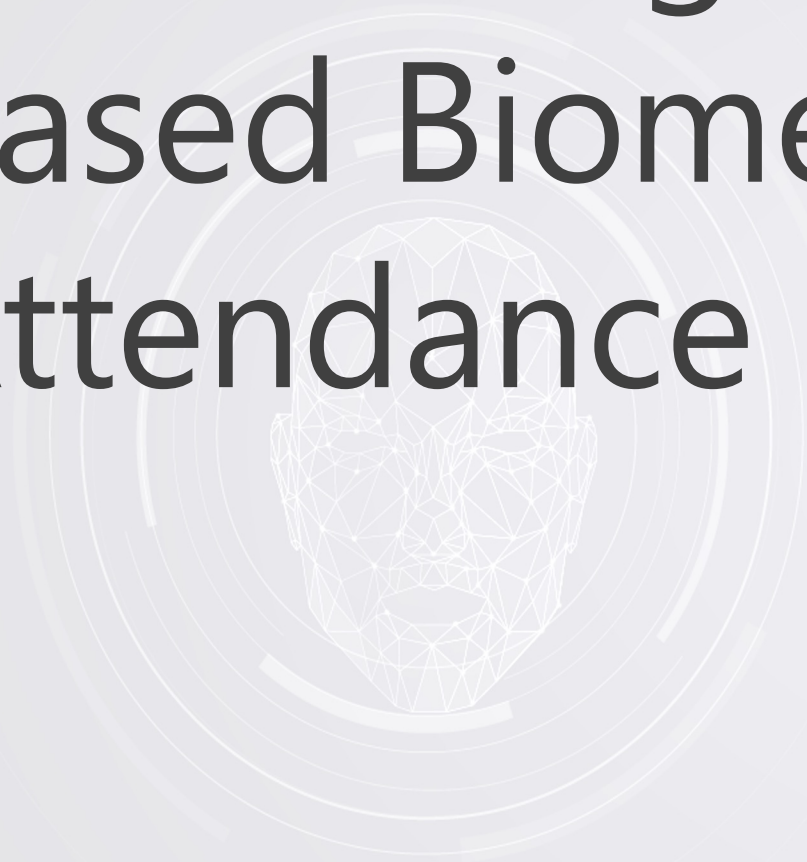
IT Engineer

Network  
operator

Plumber

Mason

# Face Recognition Based Biometric Attendance System



# Challenges With Traditional Attendance System



Laborious and  
Redundant activity



Wastage of precious  
teaching time



Human error  
Proxy attendance



Difficult manual  
record keeping



Lack of secured  
storage & retrieval



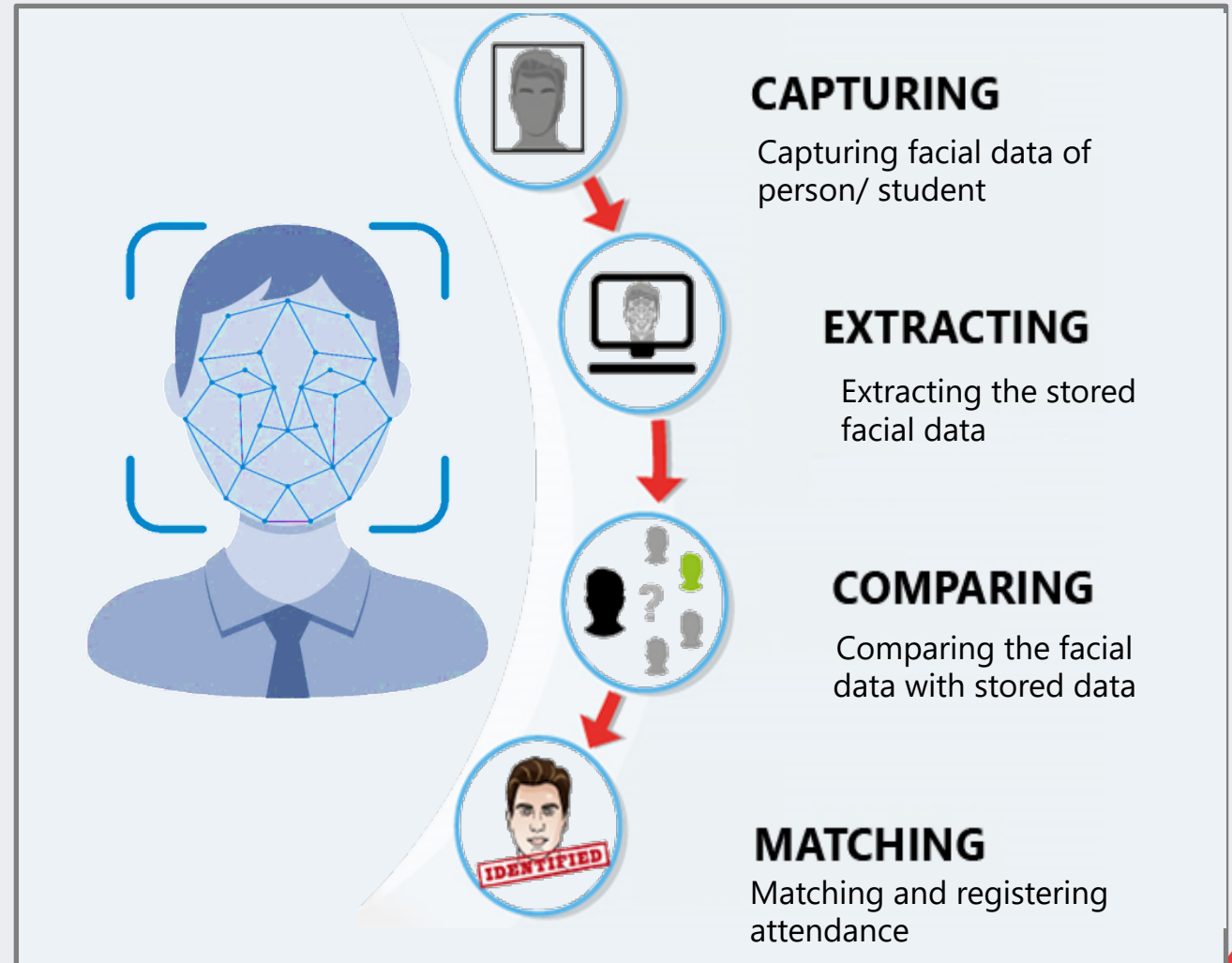
Lack of Instant  
Dynamic Reports



Difficult inter-departmental  
assessment


# **Solution:** Face Recognition Based Attendance

- Touch-less attendance system post COVID-19 pandemic
- Faster & automated attendance process
- Automation and simplification of attendance process
- Passive identification of students
- Avoid false / proxy attendance
- Centralized monitoring & reports on attendance
- AI based machine learning approach




# Methodology: How Face Recognition Works

Components:

 High Resolution Camera

 Software

 Computing Device

 Internet Connectivity

Image capturing by  
camera



Face detection &  
comparison with known  
database



Attendance Marking



Analytics and  
report generation

# Features

- Admin dashboard for centralized monitoring
- Students' and staff directory
- Multiple in-out
- Customizable attendance marking table
- Unknown person identification
- Reports and attendance data analytics
- Controlled access to system
- On demand live streaming of classroom
- Cloud based storage

# Benefits



Safe, Touch Less  
Solution in Covid Times



Live Monitoring of  
Classrooms



Time saving Automatic  
Attendance Marking



Eliminate Human Error  
Proxy Attendance



Quick Decisions Based  
on Analytic Insights



Monitoring for Teachers,  
Admin Staff and Parents



Instant Data Availability  
Dynamic Report  
Generation



Secured Cloud-Based  
Data Storage

## Extended Benefits

- Keep check on absenteeism & drop-out percentage
- Performance assessment of schools and teachers
- Keep eye on implementation of schemes like Mid Day Meals
- Over education outcome improvement



**Proposed**

# Teaching Learning Management System

**TLMS**

# TLMS: Digital Backbone of Education

- Process Standardization and Digitization
- Integrated modules support all processes of Lecture Delivery;
- Creating uniform, organized and efficient educational system

## Knowledge Support:

- New Topics and Discussions
- Student Groups & Group Study
- Educational Materials
- Online Notes & E Journals
- Study Planner
- Videos
- Internal Mailing and Communication

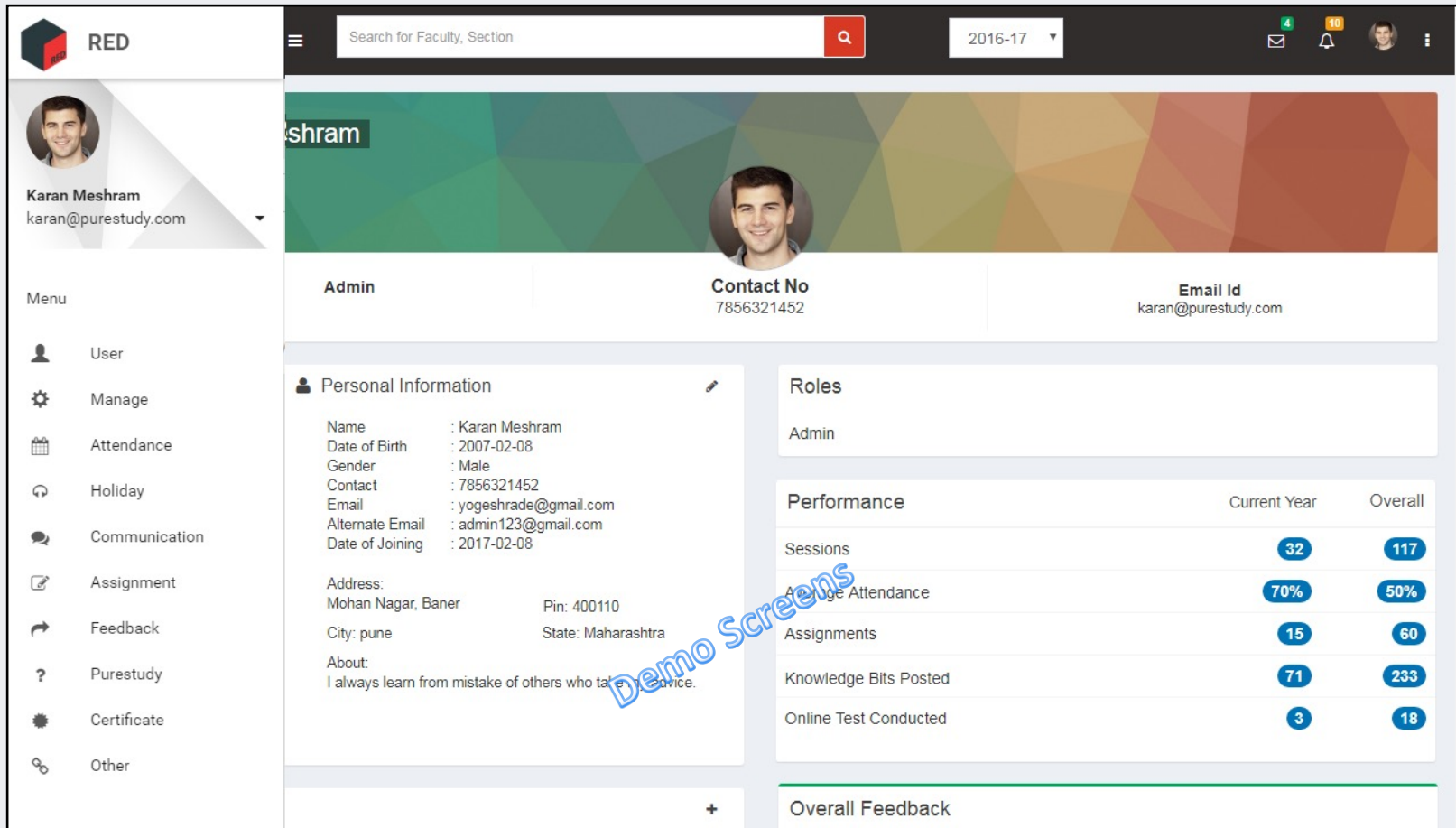
## Academic Management:

- Syllabus & Lecture Scheduler
- Attendance
- Assignment
- Understanding
- Feedback & Audit
- Class test & Online Exam
- Performance & Outcome
- Dynamic Reports

## Assesment / Exam:

Specific focus on vivas and objective based on the understanding and application of subject

# Demo: Student Profile




The screenshot displays a web application interface for a student profile. The top navigation bar includes a search bar, a dropdown for the year '2016-17', and notification icons. The left sidebar contains a menu with options like User, Manage, Attendance, Holiday, Communication, Assignment, Feedback, Purestudy, Certificate, and Other. The main content area shows the profile of Karan Meshram, with fields for Admin, Contact No, and Email Id. Below this, there are sections for Personal Information, Roles, and Performance. The Performance section includes a table with metrics for Sessions, Average Attendance, Assignments, Knowledge Bits Posted, and Online Test Conducted, comparing Current Year and Overall values.

Performance	Current Year	Overall
Sessions	32	117
Average Attendance	70%	50%
Assignments	15	60
Knowledge Bits Posted	71	233
Online Test Conducted	3	18











- One User One Account -
- All activities of any user are managed through single account -
- For Students, Faculties, Admins, HODs, Principals, etc. -

# Demo: Lectures



Lectures

2016-17



My

All

48

PHP  
Poly / Comp / SY / DIV A  
12

JAVA  
Poly / Comp / SY / DIV A  
5


C#  
Poly / Comp / SY / DIV A  
4

RDBMS  
Poly / Comp / SY / DIV A  
9

COBOL  
Poly / Comp / SY / DIV A  
10

Lectures

Topics




+  E

64%

Overall Rating

72%

Overall Attendance



1. Data abstraction, Database languages

by Yogesh Rade | Theory | Approved

75%

Rating

80%

Attendance

25/04/2017 - Tuesday | 12:00 PM - 12:30 PM | R103

2. Two/Three tier Architecture

by Yogesh Rade | Theory | Approved

66%

Rating

70%

Attendance

28/04/2017 - Friday | 12:00 PM - 12:30 PM | R103

3. Hierarchical Model

by Yogesh Rade | Theory | Approved

78%

Rating

84%

Attendance

02/05/2017 - Tuesday | 12:00 PM - 12:30 PM | R103

4. Enhanced ER Model

by Yogesh Rade | Theory | Approved

68%

Rating

73%

Attendance


05/05/2017 - Friday | 12:00 PM - 12:30 PM | R103

5. Normal forms: 1NF, 2NF, 3NF, BCNF

6. Data abstraction, Database languages

Demo Screens

# Demo: Assignment



Assignment


Search for Faculty, Section


2016-17


Faculty


4


10































### Study of Operational Amplifiers

SEM III | Theory | Published on : 2017-05-06 18:34:39

**Topics :** Concept of input/output impedance, Input bias current, offset input voltage, slew rate, CMMR

[Edit](#)  21



karishma patil

#### Description

An operational amplifier (often op-amp or opamp) is a DC-coupled high-gain electronic voltage amplifier with a differential input and, usually, a single-ended output. ... Op-amps may be packaged as components or used as elements of more complex integrated circuits.

#### References

Operational Amplifiers – G.B.Clayton (5th edition ) Newnes  
Operational Amplifiers Applications – G.B.Clayton

#### Attachments

- Concept of input/output impedance
- Input bias current


#### Instructions

Need to submit on time

#### Suggestions


[Extra Assignment](#)

- General understanding of topics:  
**Poor** - Need in depth assignment
- Feedback status  
**Poor** - Timely feedback needed
- Student likes status  
**Poor** Make assignment more participative



80

Submission : **40/50**  
Last Date : **2017-05-15**  
**10:30:48**

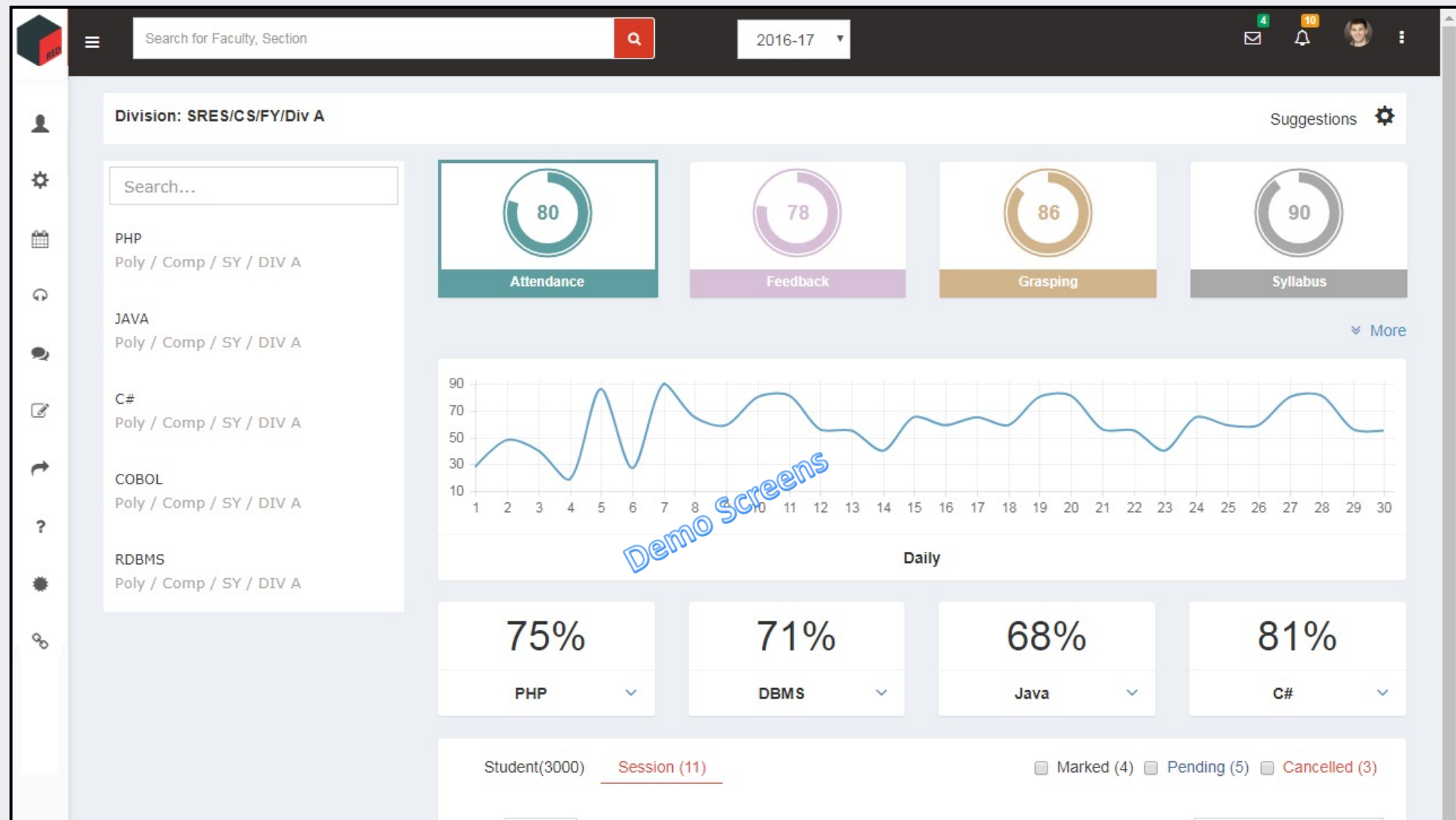


70

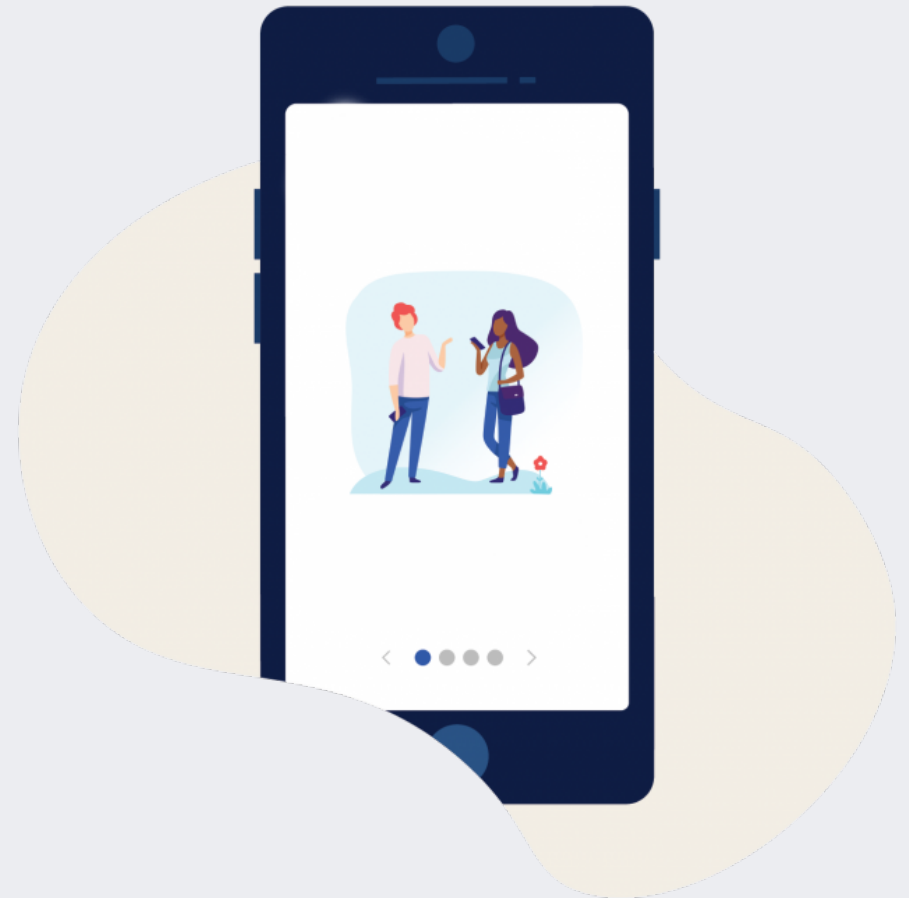
Feedback : **35/50**,  
Last Date : **2017-05-15**  
**10:30:48**

Student	Submit	Feedback	M / G	Remark	Action
Yogesh Rade	✓	✓	B	Good	<a href="#">Edit</a>

# Demo: Division-wise User Analytics



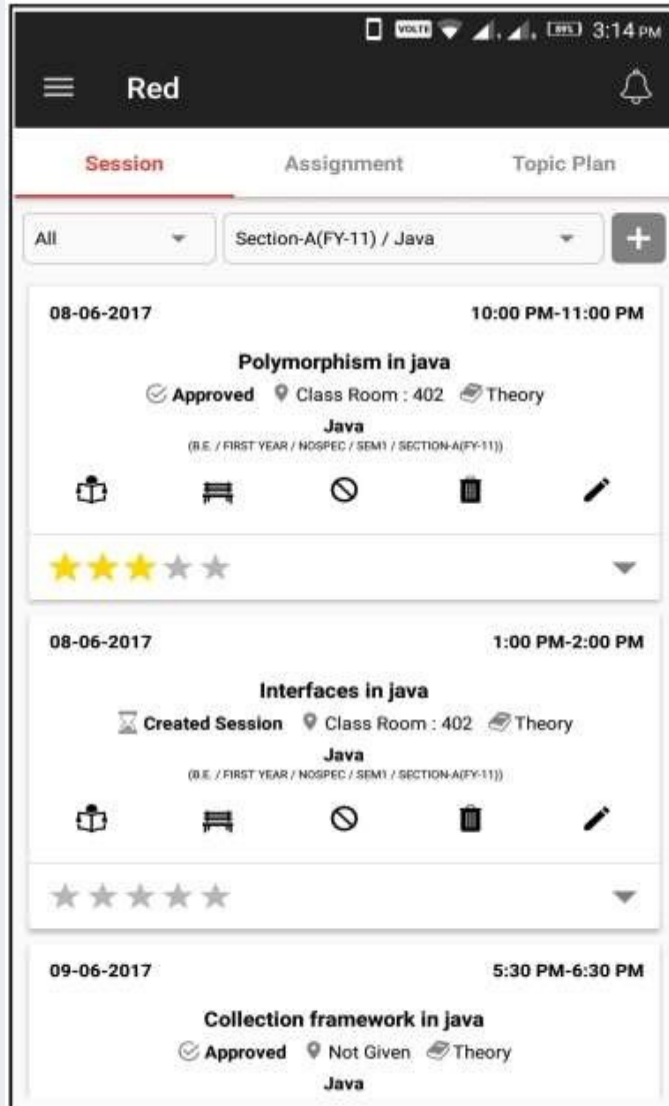
# **Proposed** **M-Campus** **TLMS**





# M Campus: Campus on mobile / devices

Supporting Lecture Delivery and Home Study



**Red**

Session Assignment Topic Plan

All Section-A(FY-11) / Java +

08-06-2017 10:00 PM-11:00 PM

**Polymorphism in java**

Approved Class Room : 402 Theory

Java (B.E. / FIRST YEAR / NOSPEC / SEM1 / SECTION-A(FY-11))

08-06-2017 1:00 PM-2:00 PM

**Interfaces in java**

Created Session Class Room : 402 Theory

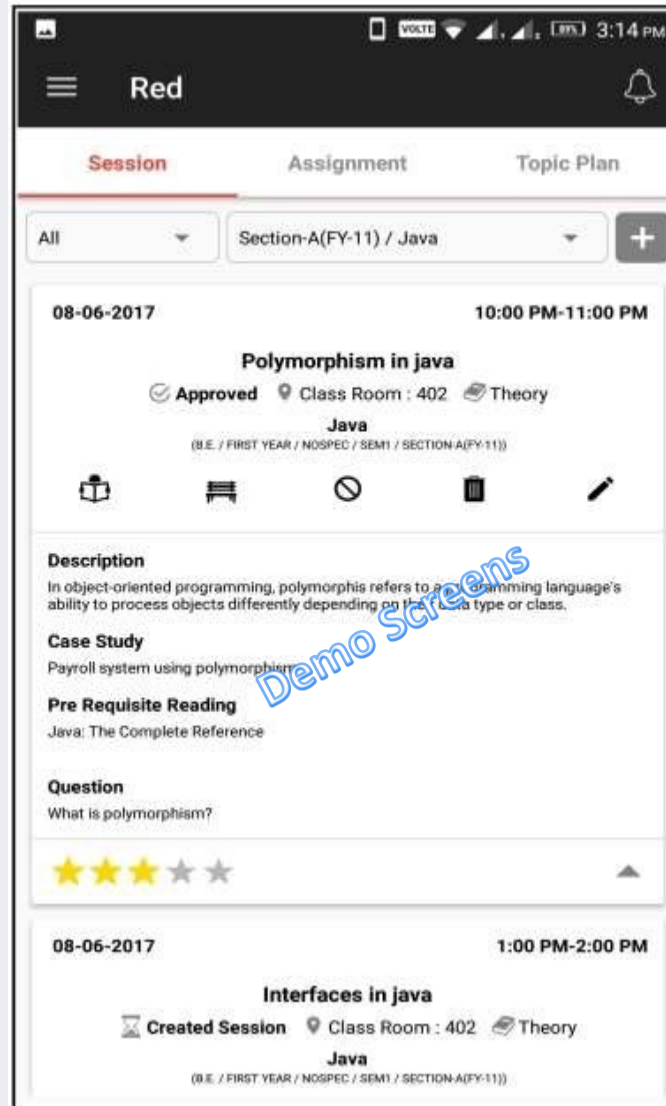
Java (B.E. / FIRST YEAR / NOSPEC / SEM1 / SECTION-A(FY-11))

09-06-2017 5:30 PM-6:30 PM

**Collection framework in java**

Approved Not Given Theory

Java



**Red**

Session Assignment Topic Plan

All Section-A(FY-11) / Java +

08-06-2017 10:00 PM-11:00 PM

**Polymorphism in java**

Approved Class Room : 402 Theory

Java (B.E. / FIRST YEAR / NOSPEC / SEM1 / SECTION-A(FY-11))

**Description**

In object-oriented programming, polymorphis refers to a programming language's ability to process objects differently depending on the data type or class.

**Case Study**

Payroll system using polymorphism

**Pre Requisite Reading**

Java: The Complete Reference

**Question**

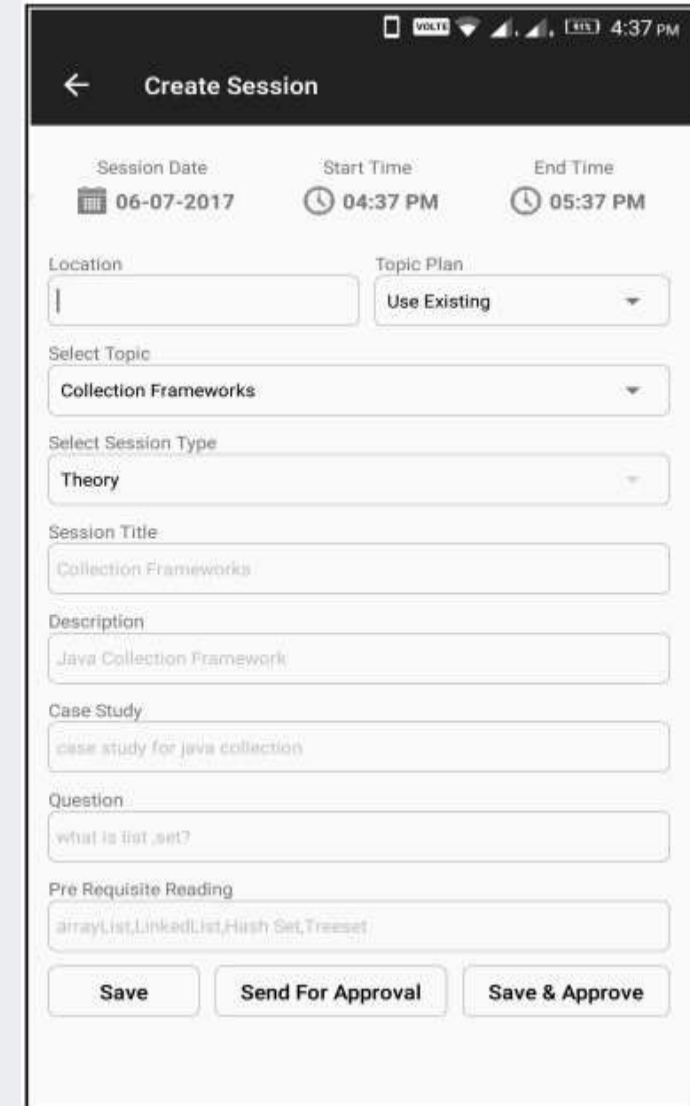
What is polymorphism?

08-06-2017 1:00 PM-2:00 PM

**Interfaces in java**

Created Session Class Room : 402 Theory

Java (B.E. / FIRST YEAR / NOSPEC / SEM1 / SECTION-A(FY-11))



**Create Session**

Session Date 06-07-2017 Start Time 04:37 PM End Time 05:37 PM

Location Topic Plan Use Existing

Select Topic Collection Frameworks

Select Session Type Theory

Session Title Collection Frameworks

Description Java Collection Framework

Case Study case study for java collection

Question what is list ,set?

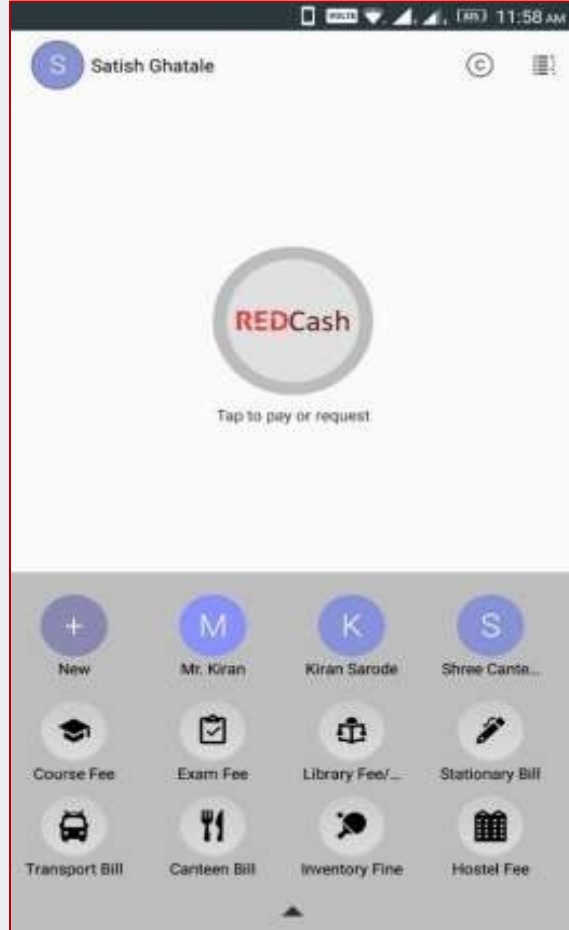
Pre Requisite Reading arrayList,LinkedList,Hash Set,Treeset

Save Send For Approval Save & Approve

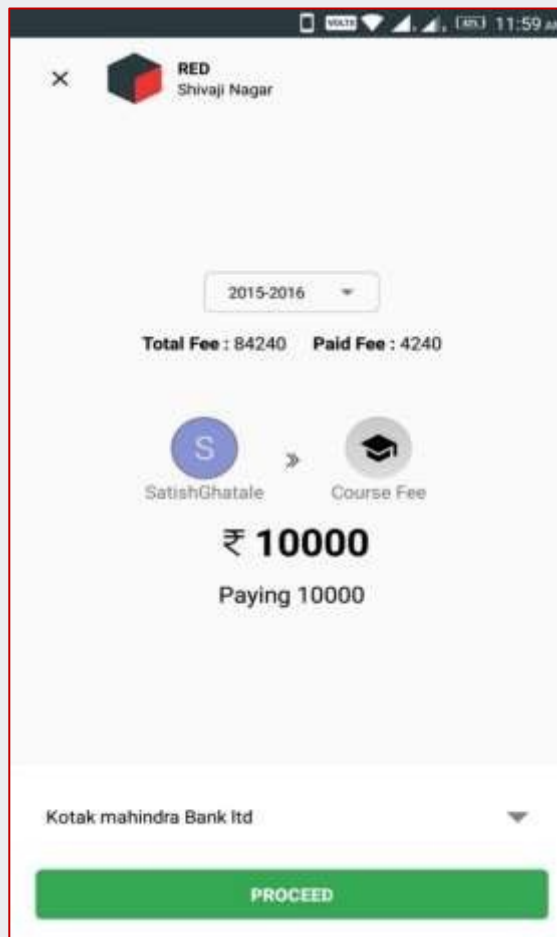


# Academic Payments:

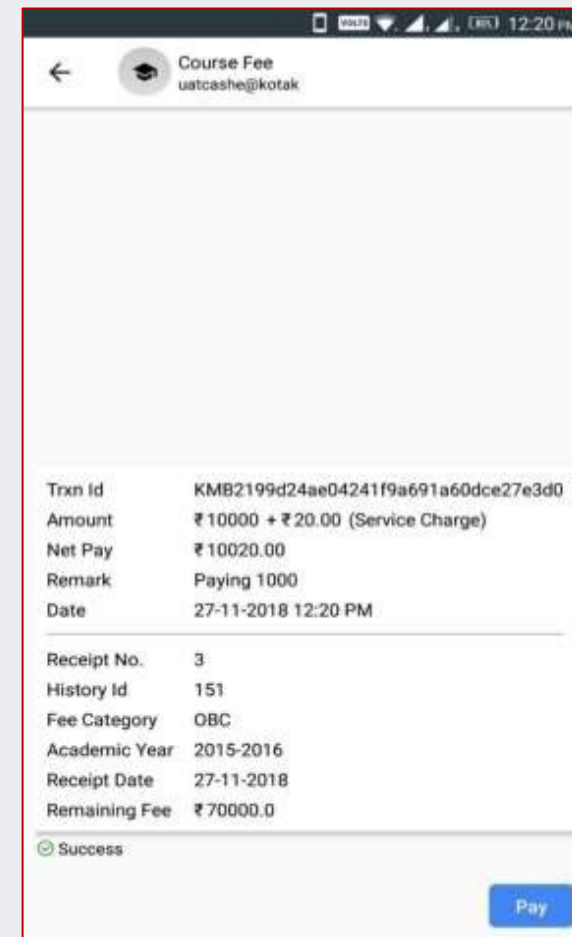
Integrated, Auto Calculation and Reconciliation Course Fees, Exam Fees, Stationary, etc.



Home Page



Campus Payments



Successful Transaction

# Value Proposal

Continuity in Education  
In current scenarios

Uniformity and  
Quality in Education

Establishing  
Credibility

Government Branding  
Via Education Model

Digital Backbone of  
Formal Education

Simple User friendly  
Rural Penetration

Deep Reach and  
High Impact

Improving  
Outcome

Barrier free  
Education

Cost of  
education

Employability  
Enhancement

**THANK YOU !**