

Due to file size constraints, few supporting documents have been included in the present document. However, all the reports relevant to the information provided in response to the metric 7.2.1, Best Practices, are available on the institute website.



Criteria 7.2.1 QIM

Best Practices at Vidyalankar Institute of Technology

VIT, over a period of 23 years, has developed many best practices by way of educational activities which have enhanced the quality of teaching and learning, two of which are:

1. Enhancing Digital Learning Resources
2. Capstone Projects

Title of the First Best Practice: Enhancing Digital Learning Resources

Objectives/intended outcomes:

1. To enhance digital learning resource to enable a smart learning environment
2. To effectively manage dissemination of academic resources

Underlying principles of this practice:

In sync with its name, VIT has always been promoting digitalization and active use of technology on the campus since its inception. One of **VIT's Mission Statements** itself is "*Facilitate creation and dissemination of knowledge through a digitally-enabled learning environment*" and this indicates how this best practice is ingrained in all our Institute academic activities. In line with Government of India's flagship initiative of **Digital India**, and also as mentioned in the **National Education Policy of 2020**, the existing digital platforms and ongoing ICT-based educational initiatives are optimized and expanded to meet the current and future challenges in providing quality education for our student community.

Contextual Features of Enhancing Digital Learning Resources:

1. User-friendly and can be accessed on and beyond the campus.
2. Save energy, time, and are eco-friendly.
3. Quick dissemination and remote access of information is enables.

Challenges/Issues:

1. Creating customized software and its continuous upgradation
2. Data and system security

Brief description about Enhancing Digital Learning Resources:

1. VIT takes pride in its **vProvisions** which were ideated and executed in the Incubation Centre by students and guided by faculty. The academic learning resources under vProvisions are as follows:

- **vLive:** A platform and discussion forum for dissemination of information.



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- **vPrint:** A web-based centralized printing service that allows users to give print jobs from any location to "Any Time Print" (ATP) stations at the Institute.
 - **vRefer:** A file transfer protocol (FTP) repository for students to access educational materials.
 - **E-learning:** Digitized course material integrated with images, animated videos, web links, MCQs, quizzes and games to make learning engaging.
 - **VIT Open Courseware:** VIT's Lecture Capture System is an LMS to help learners access lectures recorded live in class.
 - **vTutorials:** Software which generates random mathematical assignments.
2. The Institute has provided **campus –wide licensed version of Microsoft 365** - a suite of apps which include a host of apps such as Outlook 365, MS Teams, MS Word, MS Excel, MS PowerPoint, OneDrive which are extensively used by all students, faculty and staff. High-end personal computing systems/laptops and iPads were provided to faculty since many years to encourage active use of technology.
 3. The Institute has a **robust IT infrastructure** with a dedicated and well-trained systems administrators and staff. All classrooms are wifi enabled and are equipped with the necessary facilities like overhead projectors and lecture capture facility.
 4. **MS Teams.** Hands-on training was provided to all faculty and students and they were guided on the various functionalities. Concept videos were created and disseminated to students. Additionally, facilities associated with the app such as attendance capture through Insights, Class notebook for revision of concepts, recorded videos of lectures are available on MS Stream. **Use of various interactive web tools** by faculty like H5P, Kahoot, Quizziz, Edmodo, Mentimeter, Padlet, Plickers by teachers keeps the hybrid learning process engaging and interactive.
 5. **Coursera Response Program and edX** offered by Vidyalankar Institute of Technology benefitted many students and staff who made productive use of the lockdowns by pursuing MOOC courses from a library of 4000+ certification courses offered by eminent educationists from universities abroad. The Institute also has a local chapter for NPTEL and many faculty and students completed certification courses.
 6. Vidyalankar has the campus license of **MATLAB along with specialized 52 tool boxes.** With this license many of our students and staff members benefitted by utilizing the latest version of MATLAB in campus as well as outside the campus. These tool boxes help our students and faculty to enrich their learning with industry standard software and hone their skills in various domains.
 7. **Virtual Labs** were developed by our faculty in association with IITB. Virtual experiments were created. There is active use of virtual labs which are available online. Our IEEE Explore subscription offers access to research publications.
 8. vSpeak is **VIT's digital language lab.** As it is a browser-based lab, remote learning is also possible for enhancing communication skills of students.



Uniqueness:

- VITians can access most of the digital resources remotely.
- Most of the learning resources are unique platforms with respect to VIT and are developed in-house.

Constraints/limitations:

- As remote learning which happens on personal devices at various locations, sometimes connectivity issues may crop up.

Evidence of Success:

- **vLive:** Users on vLive have increased over the years
- **vRefer:** Repository of academic resources of around 200 courses
- **E-Learning:**
The number of e-books uploaded on the college repository include even ibooks and around 146 e-books are available
- **Open Course Ware (OCW):** Number of courses recorded and visits to OCW have increased.

Problems Encountered:

- Like with any new technology, there were few issues in users getting familiarized with the digital shift and adapting to blended learning.

Resources required:

- VIT is equipped with all the resources and infrastructure required for the enhancement of Digital Learning Resources which is now a well-established best practice at the Institute.
- Systems Helpdesk takes care of all IT related issues.

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Title of the Second Best Practice: Capstone Projects

Objectives/intended outcomes:

1. To encourage, guide and mentor students for working on impactful projects
2. To identify project ideas which can eventually be converted to products/IPR

Underlying principles of this practice:

Capstone Projects by VIT's Engineering students not merely to fulfil an academic requirement, but are an opportunity to apply their learning and technical knowledge in solving real life problems and designing real life products and services. Attendant benefits are real time lessons in team skills, project management skills, communication skills, and time management skills.



Contextual Features of Capstone Projects:

1. Project Domains and Themes are offered by each Department
2. Faculty Area of Specialization is mapped to project domains
3. Pool of Project Ideas is compiled in vIdeas
4. Timeline Chart/Roadmap is displayed so that the projects are on track
5. Opportunities are identified for students to display their project ideas through project competitions and technical publications

Challenges/Issues:

1. Accessibility of lab equipment as technical requirements may be diversified

Brief description about Capstone Projects:

Final Year and Capstone projects at VIT play a significant role in developing the technical abilities, project management and collaborative skills of students. There is a Standard Operating Procedure on undergraduate Final Year Projects in place with well-defined processes to monitor selection, progress and execution of projects. To ensure that continuous evaluation and incremental improvement happens in the project work, project guides conduct four reviews during a year. An expert panel of faculty within the Department is constituted to monitor the progress of Project Approval Process. They provide constructive feedback to Project Groups and Guides for enhancing project quality.

The Project Cycle goes ahead in the following sequence:

- Project Orientation
- Dissemination of Project Ideas
- Domain Expertise is identified and mapped
- Project Group formation and Guide selection
- Project idea approval
- Weekly monitoring followed by Review 1
- Weekly monitoring followed by Review 2
- Synopsis submission and Project Viva 1
- Analysis and Design
- Weekly monitoring followed by Review 3
- Demonstration of Working Model
- Weekly monitoring followed by Review 4
- Project Dissertation submission and Project Viva 2

Category-wise classification of projects i.e. innovative ideas, research based, application based, and product based is done. Projects can be selected from established as well as upcoming domains such as VLSI, Image Processing, Embedded Systems, IoT, Cloud Computing and many more. Students are encouraged to identify project ideas that use technology to benefit society. Some such prominent projects (e.g. Smart Farming, Solar powered Bicycle, Landslide Detection, etc.) have been featured in national dailies.



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Tantravihar is the annual inter-collegiate project exhibition and competition organized by VIT that provides a platform to present project ideas. In March 2022, Tantravihar was conducted as a state level intercollege competition for Engineering Degree Students of Maharashtra with a focus on Mumbai Region Institutes as a part of celebration of 75 Years of India's Independence. Projects were evaluated by industry experts from reputed organizations. The students interacted with the industry experts thus creating a deeper appreciation for creativity, innovation, adaptability and understanding for global education.

Uniqueness:

- **Project Diary** captures the formative assessment of the project cycle with record of four comprehensive reviews.
- **vIdeas** is an annual publication of the Final Year project ideas of students that have been nurtured after much deliberation from subject experts and industry mentors.

Constraints/limitations:

1. Technical Publications by students in reputed national and international journals

Evidence of Success:

One of the outcomes of the emphasis on problem solving abilities and project-based learning, incubated right from the First Year onwards in Innovation Lounge and various mini project exhibitions, is that our student teams have consistently been winning top prizes at **Smart India Hackathon while solving** industry level problems since past few years.

Problems Encountered:

A few projects may be identified as being less feasible because of non-accessibility necessary components/software in the market.

Resources required:

VIT is equipped with all the resources and infrastructure with well-equipped labs required for the successful execution of Capstone Projects which is now a well-established tried and tested process at the Institute.

The Best practice of Final Year Projects has been continuously evolving over the years and has proved to be a successful outcome-based effort at VIT.



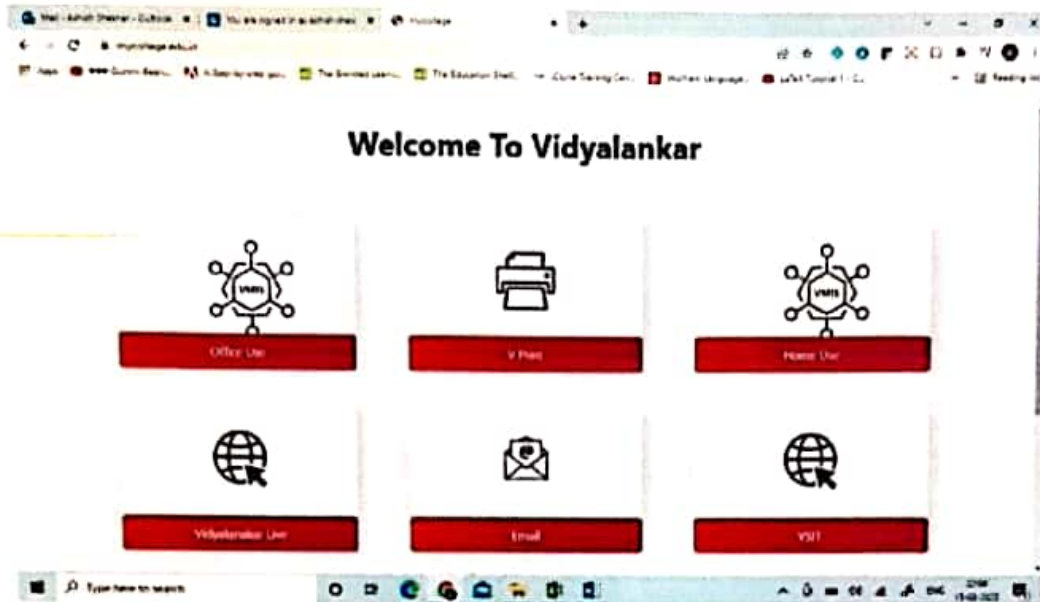
First Best Practice: Enhancing Digital Learning Resources

Below Document contains the relevant proofs for the best practices implemented for Enhancing Digital Learning Resources

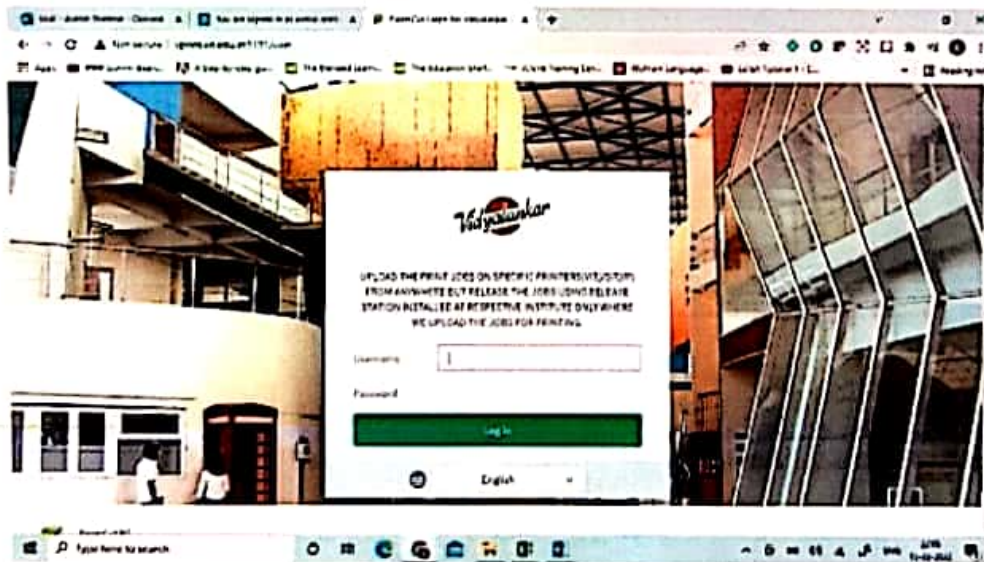


First Best Practice: Enhancing Digital Learning Resources

1. Vidyalankar Home Page (<https://www.mycollege.edu.in/>)

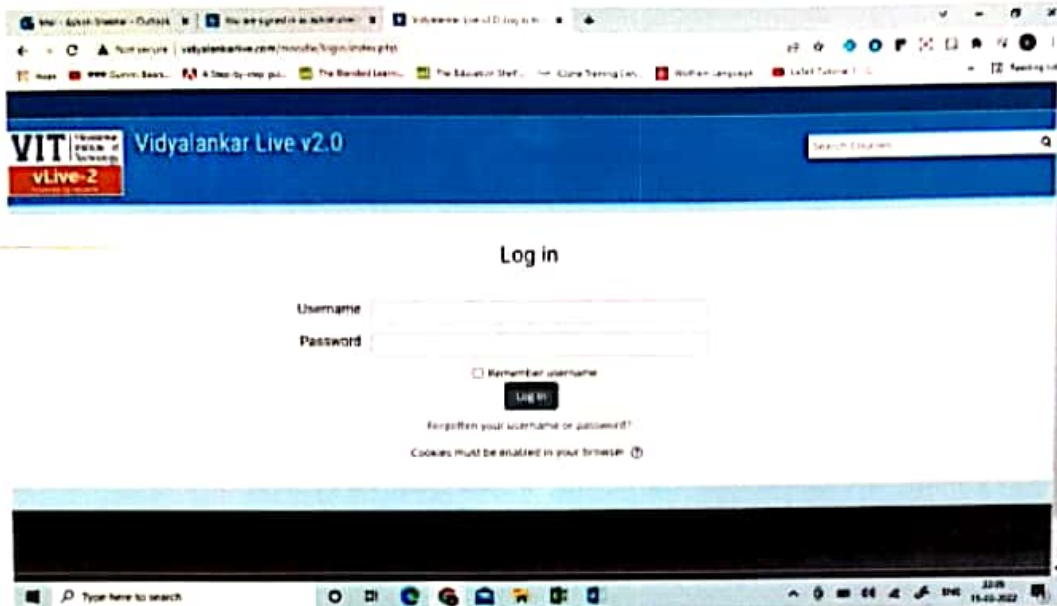


2. Vprint(<http://vprint.vit.edu.in:9191/user>)



3. Vlive (<http://vidyalankarlive.com/moodle/login/index.php>)





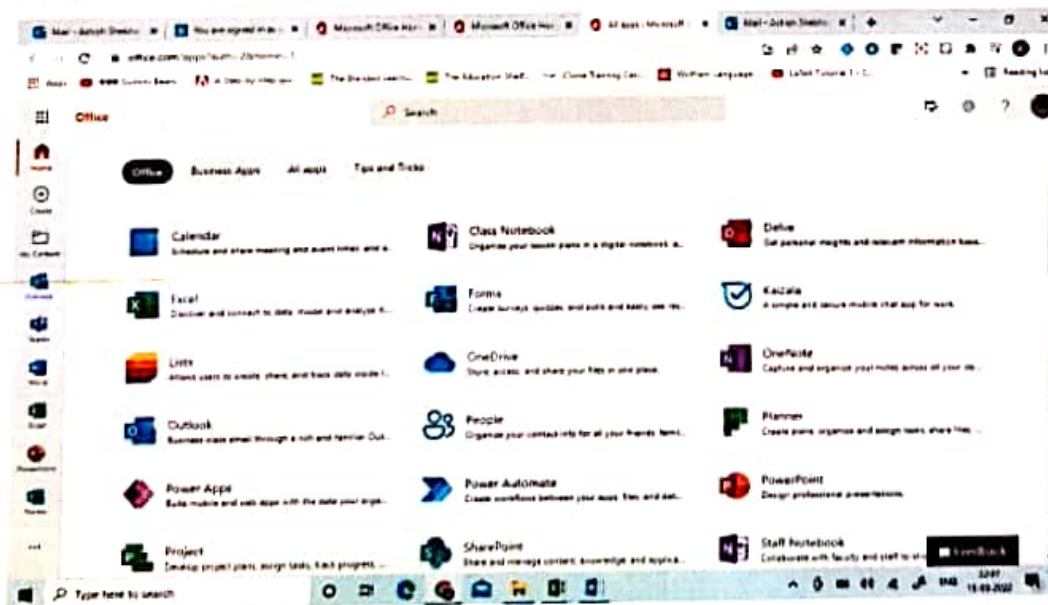
4. Vrefer (<http://www.vidyalankarlive.com/vrefer/index.php>)



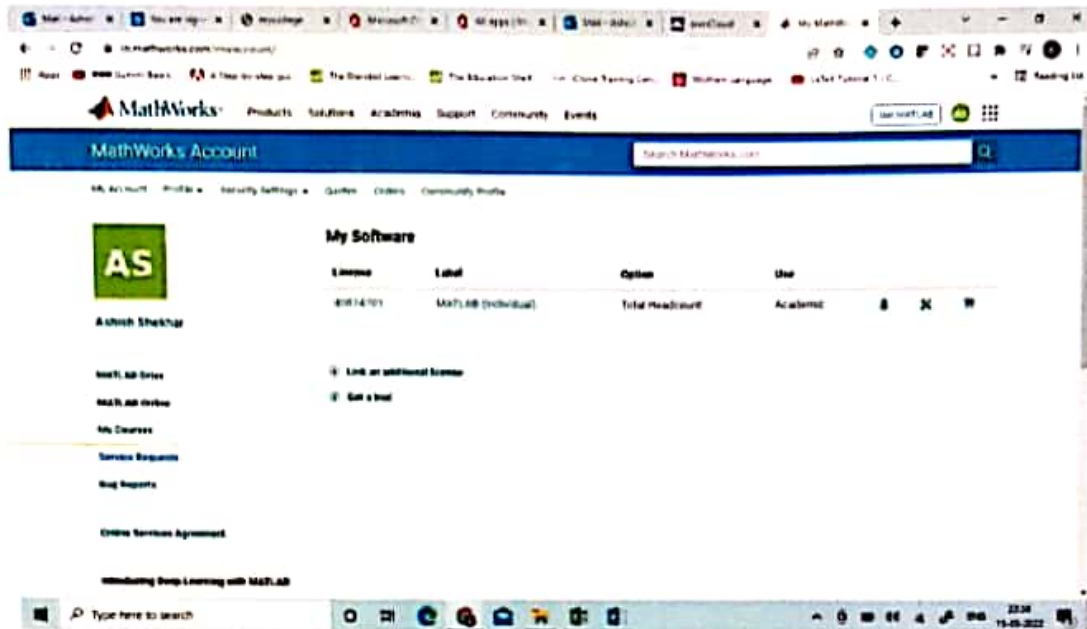
5. VIT-OCW (<http://a.impartus.com/login/#/>)



6. Microsoft Suite (<https://www.office.com/apps?auth=2&home=1>)



B. Campus Wide Matlab License:



Second Best Practice: Capstone Projects


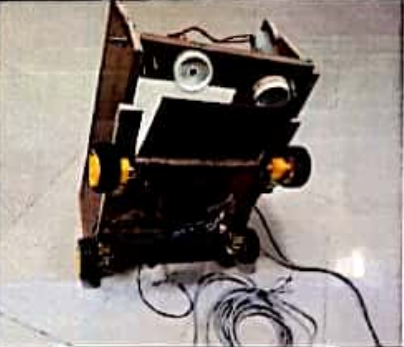


Below Document contains the relevant proofs for the best practices implemented for Capstone Projects



Second Best Practice: Capstone Projects


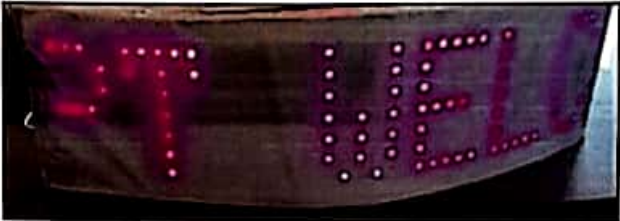


Evidences of some of the projects made by the students, students winning at Smart India Hackathon Competition, Project Diary, Tantravihar Competition.

Some Capstone projects made by students of Electronics, Bio Medical, Electronics and Telecommunication, Computer and Information Technology Students




<p>IoT- Orthotic Leg: A device helping to solve the problems of the person with gait issues</p>		
<p>Teni – Bot: An automatic robot used to collect the balls on the tennis court</p>		
<p>Air Quality Monitoring System: System developed to help the truck drivers working in coal mines to overcome air pollution issues</p>		
<p>FireBird Robot: Automatic robot used to pick and place objects</p>		



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<p>E – Toilet: Toilet developed to be used in rural areas where there is water scarcity</p>	
<p>Rolling LED Display: IoT based LED display</p>	
<p>vChef: Dosa Making Machine: Automatic Dosa making machine makes Dosa instantly from spreading the batter to rolling out the dosas</p>	
<p>vCart: Solar Vehicle: A solar powered driven car with solar panels mounted on the top</p>	



<p>Defense Vehicle: A rover used for defense applications</p>	
<p>vBike: Solar Bi-Cycle: Solar powered electric bicycle</p>	
<p>AmphiBOT: Multi Purpose Defense Vehicle</p>	



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VIT has always been a winner in Smart India Hackathon solving society and industry problems. Some of the glimpse of the Hackathon winners are as follows:

SIH 2019 Winners: The winners of Hackathon in SIH won the prize money of 1 lakh each team.



SIH 2020 Winners



**Vidyalankar Institute Of Technology
!!! Congratulates !!!**

SIH-2020 winning Team-Hardware Edition(Grand Finale)

**Problem Statement
was given by Ministry
of Housing & Urban
Affairs:**

**To build a
Government owned
crowd & passive
Surveillance System**



LAKSHITA PILLAY
(CMPN- Team Leader)



UTKARSH CHANDEL
(INFT)



AKASH PAWARA
(CMPN)



RITWIK MUKHERJEE
(INFT)



ANIKET RANDIVE
(ETIQ)



SUSHANT CHALAK
(CMPN)

**Prize
Money Won
INR: 1,00,000/-**

MENTOR



Prof. Prita Patil

FINAL EVALUATION



Coordinated By

Dr.Dhananjay Patel (SIH-SPOC) & Prof.Prita Patil (SIH-Coordinator)



VIT Vidyalkar Institute of Technology Accredited A+ by NAAC

Ministry of Women and Child Development Government of India

SMART INDIA HACKATHON 2020

#SmartIndiaHackathon
We're In! (Support, Support, Innovations Matter!)

Software Edition (Online Platform)
ONLINE PHASE
on
**1st - 3rd
August 2020**

Smart India Hackathon is a nationwide student-led development competition

Vidyalkar Institute Of Technology
!!! Congratulates !!!
SIH-2020 winning Team-Software Edition

Problem Statement was given by Ministry of Women and Child Development:
To build a Management Information System (MIS) for Rashtriya Mahila Kosh and IMOs (Intermediary Organizations)

CHITRAL PATIL (CMPN- Team Leader)
SHUBH JANGAM (ETRO)
KARAN AGRAWAL (ETRO)

URJA KHADILKAR (CMPN)
KIRAN RAI (ETRO)
SNEHA KHACHANE (CMPN)

MENTORS
FINAL EVALUATION

PROF. SUJA JAYACHANDRAN
DR. SACHIN BOJEWAR

Coordinated By
DR. DHANANJAY PATEL (SIH-SPOC) & PROF. PRITA PATIL (SIH-COORDINATOR)



SIH 2022 Winners



**CONGRATULATIONS!!!
FIRST PRIZE WINNERS AT
SMART INDIA HACKATHON 2022**



- **Organization:** Ministry of Electronics & Information Technology (MEITY)
- **Problem Statement:** Conversational Demographics Data Update System
- **Team Members:** Aniket Ambore, Dhanesh Kawad, Burhan Khan, Ambika Sanap, Soham Ghadge and Yash Pimple
- **Team Mentors:** Prof. Akshay Loke and Prof. Neha Kudu



- **Organization:** All India Council for Technical Education (AICTE)
- **Problem Statement:** Lack of information about Academic Activities in single platform
- **Team Members:** Ishita Tambat Shrey, Solanki, Omkar Birmole Ankit Singh, Kaveya Sivaprakasam and Amit Sharma
- **Team Mentors:** Prof. Amit Nerurkar and Prof. Sachin Deshpande

PREVIOUS SMART INDIA HACKATHON WINNERS



Project Diary

VIT | Vidyalankar Institute of Technology

Project Diary (UG)

Vision
To be a globally recognized engineering institute where learners are nurtured in a scholarly environment to evolve into competent professionals and researchers to benefit society.

Mission

- Evolve a curriculum which emphasizes on strong engineering fundamentals with the flexibility to choose advanced courses of interest and gain exposure to tools and techniques in contemporary subjects.
- Encourage a teaching-learning process in which highly competent faculty share a symbiotic association with students of repute.
- Facilitate creation and dissemination of knowledge through a digitally enabled learning environment.
- Develop academic and infrastructural facilities with modern equipment and other learning resources and encourage reciprocal sharing with other institutes through networking.
- Establish a Center of Excellence to enhance academia-industry partnership and work on collaborative projects.

Academic Year: **2017-18**

Department: **Electronics & Telecommunication**

Sl. No.	Roll Number	Student Name	Project Title	Project Guide
ET 108	1900A1002	Chirya, Prashant	Magnetics	Prof. Ramesh Patil
	1900A1003	Sanku, Pratik	Water	Prof. Ramesh Patil
	1900A1004	Pravara, Pratik	Water	Prof. Ramesh Patil
	1900A1005	Manoj, Vaidya	Water	Prof. Ramesh Patil

Vidyalankar Institute of Technology
Vidyalankar Campus, Vidyalankar College Marg,
Vijaya, Mumbai 400 017

The project diary captures the formative assessment of the project cycle with record of four comprehensive reviews.



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Tantra-Vihar: Tantravihar is the annual inter-collegiate project exhibition and competition organized by VIT that provides a platform to present project ideas.

Tantra-Vihar



**NAAC Criteria 7 Criteria
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Videas: is an annual publication of the Final Year project ideas of students that have been nurtured after much deliberation from subject experts and industry mentors.

