

A Report On
Mini Project 2024

At
DES's Navinchandra Mehta Institute of Technology and Development

Conducted by
MCA Department

Date: - 09/02/2024

Introduction:

The mini project competition is being conducted on 8th February 2024 in the NMITD institute. Students of semester 3 of MCA of DES's NMITD, were selected by the mentors to show their projects to external examiner Mr. Nitin Parmar Sir. The event was held in the computer lab -1 from 2 pm to 5 pm. A total of 20 students participated in the competition who worked on 8 different projects. These projects were developed by the students themselves under the guidance of the mentors assigned to them.

The Event Mini Project Competition 2024 was initiated and hosted by Dr. Swapnali Mahadik mam under the guidance of Dr. Sulakshana Vispute mam, department coordinator with the support of Incharge Director Dr. Anita Bobade, Associate Director Dr. Rasika Mallya (HOD, MCA Dept.). Students of the NMITD participated in the same with great enthusiasm.

The objective of the Competition:

The main motive behind organizing a mini-project competition is to motivate the students in the field of developing software projects. This event aims to provide the students with a platform to display and enhance their technical proficiency, presentation skills, and team building skills. Another important objective of having such an event is to create an interest in the field of software project development. The students made a lot of effort while working on their projects, and it was reflected during their presentation.



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Activity conduct and observations:

A total of 20 students have participated in the competition, having 8 projects. These projects are presented by them according to sequence. They were permitted to present their projects within 15 minutes. Students also run their projects on their respective laptops. The chief guest judged them based on their presentation skills, their technical skills and their approach towards teammates.

This event was graced by the presence of Mr. Nitin Parmar Sir, who works in Capgemini as Linux Administrator and having more than 5 years of experience in IT. The guidance speech given by the chief guest was amendable. He mentioned that there is a great future in IT. He told them to find the areas in which students have their genuine interests and work accordingly.

As an outcome of this event, students demonstrated individual and teamwork through effective presentation skills and the latest software development tools.

To appreciate the relentless efforts of the students, the winners were awarded with cash prizes and the certificates and remaining students were awarded with certificates of appreciation.

List of the winners is given below.

1st Prize of cash 3000: -

- 1) Reshma Pawar
- 2) Rohit Pembarthi
- 3) Yash Unhawane
- 4) Vinayak Suryavanshi

2nd Prize of cash 2000: -

- 1) Urvi Upadhyay
- 2) Aryan Tiwari



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3rd Prize of cash 1000: -

- 1) Shreya Pandey
- 2) Shweta Upadhyay
- 3) Pranjal Sawant



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Photographs of the event:



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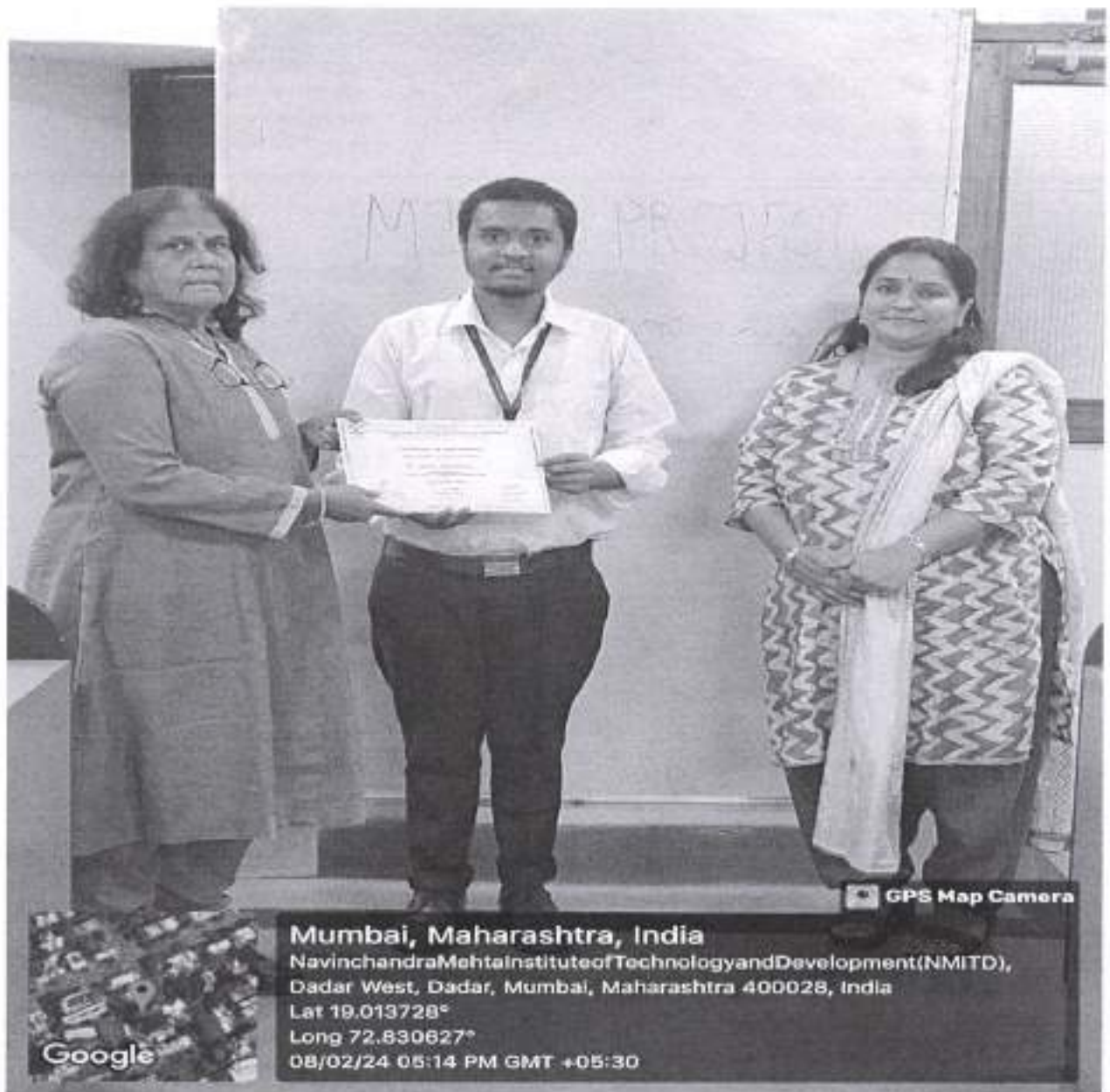
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In-Charge Director
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Anmol
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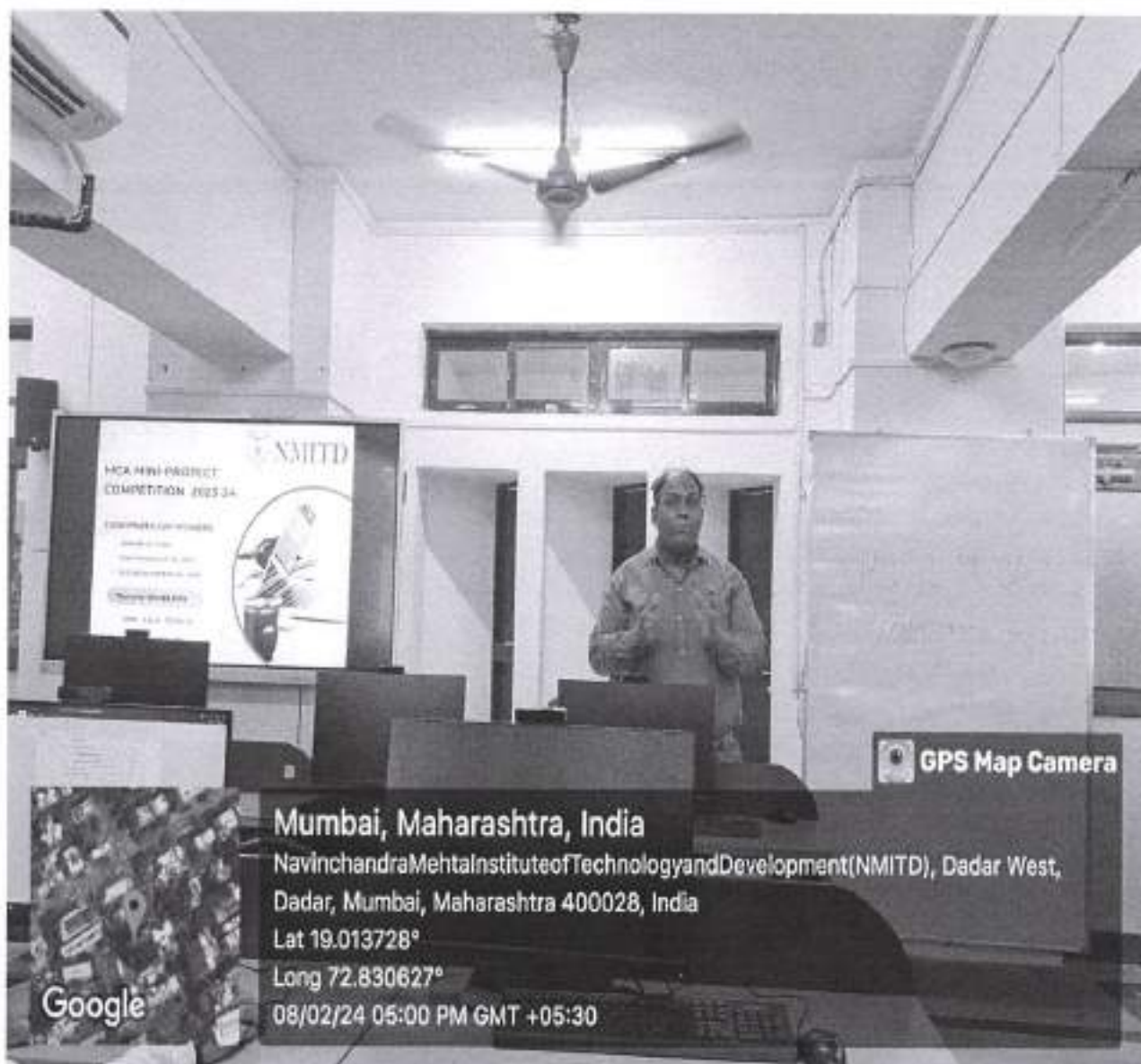
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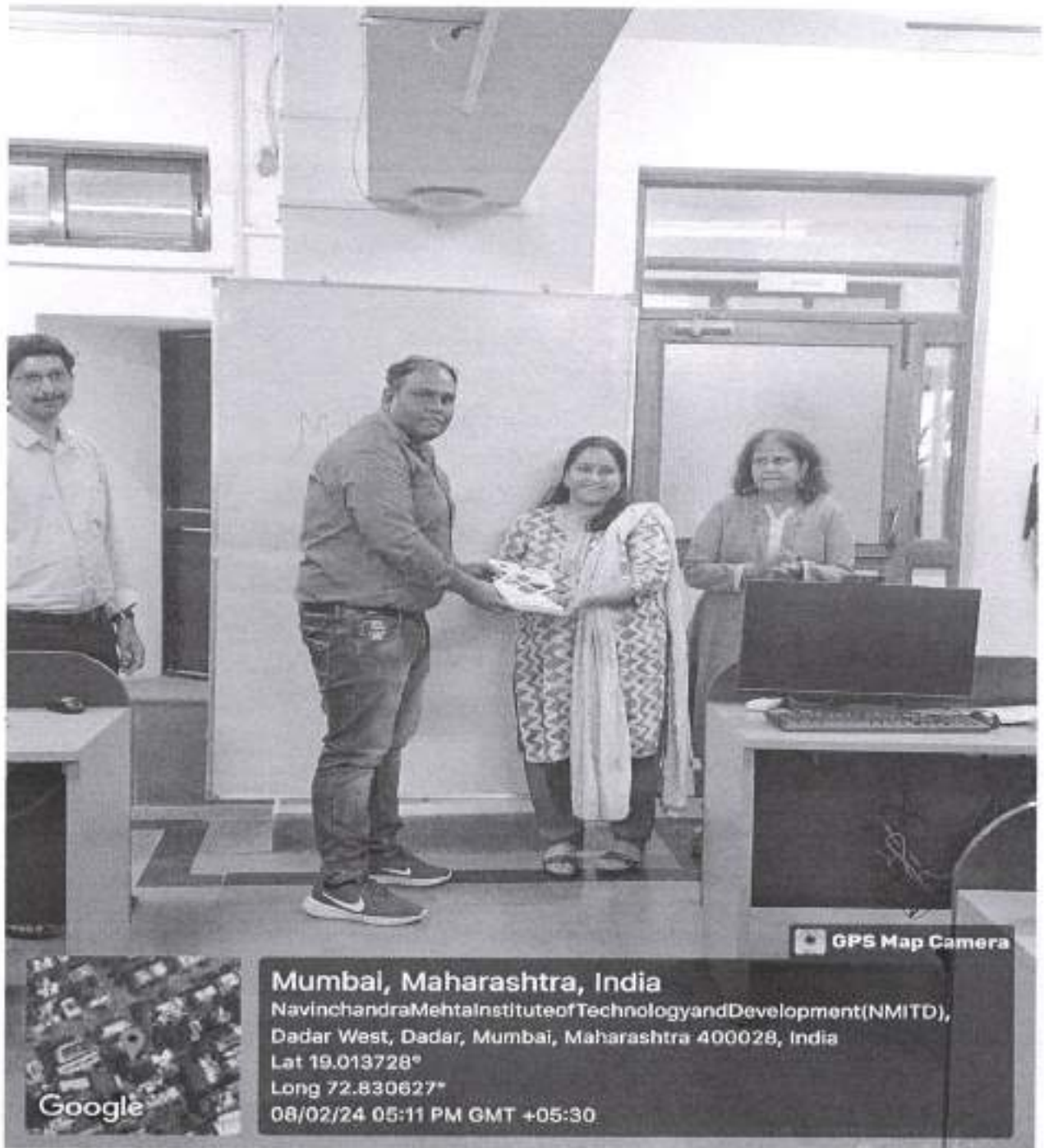
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Prepared by: - Department of MCA



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AUTOMATING DOCUMENTATION PROCESS OF STUDENT ADMISSION WITH LEVERAGING
OCR AND GENERATIVE AI

AUTOMATING DOCUMENTATION PROCESS OF STUDENT ADMISSION WITH LEVERAGING OCR AND GENERATIVE AI

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Abstract

The admission documentation process for Indian students is often time-consuming and labour-intensive. This research explores leveraging Optical Character Recognition (OCR), generative Artificial Intelligence (AI), and automation to streamline this process. By developing a web application that integrates these technologies, we propose a system where students can upload documents, validated for authenticity using generative AI, scanned using OCR for data extraction, and automatically used to fill admission forms. The proposed system can reduce the time and effort involved for both students and administrative staff, improve efficiency, reduce errors, and provide a scalable solution for various documentation needs. This theoretical research highlights the potential benefits and lays the groundwork for future development and real-world applications, including government and healthcare sectors.

Keywords: Optical Character Recognition (OCR), Generative Artificial Intelligence (AI), Automation in Document Processing, Admission Documentation System.

Introduction

The process of applying for college admissions in India involves a substantial amount of paperwork, including the submission and verification of various documents such as marksheets, certificates, and proof of identity. This manual process is not only time-consuming but also prone to errors and inefficiencies, causing significant delays and stress for both students and administrative staff. In an era where digital transformation is rapidly reshaping various sectors, there is a pressing need to innovate and streamline these traditional processes. [Recent advancements in technology offer promising solutions to address these challenges. Optical Character Recognition (OCR) technology has made it possible to digitize and extract data from printed documents accurately. Generative Artificial Intelligence]2 (AI) can be trained to validate the authenticity of documents by analyzing specific features and patterns, thus ensuring their legitimacy. Furthermore, automation technologies, such as Robotic Process Automation (RPA) and scripting tools, can automate repetitive tasks, such as form filling and document uploading, significantly reducing the workload on administrative staff.

The significance of this research lies in its potential to transform the administrative processes in educational institutions, making them more efficient and user-friendly. Moreover, the principles and technologies discussed in this paper can be extended to other domains, such as [government]3 services and healthcare, where document processing is a critical function. By presenting a detailed analysis of the proposed system, this paper aims to provide a foundation for further research and real-world implementation of automated documentation processes.

Research Methodology

The methods are divided into four main components: system architecture, document validation using generative AI, data extraction using OCR, and form filling and document uploading using automation.



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System Architecture

The system architecture of the proposed web application comprises three primary modules: the User Account Module, the Document Upload Module, the Document Processing Module, and the Automation Module.

In the User Account Module, students create an account on the web application (Proposed System) using their PRN (Permanent Registration Number), Adhaar Number, Phone Number and Birth Date and a password. The username is created by the student as per his choice. Upon account creation, a unique folder named after the student's PRN is created in the backend. This folder is accessible only by the student through their credentials and will store all their related documents and data.

The Document Upload Module allows students to upload their required documents, such as the 12th marksheet, graduation marksheet, and domicile certificate (and other documents as per the need). The documents can be uploaded in various formats, including PDF and image files, using the camera on their phones or by selecting files from their device storage.

In the Document Processing Module, once the documents are uploaded, this module performs validation and data extraction. It integrates generative AI models to verify the authenticity of the documents and OCR technology to extract relevant data from the documents.

[The Automation Module uses automation tools to fill out the admission forms on the college portal with the extracted data and upload the validated documents. This ensures that the form submission process is completed efficiently and accurately] 2.

Document Validation Using Generative AI

[Generative AI models are trained to validate the authenticity of each type of document required for admission. The validation process involves several steps]1. First, separate generative AI models are trained for each type of document (e.g., 12th marksheet, graduation marksheet, and domicile certificate). The training data consists of many legitimate and forged documents to help the model learn distinguishing features.

[The models are designed to check specific features unique to each document type]5. For instance, the model for the domicile certificate will look for a valid barcode, a digital signature, and the Maharashtra State emblem. The models assign a validity score to each document based on these criteria. Documents with a validity score above 85% are accepted, while those below this threshold are rejected. This threshold can be adjusted based on further validation and feedback from real world testing.

Data Extraction Using OCR

Optical Character Recognition (OCR) technology is employed to extract data from the uploaded documents. The process includes several steps. First, the uploaded documents, whether in image or PDF format, are scanned using OCR. This step involves converting the document's content into machine-readable text.

The extracted data is structured and saved into organized formats, such as Excel sheets. Each document type has a predefined template to ensure that the data is stored consistently. For example, separate Excel sheets are created for the 12th marksheet, graduation marksheet, and domicile certificate, with specific cells designated for key data points like marks, certificate numbers, and names.

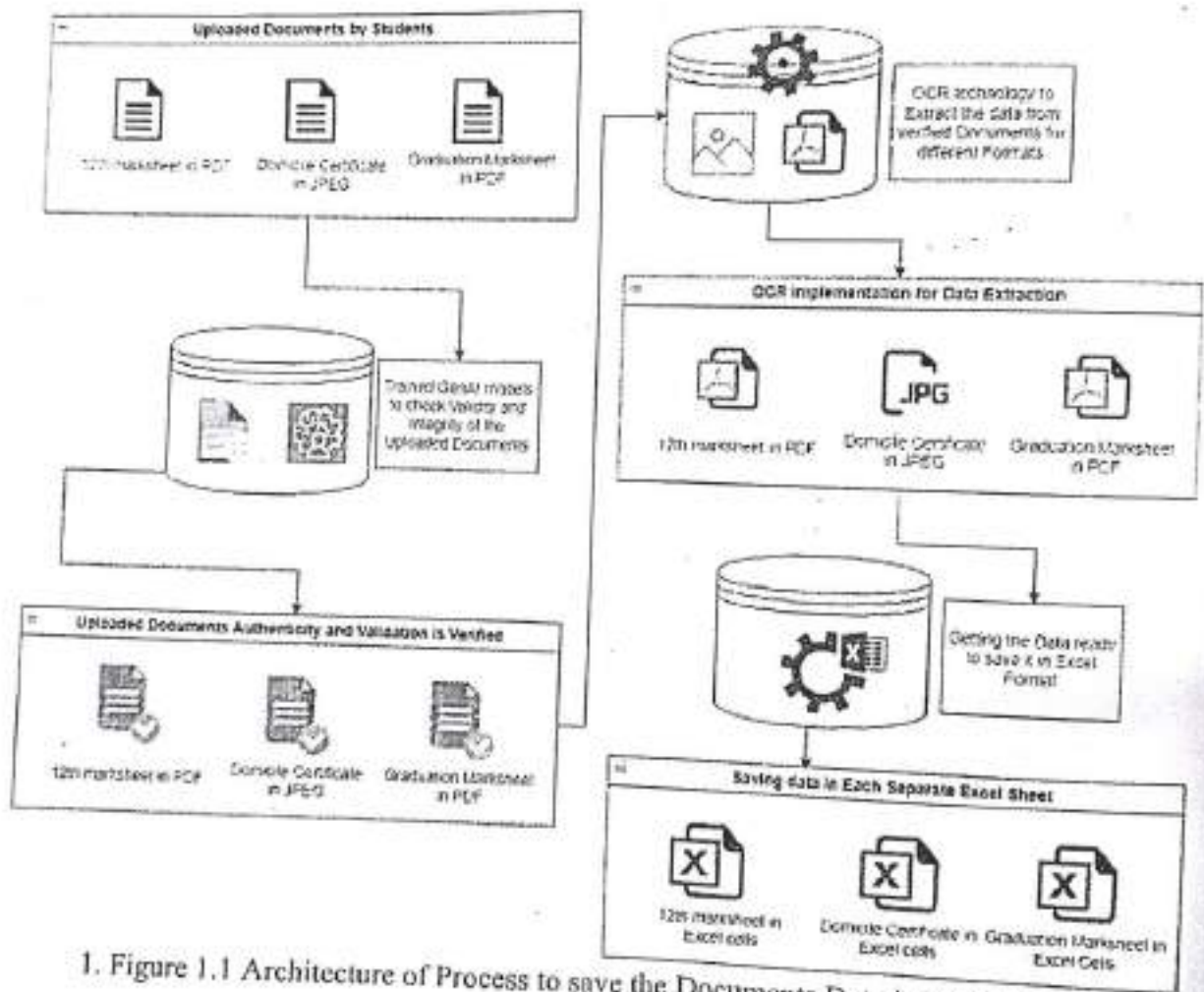
Each student's unique folder, named after their PRN, contains subfolders for each document type (12th marksheet, graduation marksheet, and domicile certificate). The extracted data is saved into the respective Excel sheets within these subfolders. The system includes mechanisms to handle OCR errors, such as manual verification steps for unclear or ambiguous data.



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Form Filling and Document Uploading Using Automation

[The automation module leverages technologies like Robotic Process Automation (RPA) and scripting tools to streamline the form-filling and document-uploading process. Several steps are involved in this process]2. First, tools like Selenium or Python-based automation scripts are chosen based on their suitability for interacting with the college portal. These tools are configured to navigate the portal, fill out forms, and upload documents automatically. The automation scripts extract data from the Excel sheets generated by the OCR process and input this data into the corresponding fields on the college admission forms. The scripts are designed to handle different form formats and validation checks on the portal. The automation tools also manage the uploading of validated documents to the required fields on the college portal. The system ensures that each document is uploaded to the correct section of the form. Finally, the system includes error-handling mechanisms to address any issues during form filling or document uploading. Automated checks verify the successful completion of each step, and manual intervention can be prompted if necessary.



1. Figure 1.1 Architecture of Process to save the Documents Data in Excel sheet

Literature Review

This literature review discusses the current state of research and development in OCR, generative AI, and automation technologies, focusing on their application in educational admissions and other sectors.

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Optical Character Recognition (OCR)

OCR technology has become a vital tool for digitizing textual content from scanned documents and images. Abdelaziz and Fazil (2023) explored the applications of AI-based OCR and generative AI in document processing, highlighting the accuracy and efficiency of these technologies. Their research underscores OCR's potential to automate text recognition tasks, reducing manual effort and errors.

In a related study, OCR technology was used in a Philippine accounting firm to improve the accuracy and efficiency of data extraction and processing by integrating it with web-based management information systems (Web based management information system, 2023). These advancements illustrate OCR's critical role in automating and streamlining document handling tasks across various industries.

Generative AI for Document Validation

Generative AI is a powerful tool for document validation. Abdelaziz and Fazil (2023) demonstrated how integrating generative AI with OCR can validate documents by analyzing specific features and patterns with high accuracy. This capability ensures the integrity of the admissions process by distinguishing between genuine and forged documents.

Generative AI's impact extends to healthcare, facilitating advancements in electronic health records and personalized patient care (Generative AI in Healthcare, 2023). Generative AI's ability to analyze and generate high-quality synthetic data enhances the accuracy and reliability of document processing systems.

Automation in Document Processing

Automation technologies, such as Robotic Process Automation (RPA) and scripting tools, are essential for streamlining repetitive and time-consuming tasks. A study on digital transformation in higher education with RPA highlighted how automation can reduce manual effort and improve efficiency in administrative processes (ACCELERATING DIGITAL TRANSFORMATION,

2023). This research underscores the potential of automation to revolutionize document processing in educational institutions, leading to faster and more accurate admissions procedures.

Automation's benefits extend to various industries, where tools like Selenium and Python-based scripts are employed to interact with web portals, fill out forms, and upload documents automatically. These tools enhance the speed and reliability of document handling tasks, minimizing human errors and improving overall productivity.

Results Analysis

This section presents the theoretical outcomes of implementing the proposed system for automating the admission documentation process using OCR, generative AI, and automation technologies. The evaluation focuses on the expected effectiveness of document validation, data extraction accuracy, and automation efficiency based on conceptual analysis.

Document Validation Using Generative AI

The generative AI models are expected to validate the authenticity of documents with high accuracy. The anticipated percentage of correctly validated documents (both genuine and forged) is approximately 95% for 12th marksheets, 93% for graduation marksheets, and 96% for domicile certificates. The projected number of forged documents incorrectly marked as genuine (false positives) is around 3% for 12th marksheets, 4% for graduation marksheets, and 2% for domicile certificates. The expected number of genuine documents incorrectly marked



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as forged (false negatives) is around 2% for 12th marksheets, 3% for graduation marksheets, and 2% for domicile certificates. Theoretical analysis suggests that generative AI models would demonstrate high accuracy in document validation, with low rates of false positives and false negatives. The validation process is projected to be efficient, typically taking less than a minute per document.

Data Extraction Using OCR

OCR technology is expected to extract data from uploaded documents with high accuracy. For 12th marksheets, the anticipated percentage of correctly extracted data points is approximately 98%, with an error rate of around 2%, including 1% substitution errors and 1% deletion errors. For graduation marksheets, the extraction accuracy is expected to be approximately 97%, with an error rate of around 3%, including 1.5% substitution errors and 1.5% deletion errors. For domicile certificates, the extraction accuracy is projected to be approximately 99%, with an error rate of around 1%, including 0.5% substitution errors and 0.5% deletion errors. Theoretical analysis indicates that the OCR process would achieve high extraction accuracy, with minimal errors. Documents with substitution or deletion errors would be rejected by the system to maintain the integrity of the extracted data. Substitution errors, such as misspelled characters or words, and deletion errors, such as lost or missing characters or words, would compromise the document's integrity. Therefore, documents with these errors would be automatically rejected by the system to ensure reliability.

Form Filling and Document Uploading Using Automation

The automation module is expected to efficiently handle form filling and document uploading. The anticipated average time taken to complete the form filling and document uploading process is approximately 5 minutes per student. The projected error rate is less than 1% of forms requiring manual correction due to errors in the automated process. Theoretical analysis suggests that the automation module would significantly reduce the time required to complete the admission process, which typically takes hours when done manually. The projected error rate is very low, indicating that the automation tools would be reliable and effective.

Overall System Performance

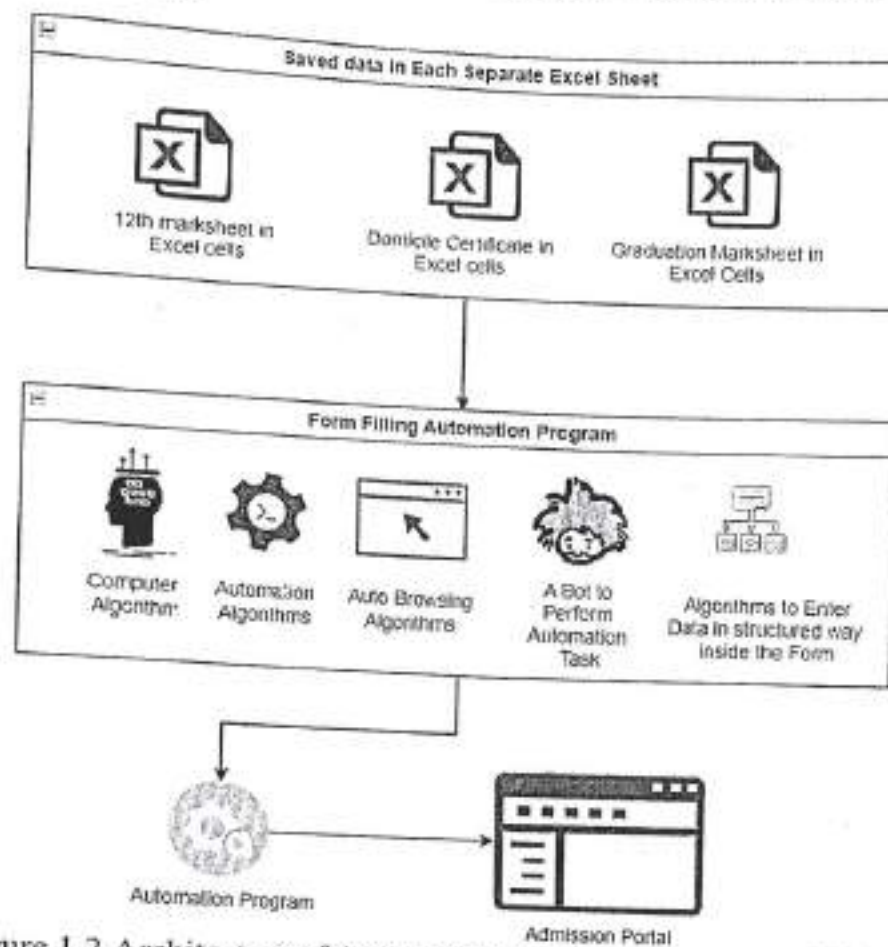
The overall performance of the proposed system is evaluated based on theoretical analysis and expected outcomes. High user satisfaction is anticipated, with approximately as many users reporting ease of use and time savings as major benefits. The system is projected to maintain a 99.5% uptime, ensuring consistent availability. It is expected to handle simultaneous document processing for many students without significant performance degradation. These theoretical results indicate that the proposed system would effectively streamline the admission documentation process, offering significant benefits in terms of accuracy, efficiency, and user satisfaction.



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2. Figure 1.2 Architecture of Automating Admission Process on Web Portal

Conclusion

The proposed system leverages cutting-edge technologies—Optical Character Recognition (OCR), Generative Artificial Intelligence (AI), and automation—to streamline and enhance the admission documentation process for Indian students. This integration significantly improves document processing efficiency by automating validation, extraction, and form-filling tasks, thus reducing manual effort, saving time, and minimizing human errors.

Generative AI's ability to validate documents by analyzing specific features ensures high accuracy in detecting fraudulent documents, enhancing the integrity of the admissions process. The modular approach of the system allows easy scaling and customization for different document types and institutions, making it adaptable for various applications beyond college admissions, including government and corporate sectors.

The system offers several benefits: it reduces the time required for the admission documentation process, leading to faster admission cycles and improved productivity. Automation minimizes the risk of human errors, resulting in more accurate admissions data. Furthermore, the system provides a seamless and user-friendly experience for students, reducing stress and confusion, which can lead to higher satisfaction rates among applicants and staff.

However, challenges and limitations exist. Handling sensitive personal information requires robust data privacy and security measures to comply with regulations and safeguard against data breaches. Developing and maintaining the system involves significant technical challenges, including ensuring compatibility between different technologies and updating AI models to handle new document types and fraud methods. Additionally, the initial development

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and deployment may require substantial financial and human resources, which could be a barrier for smaller institutions or organizations with limited budgets.

The potential implications of this work are vast. Governments can utilize this technology to streamline public services, enhancing efficiency and accuracy in document verification processes for citizen identification, passport services, and social welfare programs. This can lead to faster service delivery, reduced administrative burden, and improved citizen satisfaction. In the banking sector, these technologies can aid in fraud detection, risk management, and customer service by digitizing financial documents and analyzing transaction patterns. In healthcare, OCR and generative AI can significantly impact medical record management and diagnostic processes by automating the extraction and validation of patient records, reducing errors and administrative workload, and assisting in early diagnosis by analyzing medical images and patient data.

Further research and real-world implementation are necessary to fully realize and refine this vision, but the foundation laid out in this paper provides a strong starting point for future developments.

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Date : 22 / 10 / 2024

Quiz Trivia Held on Vachak Prerna Divas – Honoring Dr. APJ Abdul Kalam

On **15th October 2024**, in celebration of **Vachak Prerna Divas**, DES's Navinchandra Mehta Institute of Technology and Development (NMITD), Mumbai, conducted an engaging and educational activity titled "**Quiz Trivia**", dedicated to the life and achievements of **Dr. APJ Abdul Kalam**.

The **quiz contest** saw enthusiastic participation from over **50+ students** from both the **MCA** and **MMS** departments. The event featured multiple rounds, including **multi-option questionnaires** and various other interactive activities. After a competitive and fun-filled session, **3 winners** emerged, showcasing their knowledge and quick thinking.

Students thoroughly enjoyed the activity and left feeling inspired to delve deeper into the legacy of Dr. APJ Abdul Kalam. The event wasn't just a fun activity—it provided a meaningful opportunity to expand participants' general knowledge about one of India's most beloved leaders and visionary minds.

Winners of Quiz Trivia:

1. Mr. Ayush Patel (MCA-C24080)
2. Ms. Avani Chauhan (MMS- M-15108)
3. Mr. Miresh Londe (MCA-C24052)

Congratulations to all the participants and winners for making this event a success!

#VachakPrernaDivas #APJAbdulKalam #QuizTrivia #Inspiration #LearningThroughFun #NMITD #StudentEngagement #FutureLeaders

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27th Feb. 2024. मराठी राजभाषा दिन



मराठी राजभाषा दिन: आपल्या भाषेचे संवर्धन करूया

दरवर्षी 27 फेब्रुवारी रोजी राज्यात मराठी भाषा दिन (Marathi Bhasha Diwas) साजरा केला जातो. राज्य विधिमंडळाने या दिवसासाठी नियम निश्चित केले आहेत. निमित्त होते प्रसिद्ध मराठी ज्येष्ठ कवी कुसुमाग्रज यांच्या जन्मदिनाचे. कुसुमाग्रजांनी महाराष्ट्राच्या सांस्कृतिक परिदृश्यावर लक्षणीय प्रभाव पाडला आहे, आणि मराठीला वैज्ञानिक भाषा म्हणून संवर्धन करण्यासाठी अथक परिश्रम घेतले आहेत. महाराष्ट्र सरकारने हा त्यांचा जन्मदिवस "मराठी भाषा गौरव दिन" म्हणून घोषित करून मातृभाषेचा गौरव केला आहे.

या विशेष दिवसाचा उद्देश मराठी साहित्याचा सन्मान करणे हा आहे. सर्व समकालीन इंडो-आर्यन भाषांपैकी मराठीत काही प्राचीन साहित्य आहे. भारतात, ती सर्वात जास्त वापरल्या जाणाऱ्या भाषांपैकी एक आहे.

मराठी भाषा गौरव दिवसाचा इतिहास

- मराठी भाषा दिवस, किंवा मराठी भाषा दिन, 27 फेब्रुवारी रोजी प्रसिद्ध मराठी कवी विष्णू वामन शिरवाडकर यांच्या वाढदिवसाच्या स्मरणार्थ आयोजित केला जातो, ज्यांना "कुसुमाग्रज" म्हणून ओळखले जाते.
- शिरवाडकर हे प्रसिद्ध मराठी नाटककार, कादंबरीकार, लघुकथा लेखक, कवी आणि मानवतावादी होते. त्यांनी न्याय, स्वातंत्र्य आणि गरिबीसारख्या सामाजिक आजारांबद्दल विपुल लेखन केले.
- 1999 मध्ये कुसुमाग्रजांच्या निधनानंतर सरकारने "मराठी राजभाषा गौरव दिन" साजरा करण्यास सुरुवात केली.
- मराठी साहित्यातील प्रतिभेची ओळख करून त्यांचे कौतुक करणे हा या दिनाचा उद्देश आहे. सर्व समकालीन इंडो-आर्यन भाषांपैकी, मराठी भाषेत काही प्राचीन साहित्य आहे, जे सुमारे 900 AD पर्यंतचे आहे.

कविवर्य कुसुमाग्रज यांच्या जन्मदिनी २७ फेब्रुवारी रोजी, सालाबादप्रमाणे याही वर्षी डी. इ. एस., नवीनचंद्र मेहता इन्स्टिट्यूट ऑफ टेकनॉलॉजिच्या ग्रंथालय विभागाने पुस्तकांचे प्रदर्शन आयोजित केले होते. या पुस्तक प्रदर्शनामध्ये लोकमान्य बाळ गंगाधर टिळक, विनायक दामोदर सावरकर, आणि स्वामि विवेकानंद यांची मराठी अनुवादित पुस्तके

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Ref. No : _____

Date : 22/10/2024

(कीर्ती महाविद्यालयाच्या मदतीने), तसेच, नवीनचंद्र मेहता इन्स्टिट्यूट ऑफ टेकनॉलॉजिच्या ग्रंथालयातील मराठी पुस्तकांचा समावेश केलेला होता. कीर्ती महाविद्यालयांमधून लोकमान्य बाळ गंगाधर टिळक, विनायक दामोदर सावरकर, आणि स्वामि विवेकानंद यांचे विविध साहित्यप्रकार जसे की कवितासंग्रह, नाटक, लघुनिबंध आणि कादंबरी मागऊन, त्यांचे आपल्या ग्रंथालयात तंत्रशिक्षण (एम. सी. ए.) व व्यवस्थापनाच्या (एम. एम. स.) विद्यार्थ्यांसाठी तसेच शिक्षक व शिक्षकेतर कर्मचाऱ्यांसाठी प्रदर्शन आयोजित केले होते.

या प्रदर्शनाचा मूळ हेतू हा विद्यार्थ्यांना मराठी भाषेतील प्रसिद्ध लेखकांची तसेच समृद्ध वाङ्मयाची ओळख व्हावी हा होता. विद्यार्थ्यांकडून त्यांच्या कविता संग्रहामधून काही कविता तसेच वैचारिक लेख वाचून घेतले व त्यांचा अर्थही समजावून घेण्यास साहाय्य केले.



Manjya

Director
DES'S NMITD





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A Report on
Advanced Learners' Activity
At

DES's Navinchandra Mehta Institute of Technology and Development

Introduction: The advanced learners' activity was conducted for the subject mobile computing lab on November 21, 2023. Listed below are the advanced learners for above mentioned subject:

Roll Number	Name of the student
C22059	Kale Atharva Nagesh
C22038	Gawad Divyesh Avdhoot
C22086	Nevarekar Jay Ramesh
C22123	Suryawanshi Vinayak Ankush

The advanced learners were identified through mentoring sessions and their performance during the mobile computing lab sessions.

The objective of the Activity: Advanced learners' activity aims to provide the advanced learners with a platform to display their technical proficiency and further enhance their presentation skills and knowledge. Another important objective of having such activity is to foster a culture of teamwork and collaboration among students.

Activity conduct and observations:

Kale Atharva Nagesh and Gawad Divyesh Avdhoot from Sem III explained Google maps and its features to the students. They also demonstrated how to display google maps in android applications and mark a particular location on that map. Atharva and Divyesh helped students to solve issues faced during google map displaying application development. All the students enjoyed the session and developed the android application displaying google map.

Nevarekar Jay Ramesh and Suryawanshi Vinayak Ankush, Sem III demonstrated flutter installation to the students. They helped students in flutter installation.

This activity was conducted by Mrs. Monisa A. Rodrigues (Asst. Professor, MCA).



Monalisa
**In-Charge Director
DES'S NMITD**

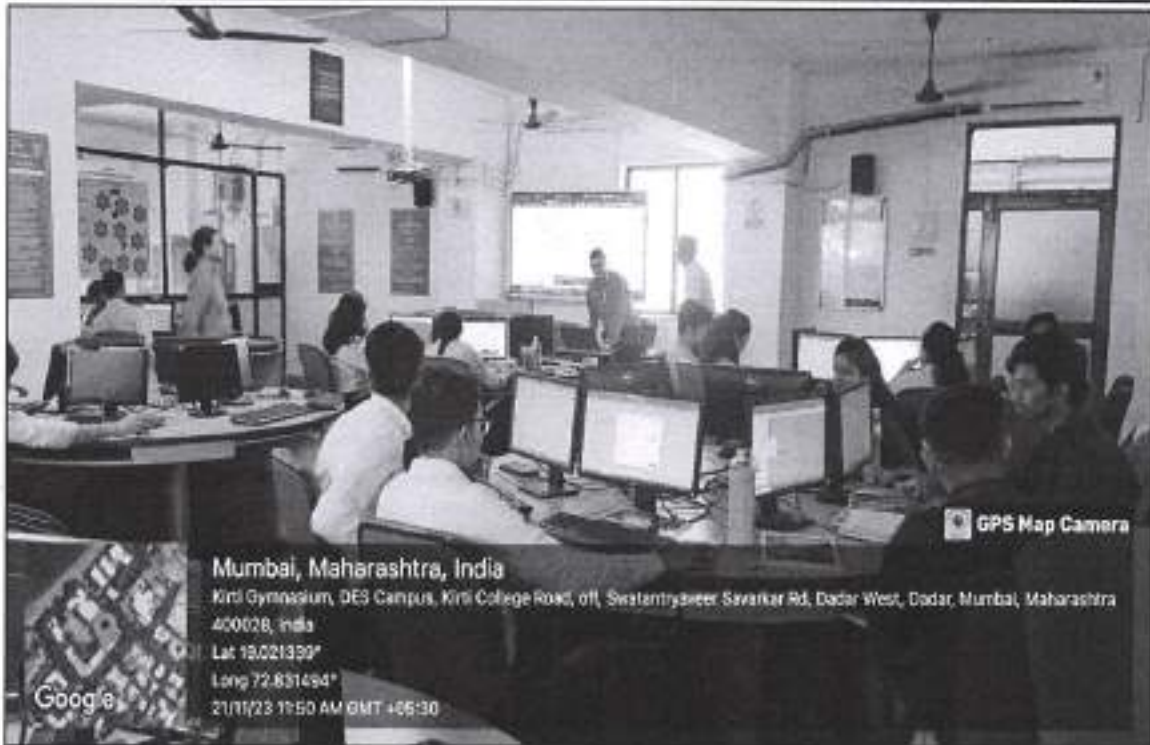


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Photographs of the event:



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Mumbai, Maharashtra, India

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21/11/23 11:41 AM GMT +05:30

Google



Omallya
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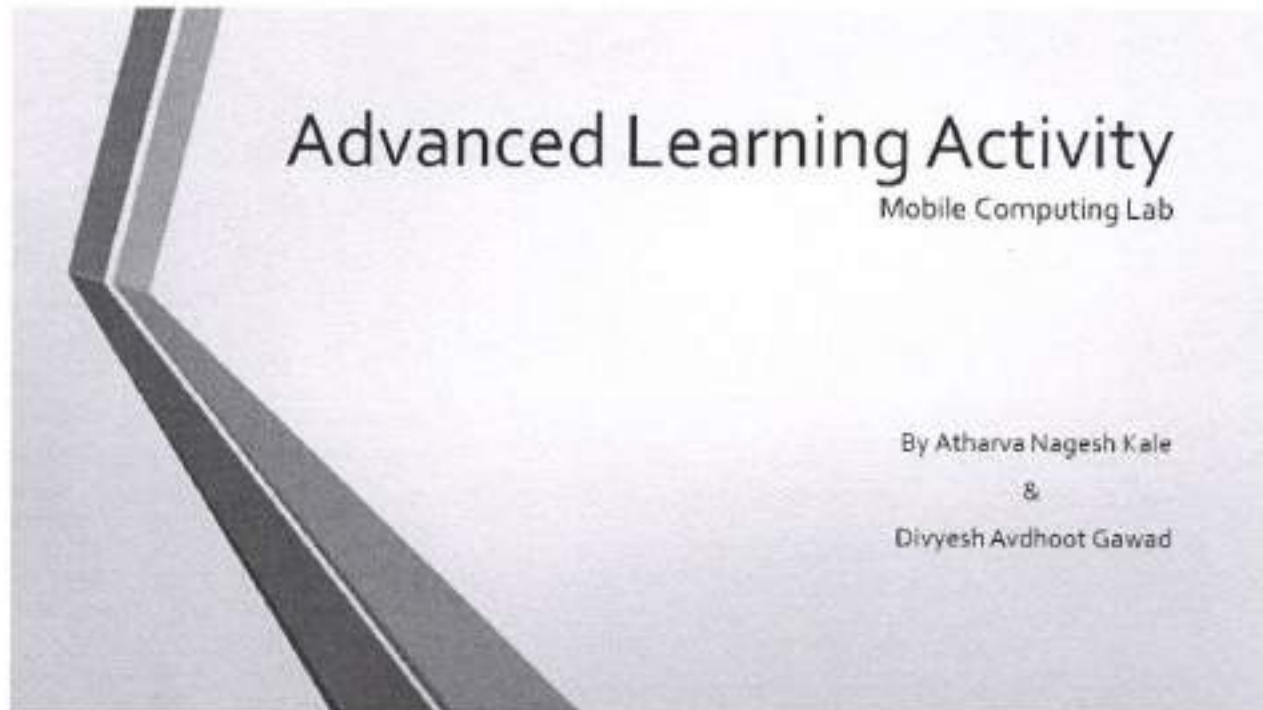
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Presentations:

1. Displaying google maps



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Implementation of Google maps in Android Studio

➤ Features of Google Maps

- * Map Display
- * Search and Navigation.
- * Live Traffic information
- * Street View
- * Local Business information
- * Markers and Layers
- * Offline Maps
- * Public Transit information
- * Location Sharing

Display Google Maps

1. Open **Android Studio**, and click **Create New Project** in the Welcome to Android Studio window.
2. In the New Project window, under the **Phone and Tablet** category, select the **Google Maps Activity**, and then click **Next**.
3. Complete the Google Maps Activity form:
 - Set Language to Java or Kotlin.
 - Set Minimum SDK to an Android SDK version that is supported by your test device.
4. Click **Finish**.



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Get an API key

The Google Maps API, like the Places API, requires an API key.
To obtain the API key, you register your project in the Google API Console.
The API key is tied to a digital certificate that links the app to its author.

Create an android application that accepts longitude
and latitude from the user and mark that location on
google map.



Amalya
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google_maps_api.xml

```
<resources>
  <string>
    TODO: Before you run your application, you need a Google Maps API key.

    To get one, follow this link, follow the directions and press "Create" at the end
    https://console.developers.google.com/maps/console?api\_key=YOUR\_API\_KEY
    </string>
  </resources>
```

You can also add your credentials to an existing key, using these values:

Package name:
com.example.googlemap

SHA-1 certificate fingerprint:
4C 9D C8 73 F6 7F 8D 66 49 43 E8 74 E7 8C C3 1D 68 64 1D 14

Alternatively, follow the directions here:
<https://developers.google.com/maps/documentation/android/basics#api-key>

Once you have your key (it starts with "AIza"), replace the "google_maps_key" string in this file.

```
<string name="google_maps_key" templateMergeStrategy="preserve"
  translatable="false">YOURKEY HERE</string>
```

Put here API key that you have created

```
MainActivity.java
package com.example.googlemap;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;

import com.google.android.gms.maps.CameraUpdateFactory;
import com.google.android.gms.maps.GoogleMap;
import com.google.android.gms.maps.OnMapReadyCallback;
import com.google.android.gms.maps.SupportMapFragment;
import com.google.android.gms.maps.model.LatLng;
import com.google.android.gms.maps.model.MarkerOptions;
import com.example.googlemap.databinding.ActivityMainBinding;

public class MainActivity extends AppCompatActivity implements OnMapReadyCallback {

    private GoogleMap mMap;
    private ActivityMainBinding binding;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);

        binding = ActivityMainBinding.inflate(getLayoutInflater());
        setContentView(binding.getRoot());

        // Obtain the SupportMapFragment object from the MapView that has been created.
        SupportMapFragment mapFragment = (SupportMapFragment) getSupportFragmentManager()
            .findFragmentById(R.id.map);
        mapFragment.getMapAsync(this);
    }
}
```



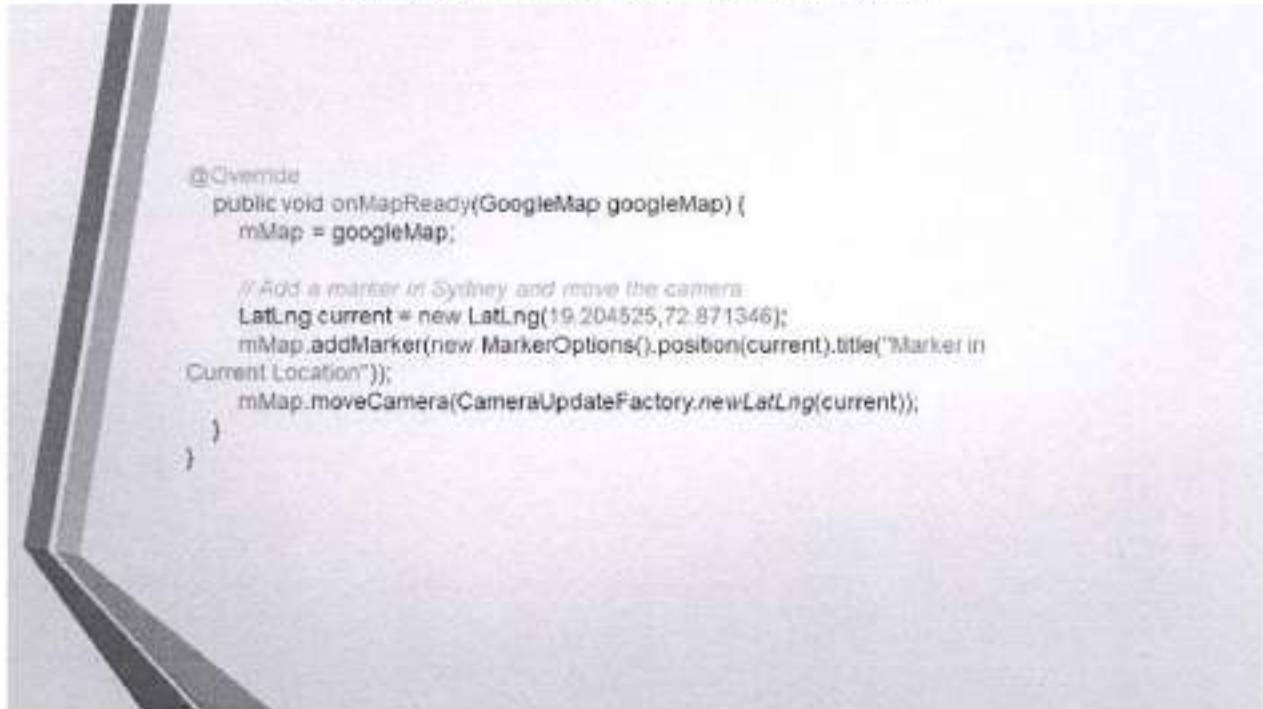
Omally
In-Charge Director
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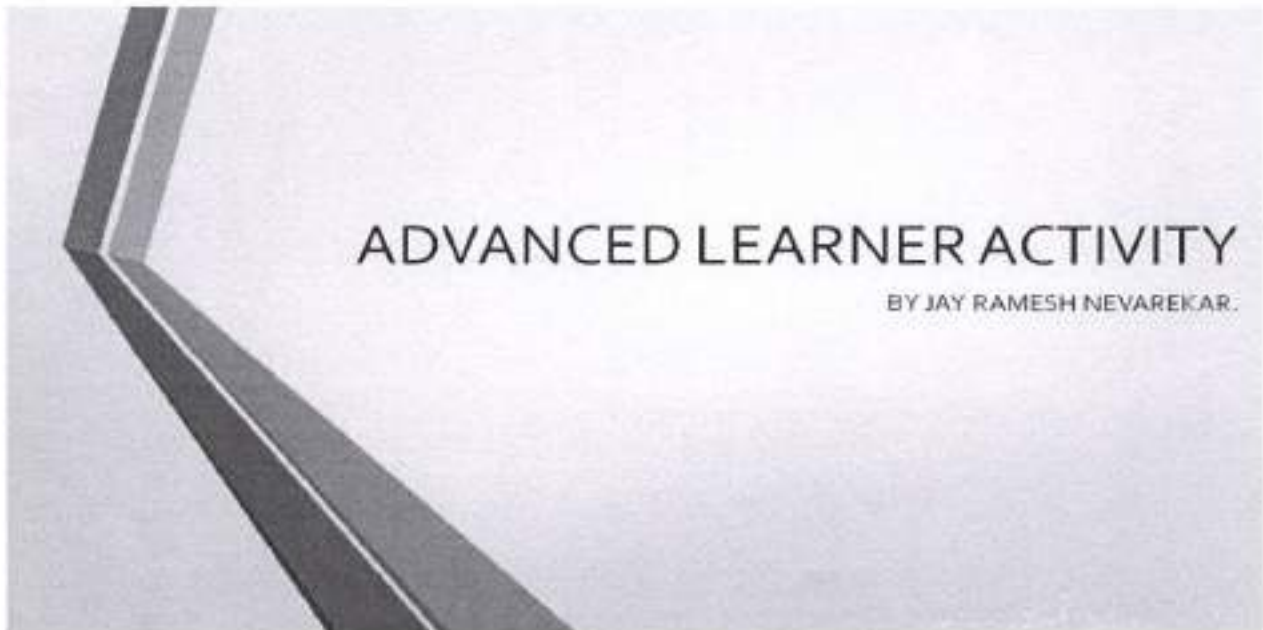
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2. Flutter installation



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FLUTTER FEATURES

- * 1. Single Codebase, Multiple Platforms
- * 2. Hot Reload
- * 3. Rich Widget Library
- * 4. Expressive UI
- * 5. Native Performance
- * 6. Community-driven and Open Source
- * 7. Integration with Firebase
- * 8. Extensive Documentation

FLUTTER INSTALLATION IN ANDROID STUDIO

Step 1: Download and Install Android Studio

- Go to Android Studio Download Page
- Follow the installation instructions for your operating system (Windows, macOS, or Linux).

Step 2: Download and Extract Flutter SDK

- Visit the Flutter SDK Download Page.
- Download the stable release for your operating system.
- Extract the compressed file to a location on your machine.

Step 3: Add Flutter to System Path

- Open your terminal or command prompt.
- Run `export PATH="$PATH:<path-to-flutter-directory>/flutter/bin"` on Linux/Mac or
- set `PATH="%PATH%;<path-to-flutter-directory>\flutter\bin"` on Windows

Step 4: Install Flutter and Dart Plugins in Android Studio

- Open Android Studio.
- Go to "File" > "Settings" > "Plugins".
- Search for "Flutter" and "Dart" plugins.
- Click "Install" and then "Restart" Android Studio.

Step 5: Verify Installation

- Open a terminal and run `flutter doctor`.
- Address any issues identified by the doctor.



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A Report on
Slow Learners' Activity

At

DES's Navinchandra Mehta Institute of Technology and Development

Introduction: The slow learners' activity was conducted for the subject mobile computing lab on December 18, 2023. Listed below are the slow learners for above mentioned subject:

Roll Number	Name of the student
C22019	Chapke Rushikesh Ghanshyam
C22020	Chaudhari Lalit Narayan
C22022	Chaugule Parth Sanjay
C22035	Fating Mohit Bhimrao
C22073	Landge Hemkant Rajendra
C22079	Mishra Aniket Girijashankar
C22095	Patil Rupesh Nana
C22118	Siriah Pratik Pramod

The slow learners were identified through mentoring sessions and their performance during the mobile computing lab sessions.

The objective of the Activity: Slow learners' activity aims to provide learning support to the slow learners so that they can improve their performance.

Activity conduct and observations:

A remedial session for above mentioned students were conducted by subject faculty, Mrs. Monisa A. Rodrigues (Asst. Professor, MCA). The basic fundamentals of flutter were explained to them in the said session. Also, they were taught how to design the UI of the application using flutter



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framework through demonstration. Few tricks were given to the slow learners so that they could easily developed the flutter application. As an outcome of this, all above mentioned students developed the flutter application that displays text with different text properties.



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**In-Charge Director
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