Learn/Play for Nomad Children

A PROJECT REPORT

Submitted by

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in partial fulfillment of requirements for the award of the course

AGB1211 – DESIGN THINKING

in

ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

K. RAMAKRISHNAN COLLEGE OF TECHNOLOGY

(An Autonomous Institution, affiliated to Anna University Chennai and Approved by AICTE, New Delhi)

SAMAYAPURAM – 621 112

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K. RAMAKRISHNAN COLLEGE OF TECHNOLOGY (AUTONOMOUS)

SAMAYAPURAM – 621 112

BONAFIDE CERTIFICATE

Certified that this project report on **" Learn/Play for Nomad Children"** is the bonafide work of **JULIAN FIDAL CASTRO S - (2303811724321048) KAMALESH S - (2303811724321049) KANISHKAR T - (2303811724321050) KAPIL K - (2303811724321051)** who carried out the project work during the academic year 2024 - 2025 under my supervision.

Signature

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Submitted for the viva-voce examination held on 5.12.24

INTERNAL EXAMINER **EXTERNAL EXAMINER**

DECLARATION

I declare that the project report on "**Learn/Play for Nomad Children**" is the result of original work done by us and best of our knowledge, similar work has not been submitted to "**ANNA UNIVERSITY CHENNAI**" for the requirement of Degree of **BACHELOR OF TECHNOLOGY**. This project report is submitted on the partial fulfillment of the requirement of the award of the **AGB1211 – DESIGN THINKING.**

Signature

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Kamalesh S

Kanishkar T

Kapil K

Place: Samayapuram

Date: 5/12/2024

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It is with great pride that I express our gratitude and indebtedness to our institution, **"K. Ramakrishnan College of Technology (Autonomous)",** for providing us with the opportunity to do this project.

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VISION OF THE INSTITUTION

To serve the society by offering top-notch technical education on par with global standards.

MISSION OF THE INSTITUTION

- Be a centre of excellence for technical education in emerging technologies by exceeding the needs of industry and society.
- Be an institute with world class research facilities.
- Be an institute nurturing talent and enhancing competency of students to transform them as all- round personalities respecting moral and ethical values.

VISION AND MISSION OF THE DEPARTMENT

To excel in education, innovation and research in Artificial Intelligence and Data Science to fulfil industrial demands and societal expectations.

Mission 1: To educate future engineers with solid fundamentals, continually improving teaching methods using modern tools.

Mission 2: To collaborate with industry and offer top-notch facilities in a conductive learning environment.

Mission 3: To foster skilled engineers and ethical innovation in AI and Data Science for global recognition and impactful research.

Mission 4: To tackle the societal challenge of producing capable professionals by instilling employability skills and human values.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

PEO 1: Compete on a global scale for a professional career in Artificial Intelligence and Data Science.

PEO 2: Provide industry-specific solutions for the society with effective communication and ethics.

PEO 3: Hone their professional skills through research and lifelong learning initiatives.

PROGRAM OUTCOMES

Engineering students will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)

- **PSO 1:** Capable of working on data-related methodologies and providing industryfocussed solutions.
- **PSO2:** Capable of analysing and providing a solution to a given real-world problem by designing an effective program.

ABSTRACT

Education is a basic right, yet many children in nomadic communities face challenges in accessing consistent and quality learning due to their migratory lifestyle. Learn/Play for Nomad Children is an innovative educational solution designed to bridge this gap. By combining interactive technology with cultural relevance, the app provides a platform for engaging, flexible, and accessible education. The project aims to deliver interactive learning modules in core subjects like Math, Science, and Storytelling, alongside gamified features such as Memory Match, Word Search, and Logic Riddles to foster critical thinking and problem-solving skills. These modules are designed to adapt to the learning pace of each child, ensuring personalized education that meets their unique needs. This report outlines the design thinking process followed to develop the app, emphasizing its empathetic approach, ideation, prototyping, and testing phases. Feedback from educators, parents, and children played a crucial role in refining the app's features to ensure its usability and effectiveness. In conclusion, Learn/Play for Nomad Children offers a transformative approach to education by blending technology, creativity, and inclusivity. It empowers nomadic children with knowledge and skills, fostering a brighter future for underserved communities while addressing the global need for equitable education.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Learn/Play for Nomad Children is an innovative app designed to address the educational gap for nomadic children. By offering interactive learning modules, gamified activities, and offline access, it ensures flexible, engaging education tailored to their unique needs.

1.2 PROBLEM STATEMENT

Nomadic children face challenges in accessing consistent education due to their migratory lifestyle, limited resources, and lack of culturally relevant content. Traditional educational tools are often inaccessible, leaving these children deprived of learning opportunities.

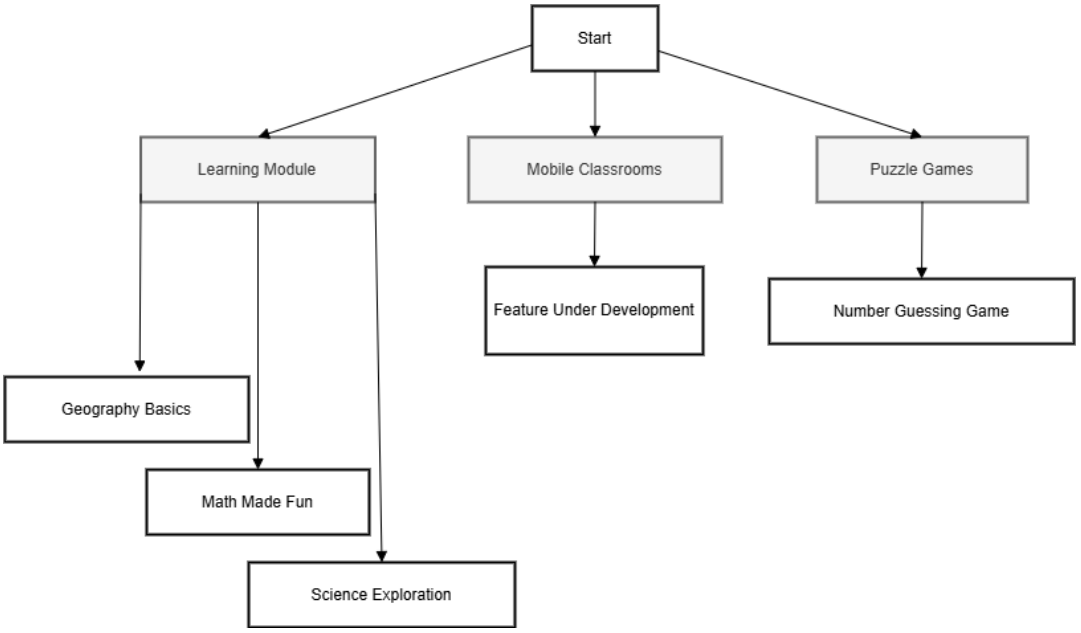
1.3 OBJECTIVE

The objective of Learn/Play for Nomad Children is to provide an engaging and flexible educational platform for nomadic children. It delivers interactive learning modules, gamified activities, and offline access to ensure consistent education. The app also emphasizes inclusivity with culturally relevant resources and adaptive content, empowering children to thrive in their unique lifestyles.

CHAPTER 2

PROJECT METHODOLOGY

2.1 BLOCK DIAGRAM



CHAPTER 3

KEY PHASES OF DESIGN THINKING

3.1 Empathize

We interviewed nomadic families and educators to understand their educational challenges. Key barriers identified included limited resources, lack of consistent schooling, and the need for culturally relevant content.

3.2 Define

We framed the problem as: "How can technology make education accessible for nomadic children?" Insights revealed that interactive games and culturally tailored content improve engagement.

3.3 Ideate

Brainstorming led to solutions like interactive learning modules, offline tools, and engaging games, forming the foundation for a flexible educational platform.

3.4 Prototype

We designed a prototype including Learning Modules, Puzzle Games, and Mobile Classrooms, addressing adaptability and accessibility challenges for nomadic children, using html, css, js.

3.5 Test

Feedback from parents, teachers, and children helped refine the app, ensuring it was engaging, user-friendly, and effective in meeting educational needs

CHAPTER 4

MODULE DESCRIPTION

4.1 Learning Modules

The learning module brings education to life through engaging activities. It includes geography basics, helping children explore the world around them; math made fun, which simplifies math concepts with interactive games; and science exploration, sparking curiosity through hands-on experiments and activities. This module ensures a balanced and enjoyable approach to core subjects.

4.2 Puzzle Games

The puzzle games module challenges young minds with fun activities like the number guessing game. This interactive game encourages critical thinking and enhances logical reasoning, making learning an entertaining experience.

4.3 Mobile Classrooms

The mobile classrooms feature is still under development, focusing on creating a robust offline learning platform. Once completed, it aims to provide seamless education to nomadic children, even in areas with no internet access, with resources designed to fit their unique lifestyles.

CHAPTER 5
CONCLUSION

Learn/Play for Nomad Children successfully combines technology with education to address the unique challenges faced by nomadic children in accessing consistent learning. Through interactive learning modules, engaging puzzle games, and mobile classrooms, the app ensures that children can continue their education regardless of their location. The inclusion of culturally relevant content and adaptive learning paths further enhances engagement, allowing children to learn at their own pace and in a way that resonates with their culture.

The app's offline functionality ensures that nomadic children are not left behind, even in areas with limited access to the internet. Additionally, the progress tracking feature empowers parents and educators to monitor a child's development, providing the necessary feedback to support their learning journey.

By focusing on accessibility, engagement, and inclusivity, Learn/Play for Nomad Children offers a transformative approach to education. It not only bridges the educational gap for nomadic communities but also empowers children to develop critical thinking, creativity, and problem-solving skills. As a result, the app contributes to creating a brighter future for children in underserved communities, ensuring that they are equipped with the knowledge and skills to thrive.

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APPENDIX A – SCREENSHOTS