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# FINAL YEAR PROJECT

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## Project Proposal Form 2025



**Discipline:** Software Engineering

**Session:** Morning

**Date Received:** \_\_\_\_\_

**Project ID (Office Use):** \_\_\_\_\_



Faculty of Engineering and Technology  
University of Sindh, Jamshoro



# Department of Software Engineering

## Faculty of Engineering and Technology



### 1. Project Identification

<b>A. Reference Number:</b> _____ (for office use only)			
<b>B. Project Title:</b> <u>Learnity</u>			
<b>C. Project Supervisor:</b>			
Name:	Kamran Taj		
Designation:		Signature:	
Email:		Contact:	
<b>Project Co-Supervisor:</b>			
Name:	Mohsin Ali Jokio		
Designation:		Signature:	
Email:		Contact:	
<b>D. Student Information</b>		<b>Morning / Evening</b>	
<b>Roll No</b>	<b>Name of Each Member</b>	<b>Contact Email</b>	<b>Signature</b>
2k22/SWE/88	Muhammad Wasif Malik	m.wasifmalik17@gmail.com	
2k22/SWE/115	Syed Ahsan	ahsannaqvi382@gmail.com	
2k22/SWE/131	Abdul Rafay Ali	abdulrafayali45@gmail.com	
<b>E. Project Status:</b> (Please mark <input checked="" type="checkbox"/> )			
<input checked="" type="checkbox"/> New Project <input type="checkbox"/> Modification / Extension of previous Project <input type="checkbox"/> Research Based Project			

**F. Select your Project Category** (Write down the name if not available)

Category Name		Category Name	
Web Development	✓	Robotics	
Android Application	✓	Renewable Energy	
E-Health		Satellite Communication 3G, 4G, 5G	
E-Commerce		Simulation Based	
WIFI/Wireless -Communication		Computer Networks	
Bluetooth Technology		Microwave Optical Fiber	
Desktop Application		Antenna Fabrication	
Game Development		Controller Design	
Graphics Animation		Network Simulation	
Biometric		Nano Technology	

**G. UNDP Sustainable Development Goals**

Select the Goal(s) from list below that defines your project purpose or outcome:

Goal Name		Goal Name	
No Poverty		Reduced Inequality	
Zero Hunger		Sustainable Cities and Communities	
Good Health and Well-being		Responsible Consumption and Production	
Quality Education	✓	Climate Action	
Gender Equality		Life Below Water	
Clean Water and Sanitation		Life on Land	
Affordable and Clean Energy		Peace and Justice Strong Institutions	
Decent Work and Economic Growth		Partnerships to achieve the Goal	
Industry, Innovation and Infrastructure			

## **2. Scope, Introduction and Background of the Project**

Learnity bridges educational gaps by combining quality tutoring with collaborative learning in a single, curriculum-aligned digital ecosystem. It's a comprehensive educational platform for Pakistani students that:

- Connects learners with verified tutors and study groups across grades 1-12 and specialised exam prep
- Facilitates learning through integrated video classrooms, chat functionality, and resource sharing
- Provides affordable, accessible education with a multi-factor tutor rating system and peer collaboration tools

### 3. Similar Projects and Literature Review:

#### Market Analysis

Existing educational platforms like [Khan Academy](#) and [Coursera](#) offer expansive global content but fail to provide **localised curricula alignment** with Pakistan's national board syllabi (Matric, FSC) and **live tutoring options** that are both accessible and affordable for local students. Platforms such as [Preply](#) and [Superprof](#) connect learners with certified tutors, but often at **high rates** (\$15-25/hour), making them less accessible to students in Pakistan. Additionally, these platforms lack **group study capabilities**, crucial for fostering collaborative learning, and do not align with the local educational system.

**WhatsApp study groups**, commonly used by students, are popular but have significant limitations, such as a **lack of structure, verification, and integrated tools** for organising lessons, tracking progress, and managing group activities (Memon et al., 2021). Furthermore, there is limited support for **regional languages** in these platforms. In Pakistan, where **Urdu** and other regional languages are widely spoken, the absence of language accessibility limits the inclusivity of many educational tools.

#### What Makes Learnity Unique

- **Localised and Curriculum-Specific Content:**  
Learnity aligns fully with Pakistan's national education system, ensuring students receive exactly what they need for exams and academic progression.
- **Multi-Language Support:**  
Learnity will support **Urdu** and potentially other regional languages, addressing a crucial gap in the market by breaking down language barriers and making learning more accessible.
- **Affordable and Structured Learning:**  
Learnity's automated matching system ensures students are connected to affordable tutors and study groups. **Study rooms** and **one-on-one tutoring sessions** provide a personalised learning experience that fits each student's pace and goals.
- **Gamification and Rewards System:**  
A **gamified reward and streak system** motivates students by offering credits for completing lessons, engaging in quizzes, and contributing to study groups. These

credits can be redeemed for premium features or extra resources, enhancing student engagement and retention.

## References

- Memon, S., et al. (2021). "[WhatsApp as an educational tool during COVID-19](#)" *Pakistan Journal of Medical Sciences*, 37(1), 241-247.
- Pakistan Bureau of Statistics. (2022). [Household Integrated Economic Survey 2021-22](#).
- Hamari, J. (2023). "Gamification in education: A field experiment on engagement." *Computers in Human Behaviour*, 136.
- National Education Policy. (2022). Ministry of Federal Education, Pakistan.

#### **4. Problem Identification** (*Problem Statement / What is the problem that you are trying to solve*)

Students in Pakistan face several hurdles:

- Limited access to verified tutors, especially in remote or underprivileged areas.
- High costs for quality one-on-one coaching for competitive exams.
- Fragmented study resources are scattered across social media and offline circles.
- Lack of collaborative tools to form and manage study groups effectively.

Learnity aims to solve these challenges by consolidating verified tutoring, peer collaboration, and curriculum-specific resources into a single, user-friendly application.

#### **5. Aim(s) and Objectives of Project:** (doable Targets, Goals, Steps you will take to achieve your overall project aim/s)

**Vision Statement:** To cultivate a vibrant educational ecosystem that seamlessly blends peer-led study circles, certified tutoring, and gamified learning journeys, empowering Pakistani students to excel across curricula.

##### **Strategic Goals:**

- **Launch a Reward Ecosystem:** Implement a token-based model where students earn credits for group participation, quiz completions, and peer mentoring, redeemable for advanced features.
- **Craft an Adaptive Interface:** Design a responsive UI with progress trackers, dynamic dashboards, achievement badges, and leaderboards to keep learners engaged.
- **Curate Structured Learning Paths:** Offer tools for uploading syllabus-aligned videos, notes, assignments, and project briefs to create curated study tracks.
- **Deploy Smart Matching Algorithms:** Use data insights to pair learners with certified tutors and study cohorts based on skill level, location, and learning goals.
- **Nurture Collaborative Communities:** Build interactive forums, peer review workflows, group challenges, and social feeds for resource exchange and collective problem-solving.
- **Initiate Starter Credit Bundles:** Provide new users with introductory credits to explore study rooms, test one-on-one sessions, and access core resources free of charge.

## 5. Project Milestones and Deliverables

S. No	Milestone Description	Date	Deliverable
1.	Requirement Analysis & System Design	05 – 05 - 2025	SRS Document, Architecture Diagrams
2.	UI/UX Prototyping & Frontend setup	25 – 05 - 2025	Clickable wireframes, Next.js Scaffold
3.	Backend Development & Database Integration	15 – 07 - 2025	RESTfull APIS, Database schema and table designs
4.	Testing	25 – 08 - 2025	Completed tests (unit, integration, UAT).
5.	Deployment(CI/CD pipeline integration)	15 – 09 - 2025	Making the app live for the public
6.			

## 6. Expected Tools and Technology Requirements

- **Next.js & React Native(Expo preferably):** Unified React-based framework for web and mobile, maximising code reuse.
- **Tailwind CSS & NativeWind:** Utility-first styling engines that speed up consistent UI development.
- **Node.js with Nestjs:** TypeScript-driven backend framework offering modular, scalable architecture.
- **Neon DB & MongoDB Atlas:** Serverless Postgres for structured data and document DB for flexible content storage.
- **Firebase Realtime:** Real-time database for chats, live updates, and lightweight data sync.
- **Streem** : Open-source and managed SDKS providing low-latency video calls and messaging.
- **GitHub Actions:** Integrated CI/CD pipelines for automated testing and deployments.
- **Vercel:** Global edge hosting for frontend
- **AWS/GCP:** scalable cloud services for the backend.

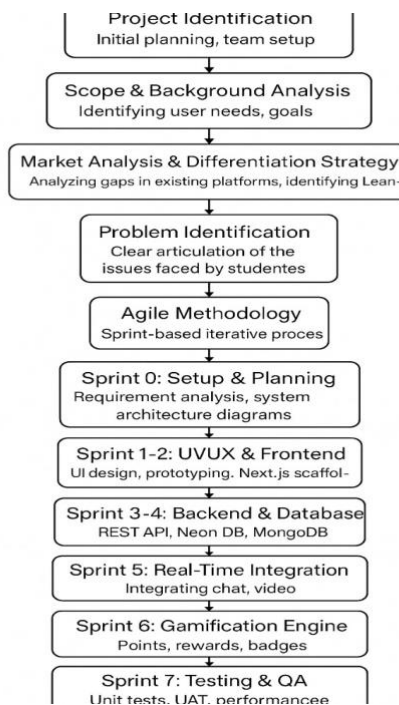
## 7. 7. Methodology, Design/Development Process Model, etc:

*(Please describe the technical details and development process. Provide Working Diagrams, System Design, Specify major components / entities of your project using block diagrams, system flow charts etc. )*

The Learnity development will follow an Agile Scrum methodology with two-week sprints, ensuring iterative progress and continuous feedback. Detailed design artifacts (block diagrams, flow charts, sequence diagrams, and ER models) will be produced during each phase.

### Sprint Breakdown:

- **Sprint 0 (Setup & Planning):** Requirement analysis, SRS documentation, system architecture diagrams.
- **Sprints 1–2 (UI/UX & Frontend):** Clickable wireframes, Next.js scaffolding, component library setup.
- **Sprints 3–4 (Backend & Data):** RESTful API development, database schema design, Neon DB and MongoDB integration.
- **Sprint 5 (Real-Time Integration):** Chat and video modules integration using Stream or Jitsi, API endpoints for messaging.
- **Sprint 6 (Gamification Engine):** Points system, reward logic, badges, leaderboard implementation.
- **Sprint 7 (Testing & QA):** Unit tests, integration tests, user acceptance testing, performance profiling.
- **Sprint 8 (CI/CD & Deployment):** GitHub Actions pipeline configuration, Vercel and AWS/GCP deployment setups.
- **Sprint 9 (Beta Launch & Feedback):** Public beta release, user feedback collection, and refinement roadmap.



(For office use only)

**8. Reviewers Committee Comments**

Decision	√ or X	Remarks
Project Accepted		
Project Accepted with Modifications		
Project Needs Major Revision		
Project Rejected		

**Other Comments and Suggestions:**

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