



FULL PROJECT ID: 29

Learny - Interactive Learning Platform for Students

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Introduction to Project

- ▶ In many underdeveloped areas of Pakistan, students struggle to access quality education due to high costs and a shortage of qualified teachers. **Learnity** addresses this issue by providing an **affordable, localized online learning platform** that connects students with **verified tutors**, supports **group study**, and uses a **streak-based motivation system**.
- ▶ Focused on grades **1 to 12**, Learnity follows the **Pakistani curriculum** and offers a **bilingual (Urdu-English)** interface. Built with modern technologies like **Next.js, Firebase, and MySQL**, it aims to make quality education **accessible, engaging, and affordable** for every student.

Project Overview

- ▶ **Learny** is a web and mobile platform for Pakistani students (Grades 1-12).
- ▶ Connects students with **verified tutors** for affordable one-on-one sessions.
- ▶ Provides **study groups** for peer-to-peer collaborative learning.
- ▶ Offers **curriculum-aligned resources** matching Matric/FSc syllabi.
- ▶ Supports **Urdu + English** interface for accessibility.

Project Overview Continued!

- ▶ Students can search, book, and rate tutors by subject and grade.
- ▶ Study groups enable chat, video calls, and resource sharing.
- ▶ **Gamification system** rewards users with points and badges.
- ▶ Admin approval ensures only qualified tutors join the platform.
- ▶ Learnity bridges education gaps in Pakistan — **affordable, accessible, localized**.

Literature View / Similar projects

- ▶ Several e-learning platforms such as **Khan Academy**, **Coursera**, and **Preply** provide online tutoring and educational resources. However, these platforms often focus on international curricula and are **too costly for students in Pakistan**.
- ▶ Research by *Memon et al. (2021)* highlights that tools like **WhatsApp** were used for learning during COVID-19, but they lack structure, teacher verification, and progress tracking.

Studies on **gamification in education** (*Hamari, 2023*) show that reward-based learning improves student motivation and consistency.

- ▶ **Learny** builds upon these findings by offering a **localized, affordable, and bilingual (Urdu-English)** platform that integrates verified tutoring, study groups, and gamified progress tracking for Pakistani students.

Similar projects

- ▶ **Khan Academy** – Offers free lessons but not 1-on-1 tutoring or Pakistan's syllabus.
- ▶ **Coursera** – High-quality but costly; targets higher education.
- ▶ **Preply** – Private tutoring but expensive and not local.
- ▶ **IlmKiDunya** – Covers local syllabus but lacks live tutoring and gamification

Problem Identification / Statement

► **Problem:**

- Students struggle to find qualified tutors, especially in remote areas.
- International platforms charge \$15-25/hour — unaffordable for most.
- Study resources scattered across WhatsApp, YouTube, and PDFs.
- WhatsApp groups lack structure, verification, and progress tracking.
- Most platforms don't support Urdu or Pakistani curriculum.

► **Solution (Learnity):**

- Verified tutor marketplace with affordable and accessible pricing.
- Structured study groups with chat & video features.
- Curriculum-specific content aligned with Matric/FSc boards.
- Multi-language support (Urdu + English).

Scope of Project

- ▶ Platform for **Web (Next.js)** and **Mobile (PWA)**
- ▶ **Target audience:** students and Teachers.
- ▶ **Features include:**
 - Student: Search tutors, book sessions, join study groups
 - Tutor: Create profile, set pricing, conduct video sessions
 - Admin: Approve tutors, manage users, moderate content
 - Video calling (one-on-one and group)
 - Resource library (upload/download notes and videos)

Aim and Objectives

► **Aim:**

- Build an accessible platform connecting Pakistani students with verified tutors and study groups, aligned with local curriculum.

► **Objectives:**

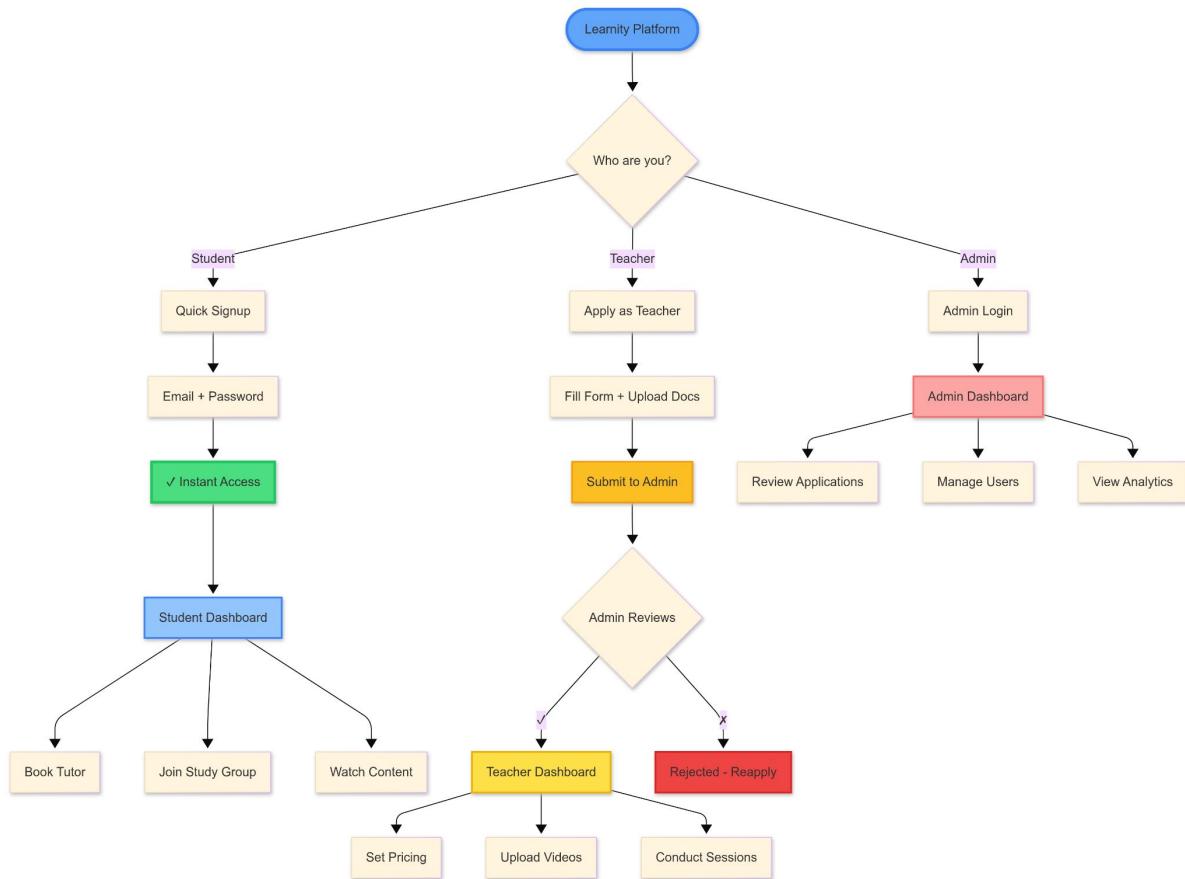
- Develop tutor-student matching and booking system
- Create study group features
- Build curriculum-aligned resource library
- Implement bilingual interface (Urdu + English)
- Integrate video calling for sessions

Tools and Technologies

- ▶ **Frontend:** Next.js, Tailwind CSS.
- ▶ **Backend:** Node.js, NestJS (TypeScript)
- ▶ **Database:** Neon DB (PostgreSQL), MongoDB Atlas, Firebase.
- ▶ **Communication:** Stream SDK or Jitsi (video calling)
- ▶ **Design Tool:** Figma + Stitch
- ▶ **Version Control:** GitHub, GitHub Actions (CI/CD)
- ▶ **Deployment:** Vercel (frontend), AWS/GCP (backend)
- ▶ **Other Tools:** VS Code, Postman, JWT, Bcrypt

Design and Development Methodology

Activity Diagram



Design and Development Methodology

► Agile Development Model:

- Short sprints: plan, code, test
- Continuous feedback & improvements
- Flexible, user-focused, quick updates



Progress Update

► **Completed Task:**

- Project planning and requirements finalized
- System architecture designed
- Database schema created (PostgreSQL)
- Backend development:NestJS setup complete
- Authentication system (JWT) implemented
- User, Tutor, Session, Admin APIs built
- Database deployed on Neon DB

► **Current Status:**

- Working on frontend development (Next.js)
- Designing UI/UX in Figma
- Building student and tutor dashboards

Progress Update Continued

▶ Pending Task:

- Video calling Integration system(Stream SDK)
- Study group features (chat, video, resources)
- Resource library upload/download system
- Mobile app development
- Gamification system (points, badges)
- Payment integration

▶ Challenges faced

- Learning Nest JS and PostgreSQL simultaneously
- Designing role-based authentication flow
- Finding affordable deployment platforms

Implementation (UI Design)

Dashboard

OVERVIEW

Courses in progress: 3

Active Prototypes: 7

Hour Learning: 3h 15m

Community score: 240

STUDY STATISTICS

Day	Hours
SAT	1.5
SUN	3.0
MON	2.0
TUE	2.0
WED	3.5
THU	2.0
FRI	2.0

week / month

PROGRESS

Category	Progress (%)
Courses	45%
Prototypes	80%

ACTIVITY

Felix has replied on At *cillum enim in cras arcu*.
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

Ludwig has invited you to *Impedit enim est, varius faucibus.*
2h 5min ago 10:00 am

Jonathon has commented on *Venenatis aliquam sit pellentesque...*.
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

MY COURSES

Introduction to lorem ipsum...
Shams Tabrez

English for today...
Shams Tabrez

Basic of Lorem ipsum color...
Shams Tabrez

Courses section (Desktop view)

My Courses

Progress

30%

Sept 2023

Mon Tue Wed Thu Fri Sat Sun

26 27 28 29 30 Oct 01 02

Due Date Oct 02, 2023

Assignment 04
Nisi, venenatis id cursus volutpat
cursus interdum enim mauris.

All Status

3/7 courses	30/70 quizzes	2 prototypes	2 hours learning
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Enrolled Courses

Course Name	Progress	Last Activity	More
Basic of English Language	Progress	08/2/10 3/5	...
Introduction the web development	Progress	08/2/10 0/10	...
Basic data-structure and algorithm	Completed	View Certificate	...
Lorem ipsum dolor sit amet, consectetur adipiscing elit.	View Certificate	Completed	...

[COURSE CATALOG](#)

Featured

5 lessons + 4 quizzes

Etiam erat a sit diam donec.

Quisque et tristique eu est sed id
sapien, nullam erat.

Shams Tabriz

5 lessons + 4 quizzes

Nibh consectetur leo.

A, sed lectus id rutrum phasellus
adipiscing sit dolor quis.

Shams Tabriz

Course catalog

The screenshot shows a course catalog interface with a dark background. On the left is a vertical sidebar with icons for search, filters, and user profile. The main area is titled "Course Catalog" and shows a grid of course cards. Each card features a thumbnail of a person at a desk, the title "Lorem ipsum", a subtitle "Lorem ipsum mit de paro madrid", a progress bar showing 1/2, and a summary section with "5 lektionen" and "4 quizzes". One card is highlighted with a blue border and has a "Fundamentals" badge.

Course Title	Description	Progress	Badges
1. Lorem ipsum	Loreum ipsum mit de paro madrid	1/2	
2. Lorem ipsum	Loreum ipsum mit de paro madrid	1/2	
3. Lorem ipsum	Loreum ipsum mit de paro madrid	1/2	
4. Lorem ipsum	Loreum ipsum mit de paro madrid	1/2	
5. Lorem ipsum para	Loreum ipsum mit sore de pas hallo Madrid	5 lektionen • 4 quizzes	Fundamentals
6. Lorem ipsum para	Loreum ipsum mit sore de pas hallo Madrid	5 lektionen • 4 quizzes	
7. Lorem ipsum para	Loreum ipsum mit sore de pas hallo Madrid	5 lektionen • 4 quizzes	
8. Lorem ipsum para	Loreum ipsum mit sore de pas hallo Madrid	5 lektionen • 4 quizzes	

Prototypes

My Prototypes

Explore Solution Prototypes

Solution Home Security with basic electronics

Prototype Simple Rocket Building

Solution Lorem ipsum ned ut ser gut vergasen

Prototype Lorem ipsum ned ut ser gut vergasen

see all →

Filter: All Prototypes ▾

+ CREATE PROTOTYPES

Stakeholders in the farming ecosystem

Government
Stakeholders in the farming ecosystem
Agricultural technology providers (ATPs)
Supply chain

>Lorem Project
In Draft · Edited 5 min ago

Ipsum prototype

Ipsum prototype
In Draft · Edited 5 min ago

Discussion section

Discussions

Discuss the OLP platform – this includes sharing feedback, asking questions, and more.

search

+ Ask New

Machine Learning IoT UI/UX algorithm Biology more

3D Place solution Shams Tabrez · Last comment 7h ago by Nafin 15 comments

what is the pcb board made of? Shams Tabrez · Last comment 7h ago by Nafin 22 comments

will reactjs take over the web development sector? Shams Tabrez · Last comment 7h ago by Nafin 30 comments

Soil Moisture Prediction with ML Shams Tabrez · Last comment 7h ago by Nafin 10 comments

Deep Learning in the field of labour. Shams Tabrez · Last comment 7h ago by Nafin 15 comments

Multioutput Regressor as a wrapper Shams Tabrez · Last comment 7h ago by Nafin 4 comments

Big Opportunity of IoT in Africa Shams Tabrez · Last comment 7h ago by Nafin 15 comments

Is there any TechHub competition in recent days? Shams Tabrez · Last comment 7h ago by Nafin 0 comments

Live session

Live Lessons

Upcoming Lessons

You don't have any lesson scheduled yet.

Schedule a lesson

Available Slots (N.B. time set to GMT+1)

Aug 14 - 20, 2023

TODAY < >

Mon 14/08	Tue 15/08	Wed 16/08	Thu 17/08	Fri 18/08	Sat 19/08	Sun 20/08
		8:00am - 8:45am		2 seats left 8:00am - 8:45am		
	9:00am - 10:45am					
10:00 AM			10:30am - 11:45am	10:30am - 11:45am	9 seats left 10:30am - 11:45am	
11:00 AM		10:30am - 11:45am		11:00am - 11:45am		
12:00 PM						
01:00 PM						

Dashboard (Mobile view)

Dashboard

13
Courses in progress

07
Active prototypes

12h 30m
Time spent

420
Community score

Overall Progress

45%

Courses

Prototypes

My Courses

Modern Web tools

Modern Web tools

Modern Web tools

Courses

30% Beginner

Assignments

Assignment 04
Due Date: Oct 02, 2022
Overview of available development boards

My Courses

Frontend Web Development
7 lessons

Basic data-structure and algorithm
7 lessons

Design Concept UI/UX
7.7 lessons - 6/7 rated

Courses you may like

8 lessons - 4 rated

8 lessons - 4 rated

Prototypes

Solution Prototypes

Prototype
Home Security with basic electronics

Prototype
Simple IoT Building

Filter: All Prototypes

+ CREATE

Student side (Mobile view)

Discussions

search discussion

Machine Learning AI UI/UX algorithm ML

3D Place solution
Shawn Tolson Last comment: 7h ago by nalin 9 comments

what is the pcb board made of?
Shawn Tolson Last comment: 7h ago by nalin 9 comments

will reactjs take over the web development sector?
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Multicoutput Regressor as a wrapper
Shawn Tolson Last comment: 7h ago by nalin 9 comments

Big Opportunity of IoT in Africa
Shawn Tolson Last comment: 7h ago by nalin 9 comments

Live Events

Upcoming Lessons

You don't have any lesson scheduled yet.

Schedule a lesson
Available Slots (N.B. time set to GMT+1)

Aug 21, 2023 TODAY < >

Monday
8:00 AM 2 seats left 8:00am - 8:45am
9:00 AM
10:00 AM 10:00am - 10:45am
11:00 AM 11:00am - 11:45am
12:00 PM

Course Catalog

search courses

Lorum ipsum... Learn Internet Arabic English

See All →

Frontend Web Development
Shawn Tolson Overview of Lorum ipsum... del so onda

Frontend Web Development
Shawn Tolson Overview of Lorum ipsum... del so onda

All Courses

Frontend Web Development
Shawn Tolson Overview of Lorum ipsum... del so onda

Frontend Web Development
Shawn Tolson Overview of Lorum ipsum... del so onda

Frontend Web Development
Shawn Tolson Overview of Lorum ipsum... del so onda

Frontend Web Development
Shawn Tolson Overview of Lorum ipsum... del so onda

Future Work

► **Remaining Task:**

- Complete frontend (Student, Tutor, Admin dashboards)
- Integrate video calling (Stream SDK or Jitsi)
- Build study group features (chat, video, resources)
- Implement resources library (upload / download)
- Add gamification (points, badges, leaderboards)
- Develop mobile app (React Native)
- Add payment gateway integration
- Email notification for booking

Future Work Continued

► **Post- FYP Enhancements**

- AI-powered tutor recommendations
- Advanced analytics dashboards
- Live streaming for large lectures
- Regional language expansion(Sindhi, Punjabi)
- Parent portal for monitoring progress
- Integration with school systems
- Certification with school systems
- Certification for completed courses

Timeline

SNo	Milestone	Date	Deliverable
1	UI/UX Design	25-07-2025	UI designs and wireframes
2	Database Design	05-08-2025	Database schema and tables
3	Frontend Development	28-9-2025	Next.js Frontend with localization and responsive design.
4	Backend Development	16-10-2025	APIs, Auth, SSRM db Schema implementation.
5	Deployment and Testing.	02-12-2025	App deployment on vercel and aws ec2 manual and auto testing.
6	Thesis Submission	18-12-2025	Final project report

Conclusion

► **Summary:**

Learnyty solves critical education challenges in Pakistan by connecting students with verified tutors through an affordable, localized platform aligned with national curriculum.

► **Lesson Learned:**

- Database design for multi-role applications
- Team collaboration using Agile methodology
- Importance of planning and clear requirements
- The value of feedback and iteration in building better solutions.

References

- ▶ <https://www.khanacademy.org/>
- ▶ <https://www.coursera.org/>
- ▶ <https://www.preply.com/>
- ▶ <https://docs.nestjs.com/>
- ▶ <https://nextjs.org/docs>
- ▶ <https://www.postgresql.org/docs>
- ▶ <https://firebase.google.com/docs>
- ▶ Memon, S., et al. (2021). "WhatsApp as an educational tool during COVID-19." *Pakistan Journal of Medical Sciences*.
- ▶ Hamari, J. (2023). "Gamification in education." *Computers in Human Behaviour*.
- ▶ National Education Policy (2022). Ministry of Federal Education, Pakistan.

*Thank you,
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