Final Year Projects for IT Students PDF

A good IT final year project is a complete, deployed application that solves a real problem for a real user group. It should have a front end, a back end, a database, login and roles, testing and at least one feature that goes beyond simple data entry, such as search, payments, real-time updates or an AI feature. Build fewer features and finish them well.

Key takeaways

- Examiners and recruiters both value a live, working app over a long list of half-built features.
- Each project here lists the stack, main modules, steps, viva points and a rough cost.
- Costs are mainly hosting, domain and API charges. Many projects can run near zero on free tiers. All costs are approximate and vary by city and vendor.
- Use Git from day one. Your commit history shows who did what.
- Add tests, a short README and a demo video. These help in the viva and in job interviews.

How to choose your IT final year project

1. **Find a real user.** A college club, a local shop or a hostel office. Real users give real requirements.
2. **Pick a stack your team can learn in time.** MERN (MongoDB, Express, React, Node.js), Django or Spring Boot with React are common, well-documented choices.
3. **Add one hard part.** Real-time chat, role-based access, payments, search or an AI feature makes the project stand out.
4. **Plan for deployment.** A project on a public URL is easier to demo and to show on a resume.

Beginner-level final year projects

1. College event management portal

- **Problem:** Event registrations are handled in scattered forms and chats.
- **Stack:** React, Node.js and Express, MongoDB or MySQL.
- **Modules:** event listing, student registration, admin dashboard, QR check-in, email confirmation.
- **Steps:** design the database, build APIs, build pages, add QR codes, deploy.
- **Viva points:** REST API design, form validation, how QR check-in prevents duplicates.
- **Approximate cost:** Rs 0 to 1,000 for hosting and domain (varies by city and vendor).

2. Library management system with fine calculation

- **Stack:** Django or Spring Boot, MySQL, Bootstrap or React.
- **Modules:** book catalogue, issue and return, due date alerts, fine calculation, reports.
- **Viva points:** normalisation, foreign keys, scheduled jobs for reminders.

- **Approximate cost:** Rs 0 to 800 (varies by city and vendor).

3. Online complaint and ticketing system for a hostel

- **Stack:** MERN or PHP and MySQL.
- **Modules:** ticket creation with photos, status tracking, staff assignment, feedback.
- **Viva points:** role-based access control, file upload security, ticket lifecycle.
- **Approximate cost:** Rs 0 to 1,000 (varies by city and vendor).

4. Expense tracker with charts

- **Stack:** React, Firebase or Node.js with PostgreSQL, Chart.js.
- **Modules:** login, expense entry, categories, monthly charts, CSV export.
- **Viva points:** authentication flow, aggregation queries, data privacy.
- **Approximate cost:** Rs 0 to 500 (varies by city and vendor).

Intermediate-level final year projects

5. Real-time chat app with group rooms

- **Stack:** React, Node.js, Socket.IO, MongoDB, Redis (optional).
- **Modules:** sign up, one-to-one and group chat, online status, message history, file sharing.
- **Viva points:** WebSockets versus polling, scaling with Redis pub/sub, message ordering.
- **Approximate cost:** Rs 0 to 1,500 (varies by city and vendor).

6. E-commerce store with payment gateway (test mode)

- **Stack:** Next.js or React, Node.js, PostgreSQL, Razorpay or Stripe test mode.
- **Modules:** catalogue, cart, checkout, order tracking, admin inventory.
- **Viva points:** payment webhooks, idempotency, why you never store card details.
- **Approximate cost:** Rs 0 to 1,500, test mode payments are free (varies by city and vendor).

7. Online exam and proctoring-lite system

- **Stack:** React, Django REST or Node.js, MySQL.
- **Modules:** question bank, timed tests, auto grading, tab-switch detection, result analytics.
- **Viva points:** timer handling on server side, randomisation, cheating limits of browser checks.
- **Approximate cost:** Rs 0 to 1,000 (varies by city and vendor).

8. Job and internship portal for a college

- **Stack:** MERN, Cloudinary or S3 for resumes.
- **Modules:** student profiles, company postings, applications, shortlist status, search and filters.
- **Viva points:** search indexing, pagination, access rules for resumes.
- **Approximate cost:** Rs 0 to 1,500 (varies by city and vendor).

9. Hospital appointment booking system

- **Stack:** Spring Boot, React, MySQL.
- **Modules:** doctor schedules, slot booking, reminders, prescription upload, admin reports.
- **Viva points:** handling double booking with transactions, time zones, data sensitivity.

- **Approximate cost:** Rs 0 to 1,500 (varies by city and vendor).

Advanced-level final year projects

10. AI document Q&A assistant for college notices

- **Stack:** Python (FastAPI), an LLM API, a vector store (FAISS or pgvector), React.
- **Modules:** PDF upload, text chunking, embeddings, retrieval, answer with source links.
- **Viva points:** retrieval-augmented generation, chunk size, handling wrong answers, API cost control.
- **Approximate cost:** Rs 0 to 2,500 for API usage during testing (varies by city and vendor).

11. Microservices food delivery backend

- **Stack:** Node.js or Spring Boot services, Docker, an API gateway, RabbitMQ or Kafka.
- **Modules:** user, restaurant, order and delivery services, events between them, monitoring.
- **Viva points:** service boundaries, message queues, eventual consistency.
- **Approximate cost:** Rs 0 to 2,000 if you run on a laptop and a free cloud tier (varies by city and vendor).

12. Phishing URL detection browser extension

- **Stack:** JavaScript extension, Python model served by an API, public phishing datasets.
- **Modules:** URL feature extraction, classifier, warning popup, report false positive.
- **Viva points:** feature choice, precision versus recall, privacy of browsing data.
- **Approximate cost:** Rs 0 to 1,000 (varies by city and vendor).

13. DevOps pipeline for a web app

- **Stack:** GitHub Actions, Docker, a cloud VM or free tier, Nginx, monitoring tool.
- **Modules:** automated tests, build, container push, deploy, rollback, uptime alerts.
- **Viva points:** CI versus CD, blue-green deployment, secrets management.
- **Approximate cost:** Rs 0 to 2,000 (varies by city and vendor).

14. Collaborative code editor

- **Stack:** React, Monaco editor, WebSockets or CRDT library (Yjs), Node.js.
- **Modules:** shared editing, cursors, rooms, code run in a sandbox, history.
- **Viva points:** CRDTs versus operational transform, sandbox security.
- **Approximate cost:** Rs 0 to 1,500 (varies by city and vendor).

Project report structure

1. Title page, certificate, declaration, acknowledgement
2. Abstract
3. Introduction: problem, objectives, scope
4. Literature survey and existing systems
5. Requirements: functional, non-functional, hardware and software
6. System design: architecture diagram, ER diagram, use case and sequence diagrams

7. Implementation: key modules with short code snippets
8. Testing: test cases, results, screenshots
9. Conclusion and future scope
10. References

The project report title page generator and the project description generator for resume help with the first page and your resume line.

Common mistakes to avoid

- **Copying a GitHub project.** Viva questions on your own code expose it quickly.
- **No deployment.** A project that only runs on one laptop often fails on demo day.
- **Weak database design.** Plan tables and relations before coding.
- **No testing section.** Write test cases with expected and actual results.
- **Committing secrets.** Keep API keys in environment variables, never in the repository.

Frequently asked questions

Which is the best final year project for IT students?

A complete, deployed web or mobile app for a real user group, with login, a database and one hard feature such as real-time updates, payments or AI search, is a strong choice.

Which tech stack should I use for my IT final year project?

MERN, Django with React, or Spring Boot with React are all well supported. Choose the one your team can learn and finish in time.

How much does an IT final year project cost?

Many projects cost close to nothing on free hosting tiers. Domains, cloud usage or AI API calls may add up to a few thousand rupees. These are approximate and vary by city and vendor.

Can I add AI to my IT project?

Yes. A document Q&A assistant, smart search or a recommendation feature using an AI API is a good addition, as long as you can explain how it works and its limits.

What do examiners ask in an IT project viva?

Expect questions on your architecture, database design, a few lines of your own code, how you tested it and how you handled security.

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Sources and further reading

- MDN Web Docs
- React documentation
- Node.js documentation

- Django documentation
- OWASP Top Ten

About this PDF

Prepared by the Uncodemy trainer team as a practical project guide. Hosting and API prices change often, so treat costs as approximate. Corrections: info@uncodemy.com.

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