

NexPrep Backend – Professional Roadmap

=====

1. Original MVP & Roadmap (April 2025)

- Marks per question & ExamType tagging
- CSV import with dynamic hierarchy creation
- Fixed■paper TestSeries + TestAttempt flow
- Student dashboard (attempts, review)
- Per■test leaderboard
- Cool■down retake limit (3 hours)

2. New Data■Model Additions (2025■04■20 workshop)

Question:

- meta.accuracy (correct / total)
- meta.avgTime
- tags [array]
- revision (version int)

TestAttempt:

- events [{ts, qId, action}]
- attemptNo (for limit per series)

User:

- roles ['student','admin','super','instructor']
- settings.preferredExamType
- profile.phone, profile.email

TestSeries:

- startAt, endAt (Date)
- visibility ('public','private','org')

Payment:

- transactions [{orderId, amount, status}]

Audit:

- auditLogs { user, action, entity, before, after, ts }

3. High■Priority Features to Implement Next

A. Attempt Limits & Scheduling

- Pre-check attemptNo, enforce startAt/endAt

B. Analytics API

- /api/analytics/series/:id (avg %, accuracy per q)
- /dashboard/me (weak topics)

C. SuperAdmin Role & RBAC

- Manage admins, toggle maintenance

D. Logging & Monitoring

- Winston logger, daily rotate
- Sentry (optional)

4. Medium Priority Enhancements

- Adaptive Test Generator (uses Question.meta)
- Image & KaTeX rendering for STEM questions
- Bulk export / rate limiting
- Payments (Razorpay) schema + webhook

5. Long Term / Optional

- Proctoring snapshots (S3)
- PWA offline mode
- Multi-tenancy (orgId on core documents)

6. Deployment & CI

- Dockerfile + docker-compose
- GitHub Actions: lint → Jest → Newman → build

7. Immediate Indexes to Create

```
db.questions.createIndex({ examType:1, 'meta.accuracy':1 })
db.testattempts.createIndex({ student:1, series:1 })
db.auditlogs.createIndex({ ts:-1 })
```

—— End of Document ——