Feasibility Study for SmartClinic 2.0

Technical

Do interns know the required tech (React, Node, DB)?
No. Interns have not yet learned React and Node. They can ramp up with guided tasks and mentoring. Start them on small components and simple backend endpoints while seniors handle core architecture.

Hardware & Software

Minimum

Developer laptops: 8GB RAM, quad-core CPU.

Reliable internet.

Hosting: small cloud VPS or free-tier PaaS.

Database: PostgreSQL or MySQL.

Dev tools: IntelliJ Community Edition, Node.js LTS, Git, Docker (optional), Postman.

Email: SendGrid/Mailgun free tier.

SMS: pay-per-message provider with small startup credit.

Domain and SSL via Let's Encrypt.

Recommended

Developer machines: 16GB RAM.

Managed DB and small staging/production instances.

Docker for consistent dev setup.

Monitoring and backups.

Figma for design mockups.

Economic

Keep initial scope small to control cost.

Main costs: developer hours, hosting, SMS messages.

Use free tiers and pay-as-you-go services to keep monthly spending low.

Expected return: faster appointments, fewer no-shows, better throughput. For a small clinic, this should justify modest investment.

Licensing / Tools

Prefer open-source and free tiers.

IntelliJ Community Edition for IDE.

GitHub free plan for repo and CI.

SendGrid/Mailgun free tier and Twilio or local SMS gateway on pay-per-use.

Only buy paid licenses when needed.

Operational

Will staff adopt digital tools? Yes. Staff are willing to adopt if the system is easy to use and clearly improves daily work.

Training required: short hands-on sessions, cheat-sheets, and on-call support during the pilot.

Key Risks & Mitigations

Interns need ramp-up time. Mitigation: give small tasks, pair with a mentor, use templates.

SMS costs can grow. Mitigation: monitor volume, combine email/in-app notifications, negotiate provider rates later.

Staff resistance. Mitigation: simple UI, involve staff early, run a pilot.

Acceptance Criteria for Feasibility

Interns complete basic tasks in React/Node under mentor guidance.

Small budget reserved for hosting and SMS credits.

Clinic agrees to a pilot and training plan.

Conclusion

Feasible with conditions.

Why: Project is achievable for a small clinic if you limit the initial scope to an MVP, provide mentorship for interns, use low-cost services, and run a short pilot with staff training.