**Read Me — Sponsorship Management System (Modern Setup)**

**🔹 1. System Requirements**

**Hardware**

* Server or VM with at least **4 GB RAM** and **100 GB disk**.
* Backup storage (local or cloud).

**Software**

* **Backend**: Node.js (Express + Sequelize ORM).
* **Frontend**: React (Vite, Axios, Recharts, Chakra UI or Tailwind).
* **Database**: PostgreSQL (preferred) or MySQL.
* **Security**: JWT authentication, bcrypt password hashing, role-based access control (RBAC).
* **Deployment**: Docker + docker-compose for containerized services.
* **Reports**: jsPDF for PDF export, exceljs for Excel export.
* **Testing**: Jest (backend), React Testing Library (frontend).

**🔹 2. Database Design (ERD)**

Tables (via Sequelize models + migrations):

* **Users** (Admins, Sponsors, Guardians – distinguished by role field).
* **Students** (child profile, guardian status).
* **Guardians** (if stored separately, or use Users with role = Guardian).
* **Sponsors** (if stored separately, or use Users with role = Sponsor).
* **SponsorStudent** (junction table linking sponsors ↔ students).
* **EducationRecords** (progress tracking, subject scores, uploads).

Relationships:

* User(Guardian) **1 — \* Students**
* User(Sponsor) **M — M Students** via SponsorStudent
* Student **1 — \* EducationRecords**

**🔹 3. Wireframes / Mockups**

**Login Page**

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| Sponsorship System Login |

| [ Email: \_\_\_\_\_\_\_\_\_ ] |

| [ Password: \_\_\_\_\_\_\_\_\_ ] |

| [ Login Button ] |

* Secure JWT login
* Role-based redirect (Admin → Admin dashboard, Sponsor → Sponsor dashboard).

**Admin Dashboard**

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| Dashboard |

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| Total Students: ### | Total Sponsors: ### |

| Primary: ## | Secondary: ## | University: ## |

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| [Add Student] [Add Sponsor] [Add Guardian] |

| [Upload Results] [Generate Reports] |

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| Recent Updates |

| - John Doe promoted to Secondary |

| - Sponsor Jane added 2 new students |

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| Charts |

| [ Student Progress Pie Chart ] |

| [ Sponsorship Distribution Bar Chart ] |

* Implemented using **React + Recharts**.

**Student Profile Page**

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| Student Profile |

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| Name: John Doe |

| Background: Orphan (Rural village) |

| Guardian: Mary Doe (Alive - Contact: 077...) |

|---------------------------------------------|

| Education Progress |

| - Primary: Completed (PLE results: 18 agg.) |

| - Secondary: Ongoing (S.2, Math: B, Eng: A) |

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| Sponsor: Jane Smith (UK) |

| Donations: $2000 since 2022 |

* Pulls data via REST API (/api/students/:id).
* Progress shown in tabular & chart formats.

**Sponsor Dashboard**

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| Welcome Sponsor: Jane Smith |

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| Your Sponsored Children: |

| 1. John Doe - Secondary (Progress: Good) |

| 2. Mary N. - University (Progress: Average) |

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| [Download Report] [View Profile] |

* Reports generated via **PDF/Excel export**.

**🔹 4. Functional Description**

**Admin**

* Add/Edit/Delete students, sponsors, guardians.
* Upload results & progress.
* Assign sponsors to students.
* Manage confidential organizational data.
* Generate printable reports.

**Sponsor**

* View sponsored children and education progress.
* Download reports (PDF/Excel).

**Guardian**

* Limited view of child details (if permitted).

**System**

* Dashboards with live stats (Recharts).
* Secure login with JWT + role-based access.
* Search/filter by student, sponsor, guardian, education level.
* Data retrieval APIs (REST, JSON).
* Export-ready reports for presentations