**DIYpedia**

**Initial concept and description**

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**1. Overview**

**DIYpedia** is a community-driven mobile and web application designed for makers, tinkerers, and learners who love to *build things themselves*. Whether it’s crafting a wooden bench, assembling a custom computer server, or learning basic household chemistry, DIYpedia provides a collaborative space where users can share detailed, step-by-step guides and discover new projects from others.

The app bridges the gap between knowledge sharing and hands-on creativity by allowing users to **create, upload, and explore “Do-It-Yourself” (DIY) recipes** for almost any topic — technology, crafts, science, home improvement, and more.

**2. Core Features**

**User Accounts & Profiles**

* Sign up via email, Google, or GitHub.
* Custom profile with bio, skills, and contributed projects.
* Bookmark and download favorite guides.

**Recipe Creation (“Build Guides”)**

* Step-by-step editor to create a DIY “recipe”:
  + Title, category, difficulty, estimated time, required materials.
  + Step descriptions with photos, videos, and optional diagrams.
  + Tags and searchable keywords for discoverability.
* Option to add safety notes and disclaimers where needed.

**Explore & Discover**

* Feed of trending, newest, and featured builds.
* Category filters: *Home, Tech, Science, Art, Mechanics, etc.*
* Search by keyword, difficulty, or materials.

**Community & Interaction**

* Like, comment, and share builds.
* Follow creators and get notifications for new uploads.
* Rating system for accuracy and usefulness.
* Flag/report system for unsafe or inappropriate content.

**Gamification (Future Roadmap)**

* Badges for contributions (e.g., “Builder,” “Innovator,” “Expert”).
* Leaderboards by category.
* Achievement milestones (e.g., “10 Builds Shared”).

**AI Maker Assistant (optional)**

* Users can ask natural-language questions while building
* Users can describe a problem (e.g., “My table is wobbly even though the legs are even”) and the AI suggests quick fixes.
* Users can ask for explanations of concepts — e.g., “What does torque mean?” or “Why do I need a resistor?”

**3.Technical Overview**

* **Frontend:** React Native (cross-platform mobile), React Web.
* **Backend:** Spring Boot (Java)
* **Authentication:** Firebase Auth or OAuth 2.0 (Google/GitHub).
* **Media Storage:** Cloud storage (e.g., AWS S3 or Firebase Storage).
* **AI Assistant (Future Idea):** Optional generative helper that suggests build improvements or summarizes guides.