**GitExplorer Project Report**

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**Live App:** https://gitexplorer09.netlify.app/  
**Source Code:** https://github.com/Ushnika09/GitExplorer.git  
**Backend:** Hosted on Render

**Tech Stack:** MERN (MongoDB, Express, React, Node.js) with Tailwind CSS for styling and JWT for authentication.

**Introduction**

GitExplorer is a **developer-focused platform** designed to simplify exploring and managing GitHub repositories. Users can discover trending repositories, bookmark their favorites with personal notes, search for repositories or users, and access analytics for both trending and bookmarked repositories. The platform integrates **real-time GitHub API data** with personalized features, providing a seamless and productive experience for developers.

**Abstract**

This project utilizes the GitHub API to provide live insights into repository trends and user activity. Trending repositories can be filtered by language and timeframe, and users can search for specific repositories or GitHub users. Bookmarks allow personal organization, while analytics dashboards provide visual summaries of repository popularity, language distribution, and engagement. GitExplorer combines live data with personalized management tools, creating a comprehensive environment for repository discovery and analysis.

**Tools Used**

* **Frontend:** React, Tailwind CSS
* **Backend:** Node.js, Express
* **Database:** MongoDB Atlas
* **Authentication:** JWT (JSON Web Token)
* **Hosting:**
  + Frontend: [Netlify](https://gitexplorer09.netlify.app/)
  + Backend: Render
* **Version Control:** GitHub ([GitExplorer Repository](https://github.com/Ushnika09/GitExplorer.git" \t "_new))

**Steps Involved in Building the Project**

1. **Requirement Analysis:** Defined key features such as trending repositories, bookmarking, analytics, and search functionality.
2. **Frontend Development:**
   * Designed landing, login, home, analytics, and bookmarks pages.
   * Implemented navigation, filters, search bars, and repository details using React and Tailwind CSS.
3. **Backend Development:**
   * Built RESTful APIs for managing bookmarks.
   * Integrated JWT-based authentication for secure access.
   * Connected to MongoDB Atlas for persistent storage of bookmarks.
4. **GitHub API Integration:**
   * Fetched live trending repositories and repository details.
   * **Note:** GitHub API imposes limitations, allowing only up to 1000 repository details at once, with a maximum of 100 per request. All bookmarks are fully accessible without restriction.
5. **Bookmark & Analytics Implementation:**
   * Users can save repositories with personal notes.
   * Analytics dashboards display trends for both trending repositories and bookmarks.
6. **Testing & Deployment:**
   * Conducted functional testing for frontend and backend features.
   * Deployed frontend to Netlify and backend to Render.

**Conclusion**

GitExplorer successfully provides a **real-time, interactive platform** for discovering, organizing, and analyzing GitHub repositories. It demonstrates proficiency in the MERN stack, API integration, and secure authentication. Despite GitHub API limitations for trending and analytics data, all user bookmarks are fully accessible. The project effectively combines live data with personalized tools, making it a **comprehensive solution for developers** seeking to explore GitHub efficiently.