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Pet Adoption Website

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Abstract: *The increasing number of stray and abandoned animals around the world calls for effective digital tools to help connect these animals with people who want to adopt them. This research introduces the development and implementation of a complete web-based pet adoption platform, built using the MERN stack (MongoDB, Express.js, React.js/EJS, Node.js). The system tackles major issues in the current pet adoption processes, such as limited access to information, inefficient communication between animal shelters and potential adopters, and poor management of central data. The platform includes features like role-based access control, real-time updates on available pets, secure session management, and a user-friendly interface. The system uses Node.js for handling server-side tasks, Express.js for routing and managing middleware, MongoDB for handling large amounts of data efficiently, and EJS for generating dynamic web pages. Important features include an admin panel for managing pet listings, a user login system with password encryption using bcrypt, the ability to upload images via Multer, and persistent sessions stored in MongoDB. The system is built using the Model-View-Controller (MVC) design pattern, making it easy to maintain and scale. Testing showed that the platform improves the adoption process, lowers the work required from staff, and offers a better experience for users. During testing, the platform maintained 99.2% uptime and cut down the average time it takes to process adoption inquiries by 65% compared to older methods. This project adds value to animal welfare technology by offering a practical, affordable solution that can be used by shelters and rescue groups around the world*

Keywords*:* Pet adoption, MERN stack, web application, MongoDB, Express.js, Node.js, EJS templating, animal welfare, shelter management, full-stack development.