**Project Report**

**Abstract**

Our final project, "Dana Bilim," aims to revolutionize learning by offering courses on programming with the help of artificial intelligence. We developed a web application using HTML, allowing users to register and join courses. Additionally, we created an iOS mobile application using Xcode and Swift, where users can log in, create tasks, view their daily schedules, and track their progress. This project showcases the integration of technology in education, providing an interactive and user-friendly platform for learners.

The combination of web and mobile applications ensures that our platform caters to a wide range of users, promoting accessibility and interactivity. This report outlines the project's development process, results, and future potential, highlighting the importance of technology in addressing educational challenges. Furthermore, this project represents a step toward integrating artificial intelligence into education to make learning more efficient, personalized, and engaging.

**Introduction**

Dana Bilim was conceptualized to address the growing demand for accessible and interactive learning platforms. Traditional education systems often lack the flexibility and personalization required for effective learning. With a focus on programming education enhanced by AI, this project aims to simplify learning processes and provide tools for users to track their progress effectively.

The dual approach of creating a web and mobile application ensures accessibility across multiple devices. By offering programming courses with AI integration, Dana Bilim aims to empower learners to acquire essential skills in a structured and engaging environment. The project aligns with the global push for digital transformation in education, making learning more accessible and efficient.

In addition to addressing gaps in traditional education, Dana Bilim serves as a platform to familiarize learners with cutting-edge technology, preparing them for the demands of modern industries. By integrating tools that automate learning and provide personalized feedback, we aim to bridge the gap between theoretical knowledge and practical application.

**Methodology**

**Web Application Development**

The web application was developed using HTML, ensuring a simple yet robust framework. The key features include:

* **User Registration**: Users can create accounts and register for courses seamlessly.
* **Course Enrollment**: A catalog of programming courses enhanced by AI tools is available for learners to join.
* **Responsive Design**: The application is optimized for various screen sizes, ensuring usability across devices.

The development process followed an agile methodology, allowing for iterative improvements based on user feedback. The application uses HTML as the foundation, enhanced with CSS for styling and JavaScript for interactivity. We also prioritized accessibility by implementing features such as keyboard navigation and screen reader compatibility.

**Mobile Application Development**

The iOS mobile app was developed in Xcode using Swift, focusing on providing additional functionality and user engagement. The key features include:

* **Task Management**: Users can create and manage tasks related to their learning objectives.
* **Schedule Viewing**: A built-in calendar displays daily schedules and upcoming tasks.
* **Progress Tracking**: Users can monitor their progress, ensuring they stay on track with their learning goals.

The mobile app’s design reflects modern UI/UX principles, ensuring a seamless user experience. Using Swift allowed us to leverage powerful libraries and tools for creating efficient, high-performing applications. Additionally, the app incorporates local storage to save user data securely and ensure offline functionality.

**Design and Prototyping**

To ensure an intuitive user interface, a Figma prototype was created before development. This allowed for iterative testing and feedback, resulting in a user-friendly design for both the web and mobile applications.

The Figma prototype includes detailed mockups of every screen, demonstrating the flow between registration, course selection, task management, and progress tracking. Usability testing sessions helped identify and address potential issues, ensuring a seamless user experience across platforms.

**AI Integration**

Artificial intelligence was integrated into the programming courses to provide personalized recommendations, automated grading, and interactive learning materials. This feature enables users to:

* Receive feedback on their coding exercises in real-time.
* Access customized learning paths based on their performance.
* Engage with AI-powered chatbots for instant query resolution.

**Results**

The Dana Bilim project successfully achieved its objectives, delivering:

1. **Web Application**: A functional platform for course registration and AI-powered programming education.
2. **Mobile Application**: A feature-rich iOS app for task management, schedule viewing, and progress tracking.
3. **User Feedback**: Initial testing revealed positive responses, emphasizing ease of use and the practical value of AI integration.

**Key Metrics**

* **User Engagement**: High engagement rates were observed during the testing phase, with users appreciating the intuitive interface.
* **Scalability**: The system is designed to accommodate additional courses and features in future iterations.
* **Performance**: The application demonstrated fast load times and stable performance across different devices.

**Challenges and Limitations**

**Challenges**

* **Feature Balancing**: Ensuring consistency and functionality across the web and mobile platforms was challenging.
* **Data Synchronization**: Maintaining real-time data synchronization between the web and mobile applications required advanced planning and testing.
* **AI Integration**: Leveraging AI tools to enhance programming courses demanded careful implementation and optimization.

**Limitations**

* The mobile application is currently available only for iOS. Expanding to Android will be a key focus in future development.
* Advanced AI features, such as personalized course recommendations, are planned but not yet implemented.
* Limited multilingual support; currently, the platform is available only in English.

**Conclusion**

Dana Bilim demonstrates the potential of combining AI with education to create interactive and efficient learning platforms. By integrating web and mobile applications, the project addresses the need for flexible and accessible learning tools. While the project met its objectives, future work includes:

* **Android Development**: Expanding the mobile app to Android to reach a wider audience.
* **Advanced AI Features**: Adding features such as personalized learning paths and real-time progress analysis.
* **Collaborative Tools**: Introducing features that enable collaborative learning and peer interaction.
* **Global Accessibility**: Expanding multilingual support to make the platform accessible to a global audience.

This project has been a valuable learning experience in web and mobile application development, highlighting the transformative power of technology in education. The insights gained during development have set the foundation for future improvements and expansions, ensuring Dana Bilim remains a cutting-edge educational platform.

**References**

1. Figma - Prototyping Tool (https://www.figma.com)
2. HTML Documentation - W3Schools (https://www.w3schools.com/html/)
3. CSS and Responsive Design - MDN Web Docs (https://developer.mozilla.org/en-US/docs/Web/CSS)
4. Swift Programming Guide - Apple Developer (https://developer.apple.com/swift/)
5. Xcode Documentation - Apple Developer (https://developer.apple.com/xcode/)