DESIGN THINKING FOR DATA-DRIVEN APP DEVELOPMENT

PROJECT CLOSURE REPORT

TEAM 15

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INTRODUCTION

This project aimed to design and develop a Learning Management System (LMS) tailored to the needs of educational institutions. The LMS focuses on addressing some of the key challenges facing educational institutions, such as managing attendance, assignments, communication, and administrative tasks through a centralized platform. The KDT-EAST framework guided the project and ensured that the solution would be user-centric, scalable, and technologically feasible.

(A) KDT-EAST PHASES AND OUTCOMES

1. *Empathize Phase (E):*
- **Activities Undertaken:**
  - Conducted user interviews with key stakeholders: **Principal, Teacher, Student, and Non-Teaching Staff(Clerk).**
  - Developed detailed user personas and journey maps to understand needs, motivations, and pain points.
- **Key Decisions & Challenges:**
  - Targeted features for core pain points, like attendance automation and task management.
  - Challenges included reconciling diverse user needs into a unified solution.
- **Team Contributions:**
  - **Satish Jaiswal:** Conducted interviews with non teaching staff, focusing on identifying their pain points.
  - **Prem Kumar:** Mapped journey experiences of student and consolidated interview insights.
  - **Shrirang Sapate:** Developed detailed personas and outlined motivation points for Teacher.
  - **Srishti Singh:** Analyzed feedback from Principal and highlighted critical pain points.

2. Analyze Phase(A):
- **Activities Undertaken:**
  - Performed multi-why and root cause analysis to identify barriers in existing systems.
  - Created "How Might We" questions to explore innovative solutions.
- **Key Decisions & Challenges:**
  - Prioritized addressing attendance tracking, assignment submissions, and real-time communication.
  - Challenges included balancing feature richness with system simplicity.
- **Team Contributions:**
  - **Satish Jaiswal:** Led the root cause analysis and synthesized findings into actionable problems.
  - **Prem Kumar:** Designed "How Might We" questions to explore possibilities for attendance tracking.
  - **Shrirang Sapate:** Conducted feasibility analysis for proposed features, focusing on real-time communication.
  - **Srishti Singh:** Organized and documented brainstorming sessions, ensuring alignment with user needs.

3. *Solve Phase(S):*
- **Activities Undertaken:**
  - Brainstormed solutions and conducted voting sessions to identify high-impact features.
  - Designed low-fidelity wireframes for the LMS and validated workflows with stakeholders.
- **Key Decisions & Challenges:**
  - Balanced human desirability with technical feasibility for features like dashboards and real-time updates.
  - Challenges included stakeholder concerns about adopting new technology.
- **Team Contributions:**
  - **Satish Jaiswal:** Proposed dashboard features and voted on prioritized tasks during brainstorming sessions.
  - **Prem Kumar:** Designed low-fidelity wireframes and ensured workflows were validated with stakeholders.
  - **Shrirang Sapate:** Focused on ensuring technical feasibility for real-time updates.
  - **Srishti Singh:** Contributed ideas to balance user needs with scalable design considerations.

4. *Test Phase (T):*
- **Activities Undertaken:**
  - Tested prototypes with users, gathering feedback on usability and feature relevance.
  - Iterated on key features like assignment tracking and performance dashboards.
- **Key Decisions & Challenges:**
  - Incorporated suggestions for improved UI design and data visualization.
  - Challenges included refining the system for intuitive navigation.
- **Team Contributions:**
  - **Satish Jaiswal:** Coordinated testing sessions and integrated user feedback into prototype iterations.
  - **Prem Kumar:** Focused on improving UI design based on usability test results.
  - **Shrirang Sapate:** Refined visualization elements for performance dashboards.
  - **Srishti Singh:** Documented user feedback and proposed enhancements for intuitive navigation.

(B) PRODUCT FEATURES AND EVALUATION

1. Attendance Tracking
- **Human Desirability**: Highly appreciated by admins and teachers for reducing manual effort.
- **Business Viability**: Saves time, improving institutional efficiency.
- **Technological Feasibility**: Easily tracked using visualization like Bar Chart.

2. Assignment Management
- **Human Desirability:** Ensures seamless submission and grading for teachers and students.
- **Business Viability:** Simplifies workflows, reducing delays and errors.
- **Technological Feasibility:** Feasible through database-driven management systems.

3. Real-Time Communication
- **Human Desirability**: Addresses student doubts quickly, enhancing engagement.
- **Business Viability**: Encourages collaboration and builds trust.
- **Technological Feasibility**: Leave request form can be immediately sent to concerned authorities.

4. Performance Dashboards
- **Human Desirability:** Offers actionable insights for teachers, students, and admins.
- **Business Viability:** Data-driven decisions improve academic outcomes.
- **Technological Feasibility:** Detailed performance can be seen by students for their submitted quiz/assignments.

TOOLS USED

- **Design Tools:** Figma for wireframes, Mural for brainstorming, Canva for PPTs.
- **Collaboration Tools:** Jira for project tracking, manual testing for prototype validation.

LESSONS LEARNED

- **Scalability Matters:** Early consideration of scaling features ensures long-term usability.
- **User-Centric Design:** Involving stakeholders in testing refines the solution effectively.
- **Prioritization is Key:** Balancing human desirability, feasibility, and viability is essential for success.

CLOSURE REMARKS

This project highlighted the power of **design thinking** in solving complex problems. The LMS prototype is a user-friendly, scalable solution addressing educational needs effectively. Future iterations will focus on enhancing offline capabilities and advanced analytics, ensuring greater inclusivity and impact.

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