Hackathon Project Phases Template for the **LogoCraft** project

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Hackathon Project Phases Template

Project Title:

LogoCraft: Innovative Logo Generation with Diffusion Technology

Team Name:

Echelon X

Team Members:

- A. Sai Karthik
- G. Varun Kumar
- D. Tejashwini
- B. Ashritha
- D. Shirisha

Phase-1: Brainstorming & Ideation

Objective:

LogoCraft aims to provide an AI-powered platform for generating unique and professional logos based on user descriptions. It simplifies logo creation, enables customization, and makes branding accessible to businesses of all sizes.

Key Points:

1. **Problem Statement:**
   - Creating a unique and professional logo is challenging for many businesses, especially those without design expertise or access to professional designers.
   - Traditional logo design methods can be time-consuming, expensive, and may not fully capture a brand's identity.

2. **Proposed Solution:**
   - LogoCraft leverages **AI-powered Diffusion technology** to generate high-quality, customizable logos based on user-provided descriptions.
   - The platform provides an intuitive interface, allowing users to create logos effortlessly and refine them to match their brand vision.

3. **Target Users:**
    - Startups and small businesses
    - Entrepreneurs and freelancers
    - Marketing teams and branding agencies
    - Anyone needing a quick and professional logo

4. **Expected Outcome:**
    - AI-generated logos based on user descriptions, customizable with colors and styles. Logos will be available for download in high-quality formats like PNG and SVG.

Phase-2: Requirement Analysis

Objective:

- Define technical and functional requirements.

Key Points:

1. **Technical Requirements:**
    - Programming language: Python
    - Backend: Python
    - Frontend: React.js
    - Database: Not required
    - APIs: Stable Diffusion API

2. **Functional Requirements:**
    - Users enter a text description for logo generation.
    - AI generates logos using Diffusion technology.
    - Users can customize colours, fonts, and styles.
    - Logos are previewed before downloading.
    - Downloadable in PNG, SVG, and other formats.

3. **Technical Requirements:**
    - Programming language: Python
    - Backend: Python
    - Frontend: React.js
    - Database: Not required
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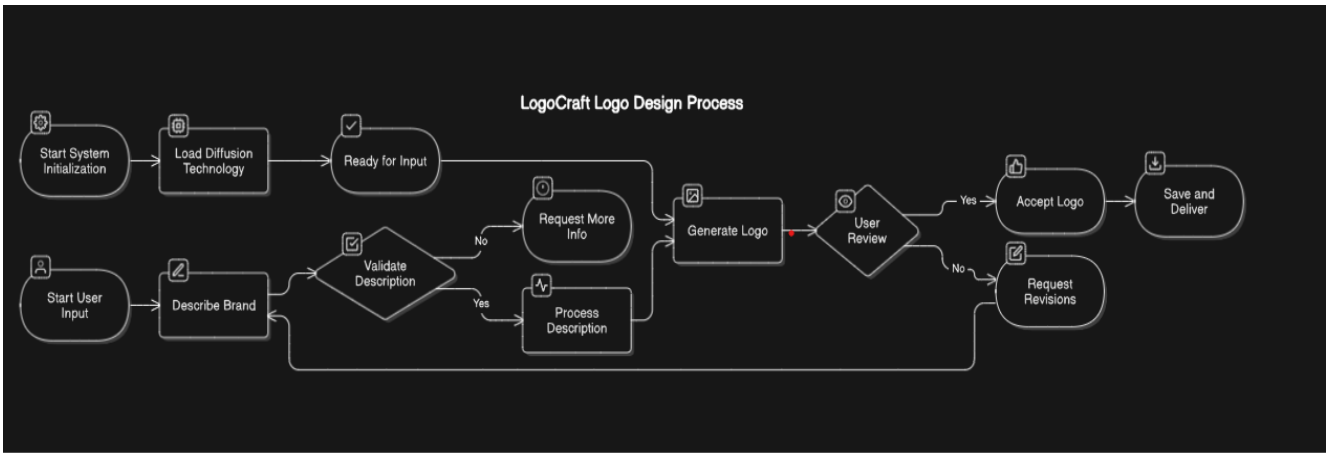
    - Downloadable in PNG, SVG, and other formats.

5. **Constraints & Challenges:**
    - Ensuring AI generates logos that match user descriptions.
    - AI-generated logos may take time, affecting user experience.
    - Providing enough flexibility while keeping the UI simple.

Phase-3: Project Design

Objective:

Develop the architecture and user flow of the application.



Key Points:

1. **System Architecture Diagram:**
    - React.js for UI, communicates with backend via API.
    - Python (Flask) handles AI logo generation and API requests.
    - Uses Diffusion technology to generate logos based on user descriptions.

2. **User Flow:**
    - User enters a description of the desired logo.
    - Backend processes input and AI generates a logo.
    - User previews the logo and downloads it in PNG, SVG, or other formats.

3. **UI/UX Considerations:**
    - Minimalistic design with easy navigation.
    - Clear prompt for users to describe their logo idea.
    - Display generated logos before downloading.

Phase-4: Project Planning (Agile Methodologies)

Objective:

Break down development tasks for efficient completion.

Sprint	Task	Priority	Duration	Deadline	Assigned To	Dependencies	Expected Outcome
Sprint 1	Environment Setup & API Integration	🔴 High	6 hours (Day 1)	End of Day 1	Sai Karthik	Stable Diffusion API, Python,	API connection established & working
Sprint 1	Frontend UI Development	🟡 Medium	2 hours (Day 1)	End of Day 1	Varun Kumar	API response format finalized	Basic UI with input fields
Sprint 2	User Description & Logo Generation	🔴 High	3 hours (Day 2)	Mid-Day 2	Tejashwini	API response, UI elements ready	Search functionality with filters
Sprint 2	Error Handling & Debugging	🔴 High	1.5 hours (Day 2)	Mid-Day 2	Ashritha & Shirisha	API logs, UI inputs	Improved API stability
Sprint 3	Testing & UI Enhancements	🟡 Medium	1.5 hours (Day 2)	Mid-Day 2	Sai Karthik	API response, UI layout completed	Responsive UI, better user experience
Sprint 3	Final Presentation & Deployment	🟢 Low	1 hour (Day 2)	End of Day 2	Entire Team	Working prototype	Demo-ready project

Key Points:

Sprint 1 – Setup & Integration (Day 1)

(🔴 **High Priority)** Set up the **environment** & install dependencies**.**
(🔴 **High Priority)** Integrate **Stable Diffusion API.**
(🟡 **Medium Priority)** Build a **basic UI with input fields.**

Sprint 2 – Core Features & Debugging (Day 2)

(🔴 **High Priority)** Implement **user description & Logo generation functionalities.**
(🔴 **High Priority)** Debug API issues & handle **errors in queries.**

Sprint 3 – Testing, Enhancements & Submission (Day 2)

(🟡 **Medium Priority)** Test **API responses,** refine **UI**, & fix **UI bugs.**
(🟢 **Low Priority**) Final **demo preparation & deployment.**

Phase-5: Project Development

Objective:

Implement core features of the LogoCraft project.

Key Points:

1. **Technology Stack Used:**
   - **Frontend:** React.js
   - **Backend:** Python
   - **Programming Language:** Python

2. **Development Process:**
   - Define project requirements, system architecture, and technology stack.
   - Build UI with React.js & integrate API endpoints from Flask/FastAPI.
   - Implement logo generation using Diffusion technology.

3. **Challenges & Fixes:**
   - **Challenge:** Slow Logo Generation.
     Fix: Optimize AI model processing and use caching for frequently generated logos.
   - **Challenge:** User Input Limitations.
     Fix: Improve text parsing to better understand complex logo descriptions.

Phase-6: Functional & Performance Testing

Objective:

Ensure that the LogoCraft Project works as expected.

Test Case ID	Category	Test Scenario	Expected Outcome	Status	Tester
TC-001	Functional Testing	Query " logo featuring a woven fabric pattern, a thread spool icon"	A logo according to the query should be displayed.	☑ Passed	Sai Karthik
TC-002	Functional Testing	Query " tech company logo with a minimalistic circuit-inspired design, bold typography"	A logo according to the query should be displayed.	☑ Passed	Ashritha
TC-003	Performance Testing	API response time under 500ms	API should return results quickly.	⚠ Needs Optimization	Shirisha
TC-004	Bug Fixes & Improvements	Fixed incorrect API responses.	Data accuracy should be improved.	☑ Fixed	Tejashwini

TC-005	Final Validation	Ensure UI is responsive across devices.	UI should work on mobile & desktop.	❌ Failed - UI broken on mobile	Varun Kumar
TC-006	Deployment Testing	Host the app using Streamlit Sharing	Website should be accessible online.	🚀 Deployed	Sai Karthik

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Final Submission

1. **Project Report Based on the templates**
2. **Demo Video (3-5 Minutes)**
3. **GitHub/Code Repository Link**
4. **Presentation**
