

**Hackathon Project Phases Template** that ensures students can complete it efficiently while covering all six phases. The template is structured to capture essential information without being time-consuming.

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# Hackathon Project Phases Template

## Project Title:

AI-Powered Multi-Language Translator

## Team Name:

VBIT INNOVATORS

## Team Members:

- Manya Thakur
  - M. Amitha Sri
  - N. Rajeshwari
  - V. Suhasini
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## Phase-1: Brainstorming & Ideation

### Objective:

- Identify the problem statement.
- Define the purpose and impact of the project.

### Key Points:

1. **Problem Statement:** AI-Powered Multi Language Translator
2. **Proposed Solution:** An AI-Powered Multi Language Translator allows users to communicate across multiple languages simultaneously.
3. **Target Users:** key benefits of using multi language translator will facilitates understanding between people speaking different languages at different places.
4. **Expected Outcome:** AI-Powered Multi Language Translator will translate source language to targeted language for any type of text.

## Phase-2: Requirement Analysis

### Key Points:

- **Technical Requirements:** Natural Language Processing (NLP), Machine Learning Models, Programming Language HTML.
  - **Functional Requirements:** Language Support, Translation Modes.
  - **Constraints & Challenges:** Technical Constraints & Challenges.
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## Phase-3: Project Design

### Objective:

- The architecture for a multi language translator is Frontend(user interface), Backend(API & Processing), And Database.
- The Userflow for a multi language translator is Input phase, Processing phase, And Output phase.

### Key Points:

1. **User Flow:** User opens the app, User provides the input, Language detection, Translation processing, Output display.
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## Phase-4: Project Planning (Agile Methodologies)

### Objective:

- Break down the tasks using Agile methodologies.

### Key Points:



1. **Sprint Planning:** Research and documentation, Backend & API developers, Frontend developers, Testing and deployment.
2. **Task Allocation:** Each team member is assigned specific tasks to ensure smooth development and testing of the Multi-Language Translator.

## Phase-5: Project Development

### Objective:

- Code the project and integrate components.










### Key Points:

1. **Technology Stack Used:** programming language HTML, & Google cloud translation API.
  2. **Development Process:** Steps followed for coding are :Project setup , Backend Development, Frontend Development, Testing and Final mile stone.
  3. **Challenges & Fixes:** Challenge: Incorrect Language Detection  
 Problem: The API sometimes misidentified the input language, leading to incorrect translations.  
 Fix: Implemented manual language selection as a fallback when auto-detection fails.
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## Phase-6: Functional & Performance Testing

### Objective:

- Ensure the project works as expected.

Test Case ID	Scenario Tested	Expected Outcome	Status
TC-01	Translate English → French	Displays correct translation	 Pass
TC-02	Auto-detect input language	Detects language accurately	 Pass
TC-04	Text-to-Text (Output)	Gives translated text clearly	 Pass
TC-05	API Response Time	Translation in < 1 second	 Pass
TC-06	Mobile Responsiveness	Works well on different screen sizes	 Pass
TC-07	Database Storage	Saves translation history correctly	 Pass
TC-08	Load Test (50 users at once)	No crashes, system handles load	 Pass
TC-09	Error Handling	Displays error messages for invalid inputs	 Pass
TC-10	UI Usability	Buttons, dropdowns, and text fields work smoothly	 Pass

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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**
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