HackathonProjectPhasesTemplatef
ortheAutoSageAppproject.

HackathonProjectPhasesT
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ProjectTitle:

logocraft

TeamName:

RUDHRA

TeamMembers:

- **Head: sourish**
- **Srikar**
- **Ganesh**
- **Vignesh**
- **Bhavani Prasad**

Phase-
1:Brainstorming&Ideation

Objective:

DevelopanAI-poweredvehicleexperttoolusingGeminiFlashtohelpuserscompareand analyze vehicle specifications, reviews, and eco-friendly options.

KeyPoints:

1. **ProblemStatement:**
    - Manyusersstruggletofindreliable,up-to-dateinformationabouttwo-wheelers and four-wheelers before making a purchase decision.
    - Usersalsoneedguidanceonvehiclemaintenanceandeco-friendlyvehicle choices.

2. **ProposedSolution:**
    - AnAI-poweredapplicationusing**GeminiFlash**toprovide**real-timevehicle specifications, reviews, and comparisons.**
    - Theappoffers**maintenancetips**and**eco-friendlyvehicleinsights**basedon user preferences.
3. **TargetUsers:**
    - **Vehiclebuyers**lookingforspecificationsandcomparisons.
    - **Vehicleowners**needingseasonalmaintenancetips.
    - **Eco-consciousconsumers**searchingforhybridandelectricvehicleoptions.
4. **ExpectedOutcome:**
    - A functional**AI-poweredvehicleinformationapp**thatprovidesinsightsbased on real-time data and user queries.

Phase-2:RequirementAnalysis

Objective:

DefinethetechnicalandfunctionalrequirementsfortheAutoSageApp.

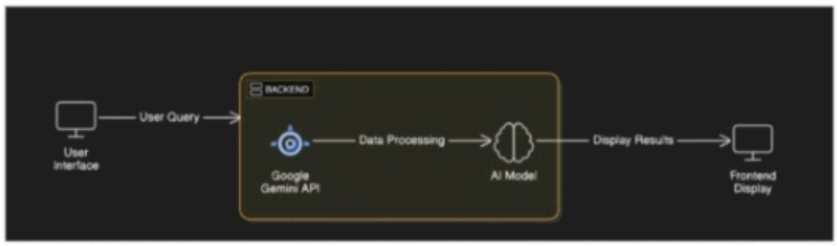
KeyPoints:

1. **TechnicalRequirements:**
    - ProgrammingLanguage:**Python**
    - Backend:**GoogleGeminiFlashAPI**
    - Frontend:**StreamlitWebFramework**
    - Database:**Notrequiredinitially(API-basedqueries)**
2. **FunctionalRequirements:**
    - Abilitytofetch**vehicledetails**usingGeminiFlashAPI.
    - Display**specifications,reviews,andcomparisons**inanintuitiveUI.
    - Provide**real-timevehiclemaintenancetips**basedonseasons.
    - Allowuserstosearch**eco-friendlyvehicles**basedonemissionsandincentives.
3. **Constraints&Challenges:**
    - Ensuringreal-timeupdatesfrom**GeminiAPI**.
    - Handling**APIratelimits**andoptimizingAPIcalls.
    - Providinga**smoothUIexperience**withStreamlit.

Phase-3:ProjectDesign

Objective:

Developthearchitectureanduserflowoftheapplication.



KeyPoints:

1. **SystemArchitecture:**
   - Userentersvehicle-relatedqueryviaUI.
   - QueryisprocessedusingGoogleGeminiAPI.
   - AImodelfetchesandprocessesthedata.
   - Thefrontenddisplays**vehicledetails,reviews,andcomparisons**.
2. **UserFlow:**
   - Step1:Userentersaquery(e.g.,"Bestmotorcyclesunder₹1lakh").
   - Step2:Thebackend**callstheGeminiFlashAPI**toretrievevehicledata.
   - Step3:Theappprocessesthedataand**displaysresults**inaneasy-to-read format.
3. **UI/UXConsiderations:**
   - **Minimalist,user-friendlyinterface**forseamlessnavigation.
   - **Filtersforprice,mileage,andfeatures**.
   - **Dark&lightmode**forbetteruserexperience.

Phase-4:ProjectPlanning(AgileMethodologies)

Objective:

Breakdowndevelopmenttasksforefficientcompletion.

Sprint	Task	Priority	Duration	Deadline	Assigned To	Dependencies	Expected Outcome
Sprint 1	EnvironmentSetup & API Integration	High	6 hours (Day 1)	EndofDay 1	Member 1	Google API Key, Python,Streamlit setup	APIconnection established & working
Sprint 1	Frontend UI Development	Medium	2 hours (Day 1)	EndofDay 1	Member 2	API response format finalized	BasicUIwithinput fields
Sprint 2	VehicleSearch& Comparison	High	3 hours (Day 2)	Mid-Day 2	Member 1& 2	APIresponse,UI elements ready	Searchfunctionality with filters
Sprint 2	ErrorHandling& Debugging	High	1.5 hours (Day 2)	Mid-Day 2	Member 1&4	APIlogs,UI inputs	ImprovedAPI stability
Sprint 3	Testing & UI Enhancements	Medium	1.5 hours (Day 2)	Mid-Day 2	Member 2& 3	APIresponse,UI layout completed	ResponsiveUI, better user experience
Sprint 3	FinalPresentation & Deployment	Low	1 hour (Day 2)	End-Day 2	Entire Team	Working prototype	Demo-ready project

SprintPlanningwithPriorities

Sprint1–Setup&Integration(Day1)

(🔴**HighPriority**)Setuptheenvironment&installdependencies.
(🔴**HighPriority**)IntegrateGoogleGeminiAPI.
(🟡**MediumPriority**)Builda**basicUIwithinputfields**.

Sprint2–CoreFeatures&Debugging(Day2)

(🔴**HighPriority**)Implement**search&comparisonfunctionalities**. (🔴 **High Priority**) Debug API issues & handle **errors in queries**.

Sprint3–Testing,Enhancements&Submission(Day2)

(🟡**MediumPriority**)TestAPIresponses,refineUI,&fixUIbugs.
(🟢**LowPriority**)Final**demopreparation&deployment**.

Phase-5:ProjectDevelopment

Objective:

ImplementcorefeaturesoftheAutoSageApp.

KeyPoints:

1. **TechnologyStackUsed:**
   - **Frontend:**Streamlit
   - **Backend:**GoogleGeminiFlashAPI
   - **ProgrammingLanguage:**Python
2. **DevelopmentProcess:**
   - Implement**APIkeyauthentication**and**GeminiAPIintegration**.
   - Develop**vehiclecomparisonandmaintenancetipslogic**.
   - Optimize**searchqueriesforperformanceandrelevance**.
3. **Challenges&Fixes:**
   - **Challenge:**DelayedAPIresponsetimes.
     Fix: Implement**caching**tostorefrequentlyqueriedresults.
   - **Challenge:**LimitedAPIcallsperminute.
     Fix: Optimizequeriestofetch**onlynecessarydata**.

Phase-6:Functional&PerformanceTesting

Objective:

EnsurethattheAutoSageAppworksasexpected.

Test CaseID	Category	TestScenario	ExpectedOutcome	Status	Tester
TC-001	Functional Testing	Query"Bestbudgetcars under ₹10 lakh"	Relevantbudgetcars shouldbedisplayed.	✅Passed	Tester1
TC-002	Functional Testing	Query "Motorcycle maintenancetipsfo winter"	Seasonaltipsshould be provided.	✅Passed	Tester2

Phase-6:Functional&PerformanceTesting

Objective:

EnsurethattheAutoSageAppworksasexpected.

Test CaseID	Category	TestScenario	ExpectedOutcome	Status	Tester
TC-001	Functional Testing	Query"Bestbudgetcars under ₹10 lakh"	Relevantbudgetcars shouldbedisplayed.	✅Passed	Tester1
TC-002	Functional Testing	Query "Motorcycle maintenancetipsfor winter"	Seasonaltipsshould be provided.	✅Passed	Tester2
TC-003	Performance Testing	APIresponsetimeunder 500ms	APIshouldreturn results quickly.	⚠ Needs Optimization	Tester3
TC-004	Bug Fixes & Improvements	FixedincorrectAPI responses.	Dataaccuracyshould be improved.	✅Fixed	Develop er
TC-005	Final Validation	EnsureUIisresponsive across devices.	UIshouldworkon mobile&desktop.	❌Failed - UI brokenonmobile	Tester2
TC-006	Deployment Testing	Hosttheappusing Streamlit Sharing	App should be accessibleonline.	🚀 Deployed	DevOps

FinalSubmission

1. **ProjectReportBasedonthetemplates**
2. **DemoVideo(3-5Minutes)**
3. **GitHub/CodeRepositoryLink**
4. **Presentation**