HACKTIDE
24-HOUR HACKATHON
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PROBLEM STATEMENTS

1) Personal Productivity Intelligence Platform

The Story

A software engineer starts her day checking emails, then moves to Slack messages, reviews meeting notes in Google Docs, updates tasks in a to-do app, and checks her calendar for deadlines. By noon, she has interacted with five different tools - but still feels unsure about what truly matters most today. Important information is scattered across platforms, priorities are unclear, and constant switching between tools drains focus. Despite using powerful productivity software, she spends more time figuring out what to work on next than actually doing meaningful work. Over time, this fragmented way of working leads to stress, missed priorities, and burnout without any system noticing the problem early or helping her course-correct.

The Objective

Design and build an AI-powered Personal Work Operating System that observes how a user works across different tools such as email, chat applications, documents, calendars, task lists, and cloud drives, and builds a clear, continuously updated understanding of what the user is working on. Instead of requiring users to manually enter or manage everything, the system should learn from normal work activity and help users stay focused, organized, and confident about their priorities.

Your system should be able to:

Connect related information across tools, so emails, messages, documents, meetings, and files related to the same work are grouped together

Help decide what is most important to work on next by considering deadlines, urgency, and ongoing tasks

Show useful information at the right moment, such as relevant emails, files, or notes when the user starts or switches tasks

Identify unhealthy work patterns, such as frequent task switching, long working hours, ignored important work, or signs of overload, and gently highlight them

The Core Outcome

At a minimum, your solution should clearly demonstrate the following:

• A single, combined view of the user’s work:
Information from emails, messages, documents, calendar events, and tasks should be brought together so the user can understand their current work in one place.

• Automatic identification of tasks or goals from user activity:
The system should recognize what the user is working on by observing actions such as emails sent, files edited, or meetings attended—not only through manually added tasks.

• Clear suggestions on what to work on next:

The system should recommend the next important action based on deadlines, urgency, or ongoing work, and clearly explain why that suggestion was made.

• Basic insights into work habits:
The solution should highlight patterns such as frequent context switching, too many parallel tasks, ignored priorities, or early signs of overload.

• A helpful and non-disruptive assistant experience:
The assistant should feel trustworthy, provide explanations for its suggestions, respect user privacy, and avoid unnecessary or constant interruptions.

2) AI AGENT for Company Websites

The Story

Imagine a student logging into a university portal for the first time. The dashboard is crowded with links, menus, and unfamiliar terms. Assignments are hidden under nested tabs, quiz results are buried inside multiple sections, so user find difficult in navigation. The student knows what they are looking for, but not where to find it. After several clicks, confusion grows, time is wasted, and frustration sets in. This experience is not limited to academic portals customers visiting banking websites, government portals, e-commerce platforms, or enterprise dashboards face the same challenge when navigating complex systems without guidance. Most websites assume prior familiarity and offer static help pages or FAQs that fail to assist users in real time. As a result, first-time users struggle to complete even simple tasks, leading to poor user experience, repeated support requests, and abandonment of the platform.

The Objective

Build an intelligent AI agent assistant that should be a Company-specific agent for their website (Company website to be built by yourself), or you can create an agent for general navigation assistant for any website. The system should understand user intent through natural language queries, retrieve accurate information from the website's content or internal data sources, and guide users or autonomously perform navigation and task-oriented actions within the website. By enabling contextual assistance for both generic and application-specific use cases, the objective is to simplify user interaction with complex websites, improve accessibility to information for first-time users, and enhance overall user experience through intelligent, conversational guidance.

The Core Outcome

• Unified understanding of the website and user intent:
The system should be able to interpret the website's structure, content, and navigation flow while simultaneously understanding the user's natural language queries, allowing it to provide relevant guidance without requiring prior familiarity with the site.

• Accurate retrieval of website-specific information:
The solution should retrieve correct, up-to-date information from the

website's internal data sources, pages, or knowledge base, ensuring that responses are grounded in actual site content and not generic assumptions.

• Actionable guidance or automated navigation support:
The assistant should either guide users step-by-step through the website or perform navigation actions on their behalf, clearly indicating where information is located or how tasks can be completed within the site.

3) AI Advertising and Fundraising Assistant for Small Businesses

The Story

Consider a small, family-run business that sells niche products. The business offers quality products and has loyal repeat customers, but its growth has stalled. The owner manages everything alone, has no marketing team, limited technical knowledge, and very little time to experiment with digital promotion.

The owner is aware that platforms like Instagram, YouTube, or online marketplaces could help reach new customers, but does not know what content to create, where to post it, how frequently to engage, or how much effort or cost would be involved. Some activities could be automated, some could be assisted by tools, and others require manual involvement, but the vendor has no clear way to decide what is feasible given their constraints. Paid promotions feel risky and expensive, organic reach is uncertain, and while the business has ideas for expansion, there is no clear execution or support pathway.

As a result, the business remains largely invisible to new customers and potential supporters who would genuinely value its offerings, limiting both growth and long-term sustainability.

Objective

Design and build an AI-powered assistant for small businesses that helps vendors grow, advertise, and expand intelligently, based on their real-world constraints such as available budget, available time, available human resources, business type and niche, and growth goals including visibility, revenue, or expansion.

The system should intelligently determine what activities can be automated, which should be AI-assisted, and which require human effort. It should reduce dependency on technical skills and marketing expertise, minimize manual workload, and enable sustainable, resource-aware growth along with community-driven support for small businesses.

Core Outcomes

• AI Assistant for Resource-Aware Business Growth:
The AI assistant should act as a virtual business growth manager. It should understand the vendor's situation holistically and recommend actions that are realistically possible, explicitly considering constraints and deciding where automation is appropriate and where human involvement is necessary.

The assistant may support or automate parts of content creation, promotion planning, platform selection, and posting or scheduling workflows, either conceptually or through partial implementation.

• Fundraising, Collaboration, and Community Support Platform:
Beyond advertising and promotion, the system should support business expansion by enabling structured support from others. Vendors should be able to pitch their business or expansion ideas and specify funding or resource needs, such as capital, skills, partnerships, or tools.
• Additionally, the project must include a fundraising and/or collaboration feature where vendors can request support and other users can fund, collaborate, or express interest. Overall, the solution should clearly demonstrate value for non-technical vendors through simplicity, reduced manual effort, and a minimal learning curve.

4) The Workforce Contribution Monitor

Story

In the modern remote or hybrid workplace, visibility is no longer synonymous with productivity. Engineering and product teams work in complex, interconnected webs for communication (Ex: Slack, Teams) and execution (Ex: Jira, GitHub). Managers often rely on who speaks up most in stand-ups, who is online the longest, or who has the highest number of Git commits to determine performance ratings. This creates an illusion where an employee is highly active in public channels, constantly tagging management, and creating the illusion of leadership. However, their actual output might be minimal, or they act merely as a router, passing work to others without adding value. When performance review season arrives the Manager often biases toward the loud and active one whilst the actual silent architects feel undervalued.

Objectives:

Bridge the "Activity vs. Impact" Gap:
Develop a system that correlates data from Communication Platforms (If any) with Execution Platforms (GitHub).

Define Your Own "True Contribution" Metrics:
Derive a set of metrics or a scoring algorithm that weighs the quality of work over the quantity of artifacts. How do you value a critical bug fix vs. a feature launch? How do you value a mentor vs. a coder?

Actionable Visibility:
Transform raw logs into a manager-friendly dashboard that highlights the "Silent Architects" those contributing high value with low visibility ensuring they are not overlooked during performance reviews.

The Core Outcome

A Manager’s dashboard to monitor his/her team or multiple teams. A visual interface that allows a manager to monitor a single team or multiple squads. This shouldn't just be a list of names and numbers, it must visualize the disparity between "Perceived Activity" (e.g., raw commit counts or volume) and "Actual Impact" (e.g., complexity solved or critical path work). It needs to highlight the "Silent Architects" who might otherwise go unnoticed.

A tool that will monitor the Execution Platforms and collect the data based on which you will quantify the contribution. It must automatically parse this data

to extract meaningful signals which will be the truth on which the value is quantified.
Your logic that quantifies the value of work and remains stable regardless of whether the team size is 3 or 50. You must show that your scoring system doesn't break or become incredibly noisy just because the team size grows from 3 to 50 people. The value is to only rank the employees within a team; it need not have any relation with the scores of employees in other teams.

5) AI-Driven Transparency for Opaque Platform Pay Formulas

Story

Imagine a gig worker starting their day on a platform like Uber, DoorDash, Instacart, or Ola. They complete trips and deliveries, but their earnings fluctuate without explanation. Two similar jobs pay differently, surge bonuses appear and disappear, and task offers drop suddenly with no warning. Because the platform's algorithm operates as a black box, workers cannot understand how decisions are made, whether they are treated fairly, or how to plan their income creating uncertainty, financial risk, and an unequal power dynamic between workers and platforms.

Objective

To build a multilingual, worker-centric system that analyzes gig-work task and payment data to uncover how platform algorithms influence pay, task assignment, and opportunities. The system will infer likely pay formulas, detect hidden behavioural or policy changes, identify potential bias across workers or groups, and present findings in clear, accessible reports turning opaque algorithmic decisions into transparent, explainable insights that workers and advocates can use for accountability and informed action.

Core Outcomes

• Algorithm Transparency:
Derive a clear, data-backed explanation of how pay and task-assignment decisions are made.
• Change Detection:
Identify undocumented shifts in platform behaviour and quantify their impact on worker earnings.
• Fairness Assessment:
Detect and evidence potential bias or unequal treatment across workers or groups.
• Worker Centred Reporting:
Produce concise, visual reports that translate algorithmic insights into practical transparency and empowerment.

6) Learning-Aware Generative AI System

The Story

Imagine a teacher preparing lesson material for a diverse classroom. Some students are encountering a topic for the very first time, while others are ready to explore it in greater depth. To manage time and workload, the teacher relies on an AI system to generate explanations, examples, and practice questions.

Initially, the content appears clear and structured.
However, as the teacher reviews it carefully, problems begin to surface. A few facts are inaccurate, certain explanations do not match the students' learning level, and some sections do not align with the prescribed curriculum. The teacher is forced to spend hours validating content, correcting errors, and checking for hidden biases. The same challenge affects students who use AI for self-study and institutions that deploy AI-based learning platforms. Without strong safeguards, AI-generated educational content can confuse learners, misrepresent concepts, and drift away from intended learning goals.

The Objective

Design and build an AI-driven educational content generation system that can reliably create learning material that is factually correct, curriculum-aligned, and appropriate for different student levels. The system should understand educational standards, learning objectives, and subject structure to ensure relevance and accuracy. A key focus is preventing hallucinations, minimizing bias, and maintaining strict correctness while supporting scalable content creation for classrooms, self-learners, and institutions.

The Core Outcome

At a minimum, your solution should clearly demonstrate the following:

• Curriculum-aware content generation:
The system should generate educational material that aligns with defined curricula, syllabi, or learning standards.

• Strong correctness and hallucination prevention:
The solution should actively reduce factual errors, unsupported claims, and fabricated information in generated content.

• Level-appropriate explanations:
Content should adapt to different learner levels (beginner, intermediate, advanced) without oversimplifying or overcomplicating concepts.

• Relevance to learning objectives:
Generated material should stay focused on intended outcomes, avoiding unnecessary or off-topic information.

• Bias-aware and responsible content creation:
The system should minimize biased language or perspectives and produce fair, inclusive educational material.