Project Plan Proposal

Hire Start

Team 9

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1. Cover Letter

To,
Dr. Andrei Guschin
College of Engineering
Northeastern University
Seattle, WA-98109

April 19, 2023

Subject: Proposal for developing an application called Hire Start

Dear Dr. Guschin,

We are pleased to submit a project proposal for developing an application called Hire Start. Most of the start-ups fail nowadays due to poor understanding of the market, unskilled labor, mediocre marketing strategies and business plans. This application will provide as a tool to freelancers and start-ups to connect with each other. The candidates can make their profiles and enter the details like qualifications, skills, experience, preferred location and pay range. By using artificial intelligence and machine learning algorithms the freelancer's profile will be matched to the company's requirements. Task delegation will be done using data analysis techniques and predictive modeling. This tool will bridge the gap between the start-ups and freelancers. A strong technical team is very crucial for the proper development and maintenance of this application.

An office would be set up in California because of its consideration of an IT hub as Silicon Valley is located in this state. The report elaborates the specific tasks involved to successfully accomplish the project along with the resources, time schedule and financial figures. This project will help the start-ups grow with skilled labor and better marketing plans. Acquaintance of proper resources will help in maximizing the profits. The cost of the entire project is $810,000 and would take approximately 120 days to be completed. The estimated start date is 1st January 2024 and estimated end date is 30th April 2024.

Sincerely,
Maddie Mills
Mia Burfoot
Mishaal SyedNaveed
Naga Sumanth Reddy Bareddy
Ojasvi Pravin Dere

2. Executive Summary

This project aims to develop a tool for start-ups to streamline the hiring process, make informed business decisions, optimize advertising endeavors, and minimize the capital for prototyping. The tool will utilize artificial intelligence and machine learning to match freelancing job candidates with open positions based on skills, qualifications, experience, location, and compensation range. It will also use data analysis and predictive modeling to delegate tasks to individuals and/or teams based on project necessities. The tool will employ agile development methodologies and rapid prototyping techniques to minimize capital consumption and optimize advertising endeavors through designated marketing and social media management.

The project will follow a comprehensive methodology that includes briefing project statements, finding insights, defining KPIs, gathering essential data, keeping it in a user-readable format, developing and testing the tool, deploying, and supporting the tool. The timeframe for the project is estimated to be 17 weeks.

To achieve the objectives of the project, the team will need several resources, including a team of developers with expertise in relevant programming skills and frameworks, a project manager to oversee development and ensure it stays on track, designers to create UIs, wireframes, and other visual components, data analysts or scientists to gather and analyze data, and specific hardware and software required for development, testing, and deployment.

The project aims to assist start-ups in reducing the failure rate of new enterprises by providing a prototype tool that optimizes the hiring process, informed decision-making, advertising, and minimizes capital consumption for prototyping.

3. Project Objectives

The objective of this project is to develop a tool for start-ups that idealizes hiring, make business decisions, advertise, and minimize the capital for prototyping.

- Streamlining the hiring process by using artificial intelligence and machine learning to match freelancing job candidates with open positions based on skills, qualifications, experience, location, and compensation range.

- Utilizing data analysis and predictive modeling to delegate the tasks to individuals and/or teams based on project necessities and make informed business decisions.

- Minimizing capital consumptions by utilizing agile development methodologies and rapid prototyping techniques to quickly test and validate innovative ideas.

- Optimizing advertising endeavors through designated marketing and social media management to reach the most significant audiences.

Critical Success Factors

- Complete the project on time within the specified number days.

- File progress reports on time within the schedule to keep the project on track and have everything fully documented.

- Always maintain safety for all employees and users.

- Try to stay within the specified budget but document any changes or situations that may arise.

- Value customer opinion and input.

4. Project Organization

See **Appendix A** for full project organization chart.

- Development and testing team: A team of developers with an expertise in relevant programming skills and frameworks may be needed to build, test, and deploy the tool.
- Project management: A project manager will be needed to oversee the development of the tool and ensure that the project stays on track and within budget.
- Design and user experience: A designer or team of designers may be needed to create UIs, wireframes, and other visual components for the tool.
- Data and analytics team: Data must be gathered and analyzed to make business decisions; this requires data analysts or data scientists.
- Hardware and software: Depending on the tool, specific hardware and software could be required for its development, testing, and deployment.
- Marketing team: To promote and market the tool to attract users and generate revenue.

Table 1. Project Team Organization and Assumptions

Item	Budget	Assumptions
Development	$225,000	Assume each developer makes $78,000/year. We hire 3 developers for 1 year.
Project management	$100,000	Project manager salary for startup is ~$100,000/year. Assumed PM works for 1 year.
Hardware	$3,000	Assuming 3 computers and a server would be used.
Software	$1,500	Open source software would be used majorly but some might include annual subscription fees.
Marketing	$25,000	Includes market research, ad spending, influencer campaigns – total budget should be about 5% of total revenue
Initial capital	$20,000	Assuming office is in the DC Metro Area ($40/sq.ft.), 1-year lease contract, and office supplies from local stores.

5. Implementation Plan

The implementation plan is composed of five components. The work breakdown structure details each section of work to be completed by different teams of people. The responsibility chart includes the same teams of people and their main responsibilities for the duration of the project. The scheduling of the project is broken down using a GANTT Chart and PERT Analysis.

5.1 Work Breakdown Structure

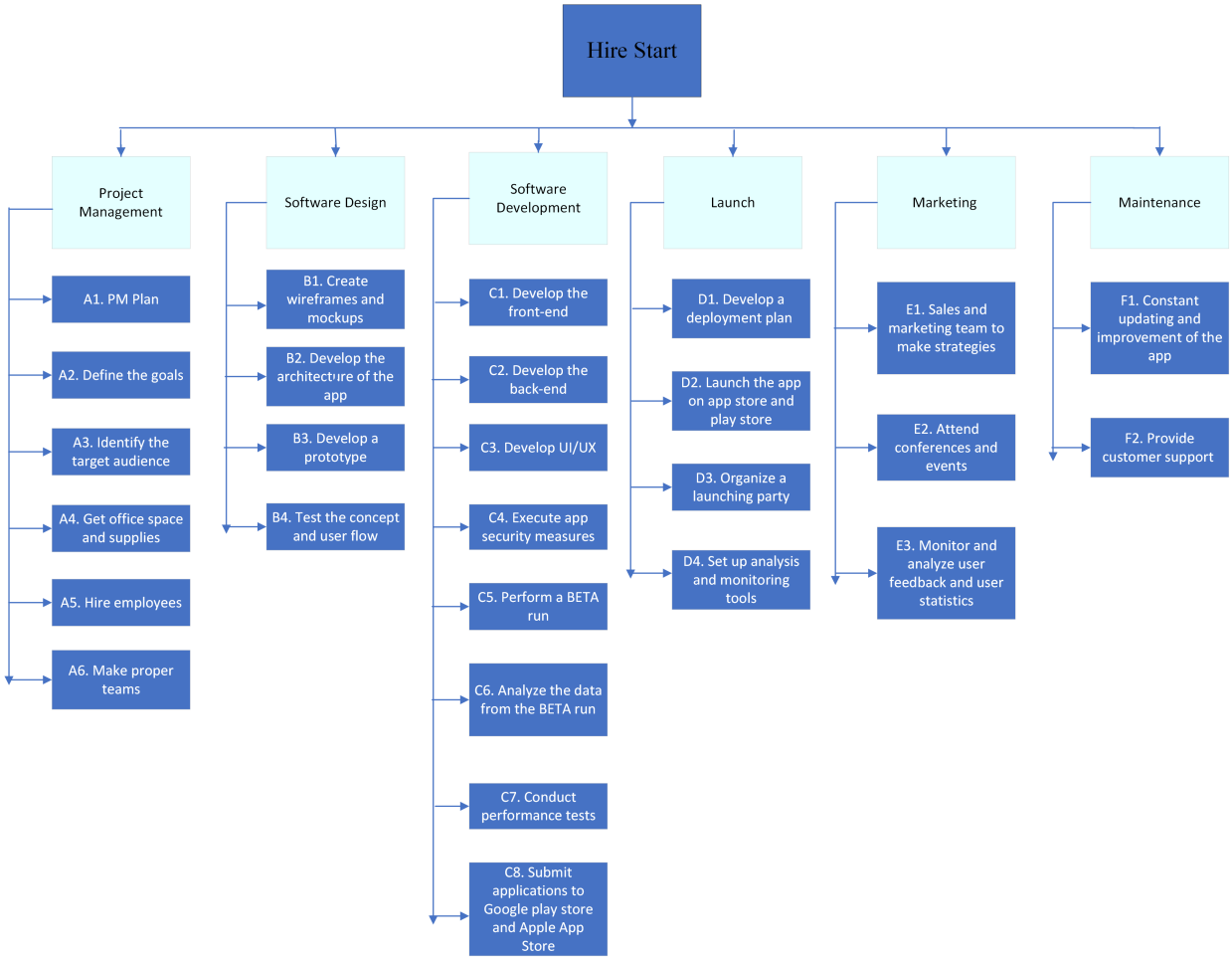

Figure 1. Work Breakdown Structure (WBS)

5.2 Responsibility Chart

Table 2. Responsibility Chart with Legend

Sub Project	Task	CEO	GM	Des&Dev Manager	Financial Manager	Marketing Manager	Law Suit Manager	Operations Manager
Project Management	A1	#	^		*	@		@
	A2	#	^		*	@		@
	A3	#	^		*	@		@
	A4	#	^		*	@		@
	A5	#	^		*	@		@
	A6	#	^		*	@		@
Software Design	B1	@	#	^	@			
	B2	@	#	^	@			
	B3	@	#	^	@			
	B4	@	#	^	@			
Software Development	C1	@	#	^	@			
	C2	@	#	^	@			
	C3	@	#	^	@			
	C4	@	#	^	@			
	C5	@	#	^	@			
	C6	@	#	^	@			
	C7	@	#	^	@			
	C8	@	#	^	@			
Launching	D1	@	#	#	@		#	^
	D2	@	#	@	@		#	^
	D3	@	#		@	*		^
	D4	@	#	#	@			^
Marketing	E1	@	#		@	^		^
	E2	@	#		@	^		^
	E3	@	#		@	^		^
Maintenance	F1	@	#		@			^
	F2	@	#		@			^

Legend:
^ - Responsible
- Report & Approve
* - Support
@ - Notify

5.3 Scheduling

Scheduling is a crucial part of project success. Using a GANTT chart and PERT Analysis (Network Flow Diagram) the scheduling analysis was done.

5.3.1 GANTT Chart

See **Appendix B** for full GANTT Chart

5.3.2 PERT Analysis

See **Appendix C** for the full PERT Analysis (Network Diagram).

6. Risk Analysis

Data Bias
The tools used for this project will utilize artificial intelligence ("AI"). Such that use human-developed materials and computer algorithms to generate new content. There is a possibility that the data could be biased and can lead to unwanted discrimination for users.

Lack of Transparency
The tools used for the start-ups could lead to distrust and suspicion given how complex the algorithm is. It is difficult to showcase why certain decisions were made for potential customers.

Cybersecurity Risk
Possibility for the data to be hacked if not properly guarded which could result in data breaches, financial losses, etc.

Regulatory Risks
May be prone to future regulatory issues as AI gets advanced and could pose a legal issue for the company.

IP Property Risk
Given the algorithm use human-developed materials, it is tough to determine whether the material AI produces can even be protected by copyright. US law establishes that "copyright can protect only material that is the product of human creativity."

Competitors
With all industries, competition will be present.

Public Misinformation
The use of these tools can create backlash for users who are not getting acceptable results.

Financial Crisis
If the market is down, it is not a habitable environment for a new start-up.

Physical Damage
Theft or harm to any of the staff of the company.

Employee Shortage
If the job market is not favorable, it will be hard to find qualified candidates.

A qualitative risk analysis brings awareness to the company's stakeholders of challenges and dangers that may arise. An analysis to determine the consequence and likelihood of risks is used to determine the threat level to the company. The Risk Matrix below clearly displays to the stakeholders the threat levels of the risks.

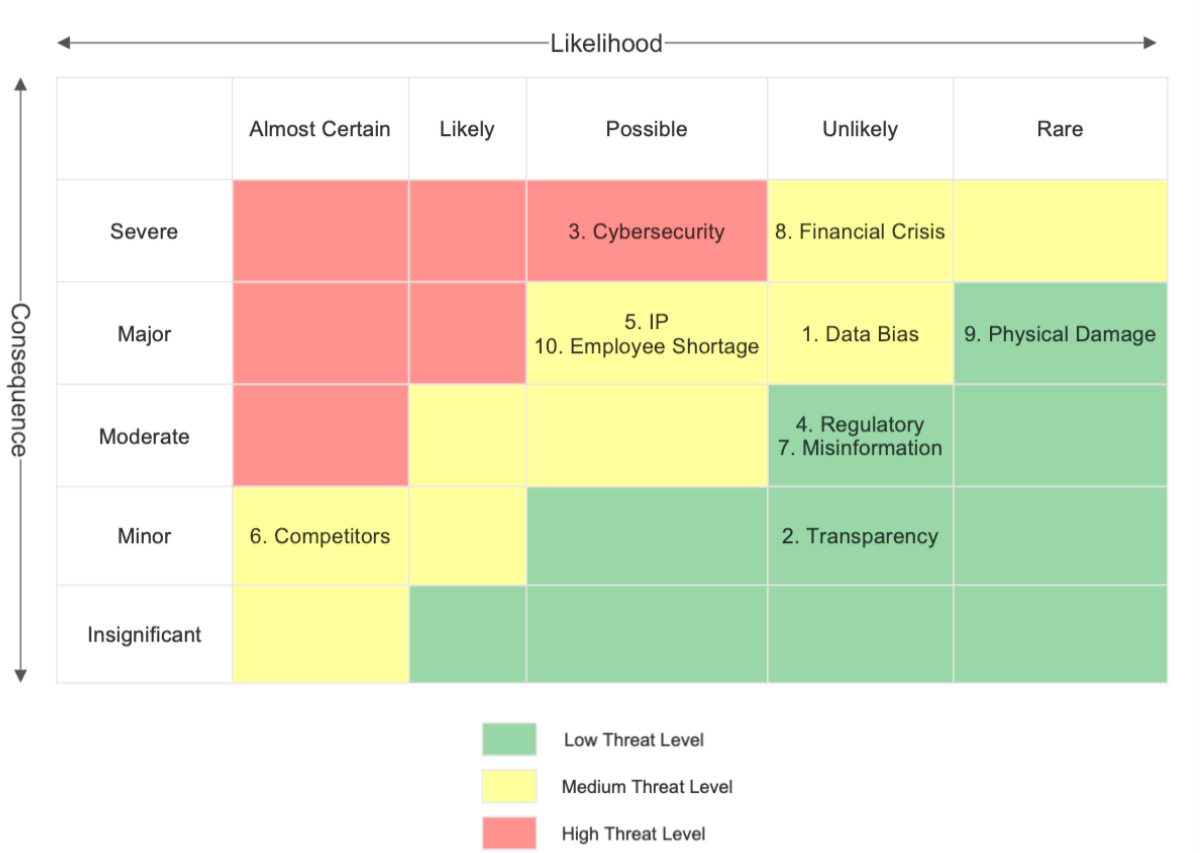

Figure 2. Risk Matrix Evaluating Top Ten Risks

A Quantitative Risk Analysis was completed to prioritize the risks to the company. A risk priority number (RPN) was calculated below based on a 1-10 scale that was assigned to severity, likelihood, and detectability of each risk identified.

Table 3. Quantitative Risk Analysis with FMEA RPN

Threat	Severity	Likelihood	Ability to Detect	RPN
Data Bias	7	3	8	168
Lack of transparency	3	3	7	63
Cybersecurity	10	6	6	360
Regulatory	5	3	2	30
Intellectual Property	7	6	8	336
Public Misinformation	6	3	2	36
Financial Crisis	9	4	4	144
Physical Damage	8	1	1	8
Employee Shortage	7	5	2	70

7. Monitoring & Control

This project's success relies on the collaboration of the entire team. It is essential for the General Manager "GM" and Project Manager "PM" to direct the team to meet goals. Individual line managers as denoted in the "Organization Chart" will be responsible for their individual team members.

Although "chain of command" is recognized within this project, a free flow of communication is also necessary. It is recommended for the GM to meet with all managers at the beginning of the week to set expectations and milestones. It is also recommended that individual line managers meet with their team members in the beginning of the week to discuss those same expectations and milestones. To document day-to-day activities, project milestones, deadlines, etc., a software shall be used. Several types of software are available in the market to meet the beforementioned. "Asana", for example, is a web-based project management tool designed to help teams and individuals track and manage their tasks and projects. "Asana" enables users to establish and manage projects, assign tasks to members, establish deadlines, and wholistically track progress in real-time.

Table 4. Progress Reports Timeline

Report #	Due
Inception report 1.0	To be completed after company is registered (around the time WBS #1.2 is completed)
Progress Report 1.0	After completion of WBS #1.4
Progress Report 1.1	After completion of WBS #2.4
Progress Report 1.2	After completion of WBS #2.8
Progress Launch Report 1.0	After completion of WBS #3.1
Progress Launch Report 1.1	After completion of WBS #3.4
Product Report 1.0	Final report and to be completed at WBS #4.0
Product Report #.#	Reserved for future reports

The PM will be responsible for assembling the reports mentioned in Table 1 in a unique and consistent format. Each report consists of many sections, but in general should provide a thorough analysis of all progress backed up by data, financial information, statistics, etc. These reports should be visible across the company. Publishing these reports internally, has several benefits such as increasing productivity, appreciating team collaboration, etc.

The PM will also be responsible for a critical ratio/progress table as shown in Table 2. This table is just an example of that would be used to help monitor the progress of each phase. The phases are also represented in the financial plan with a breakdown of each budgeted cost. Using this table will help determine if the project is on the right track or if there are any phases that are in need of moving along or taking their time.

Table 5. Progress Table Outline with Critical Ratios

Phase	Actual Progress	Scheduled Progress	Budgeted Cost	Actual Cost	Critical Ratio
1	-	165	$61,000	-	
2	-	237	$209,000	-	
3	-	157	$90,000	-	
4	-	127	$450,000	-	

Contingency Plan

To ensure that the project stays within budget and meets the planned timeline, a contingency plan with a 12% buffer on the budget and timeline will be applied. This will account for unexpected cost increases on supplies, labor, and/or rentals and delays to the schedule. Additionally, it will be important to regularly track the projects progress and use small milestones to identify problems early. Once problems are identified that impact budget and schedule, decisions can be altered to minimize the effect to the project plan.

Marketing Plan

To begin the planning phase of this project, a marketing team will be deployed to identify the target market. This will be used to tailor the messaging and positioning to effectively engage the chosen audience. Next, a marketing plan will be made to develop a comprehensive strategy using online and offline tactics. This will include media advertising, email campaigns, events, and personal meetings. Finally, data will be collected and used to refine and improve marketing techniques.

8. Financial Plan & Resource Allocation

The financial plan shows what the estimated costs will be for this project. Outlining specific and overall costs for company formation, software development, marketing and launch, and maintenance.

The projected cost for phase 1 is $61,000. The projected cost for phase 2 $209,000. The projected cost for phase 3 $90,000. The projected cost for phase 4 is $450,000. For a total estimated cost of $810,000.

The following are assumption that have been made for this financial analysis:

1. The technology costs for licenses, hardware, and software have been included.
2. The overhead expenses of rent, supplies, utilities, and monthly employee salaries have been included.
3. The expenses for legal documents have also been incorporated.

Please see **Appendix D** for the fully outlined financial plan.

9. Conclusion

With Artificial Intelligence (AI), hitting all facets of the industry, companies should use those tools to maneuver through any business struggles. "Hire Start" aims to develop a tool for companies to streamline the hiring process, make informed business decisions, optimize advertising endeavors, and minimize capital for prototyping. The AI-based software will revolutionize how companies conduct business.

With the help of several initial resources, including developers, a project manager, designers, data analysts, and specific hardware and software, the goal is to assist start-ups in reducing the failure rate of new enterprises.

It is our pleasure to serve you and we appreciate the time and consideration.

10. Appendix

Appendix A

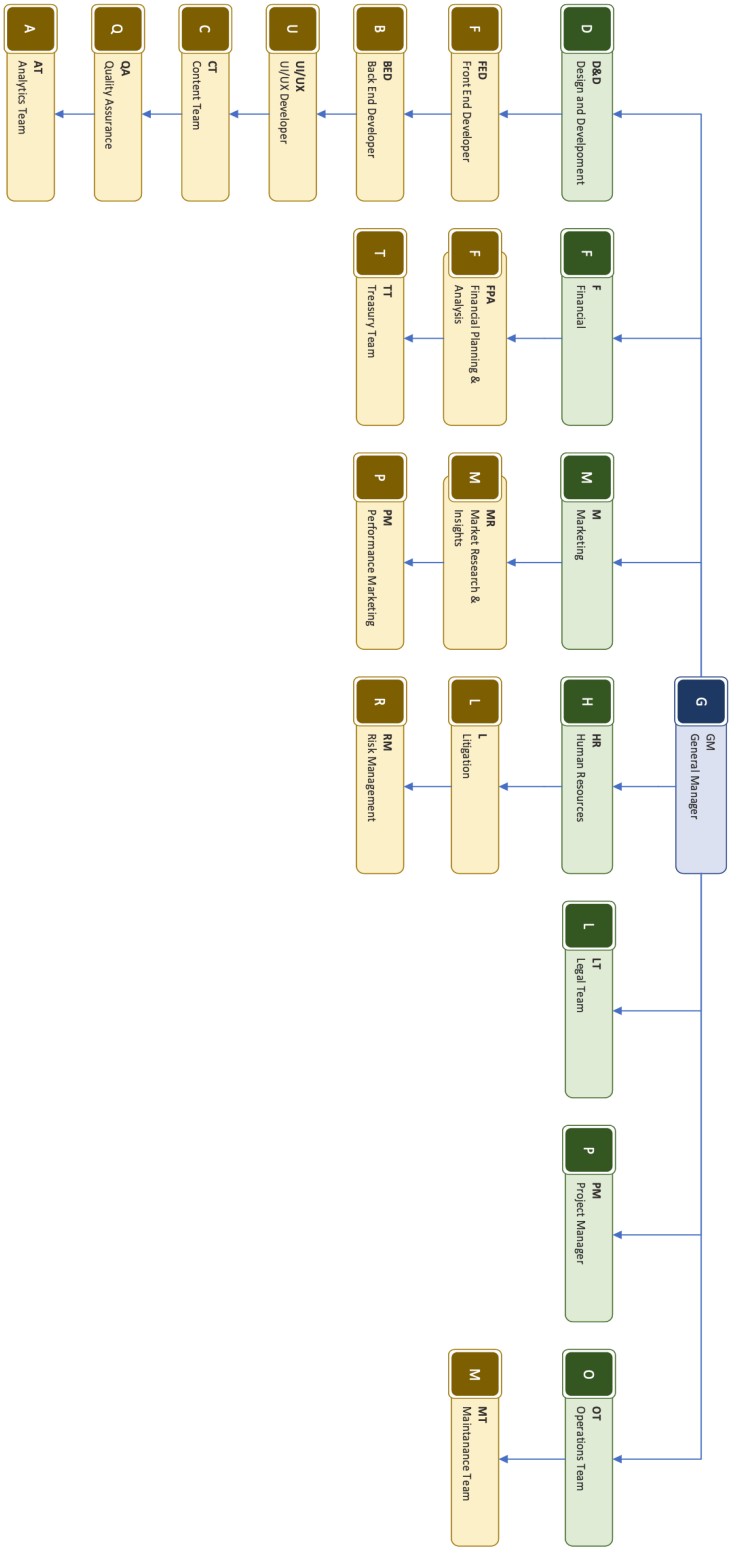

Figure 3. Project Organization Chart (Org Chart)

Appendix B

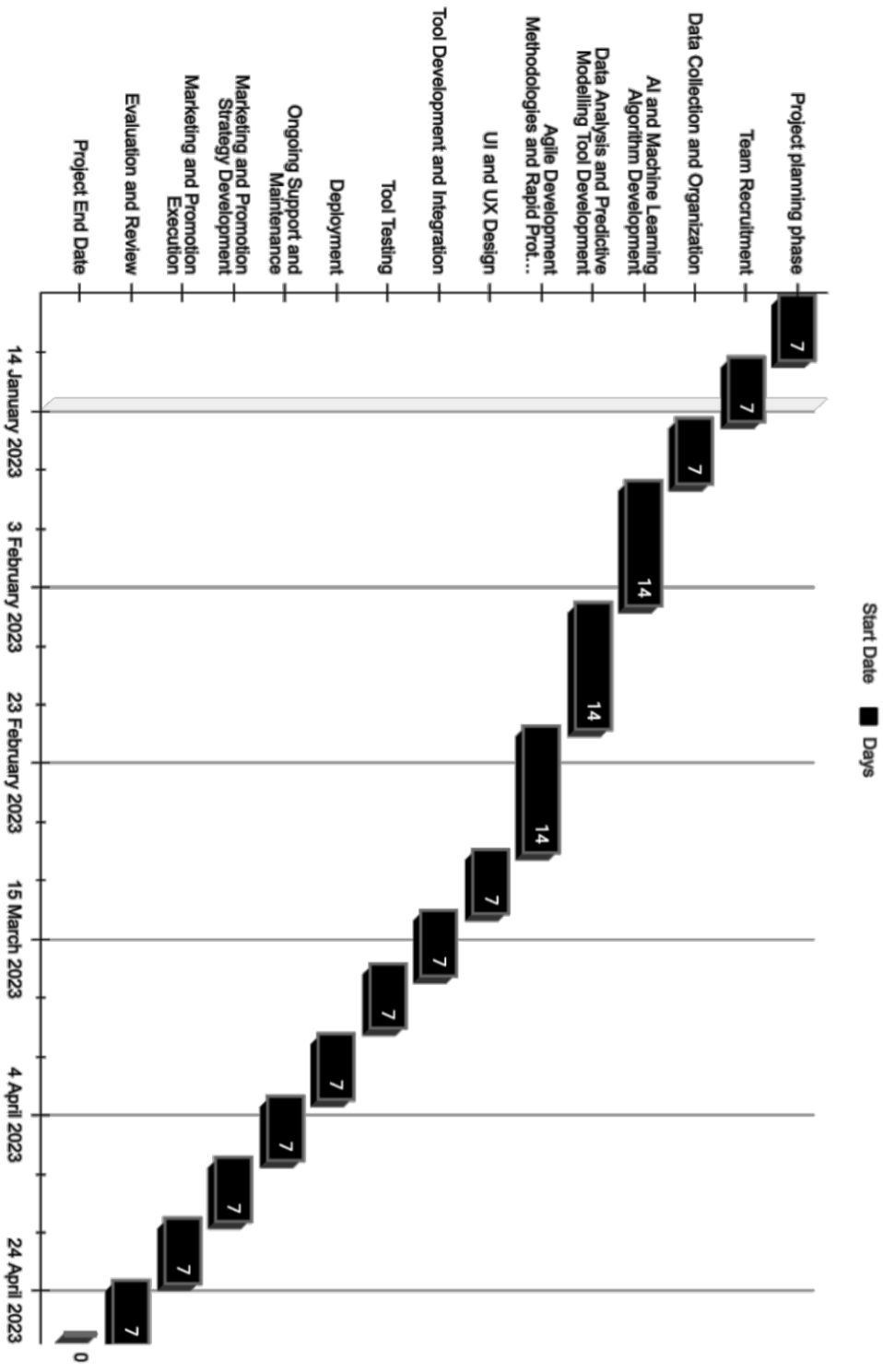

Figure 4. Full GANTT Chart

Appendix C

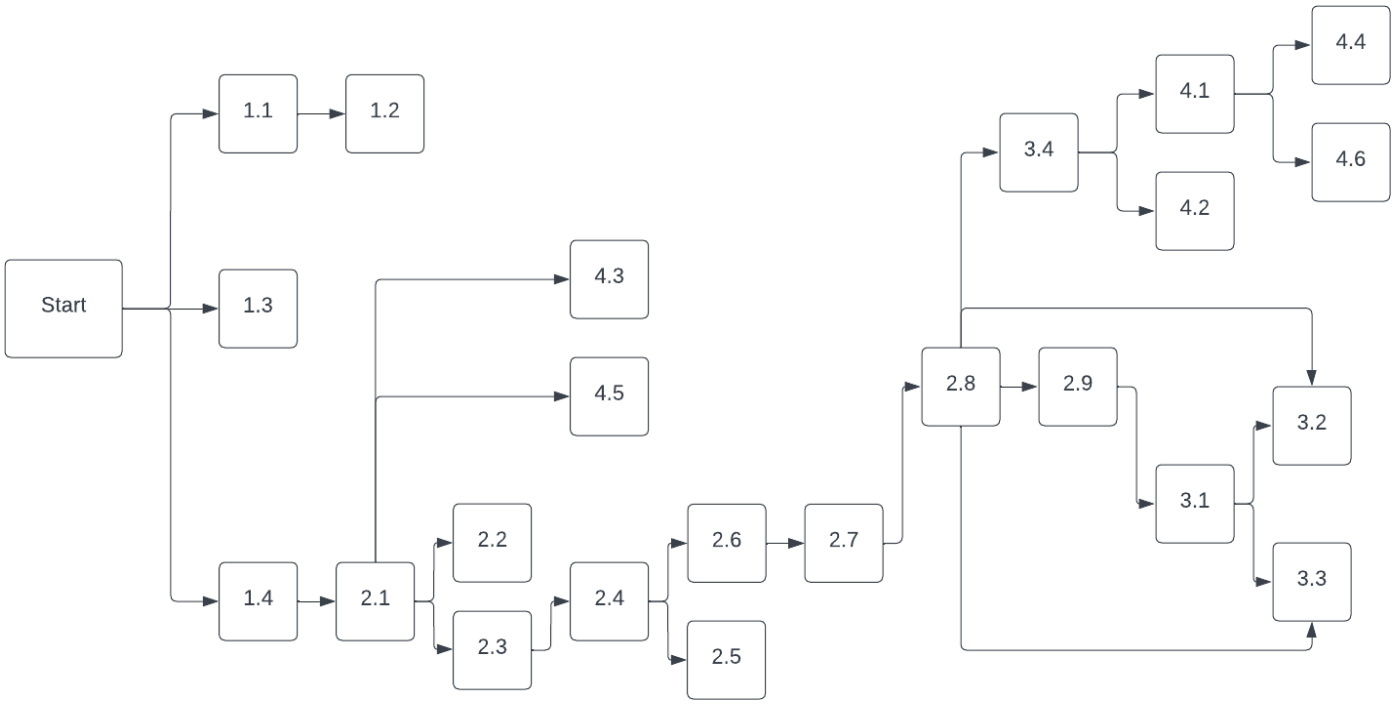

Figure 5. Network Diagram (PERT Analysis)

WBS	Task Name	Duration (Days)	Predecessor
1.0	**Formation of the Company**	**60**	
1.1	Seek office spaces with collaborative environment	35	
1.2	Sign lease agreement for office space	3	
1.3	Purchase office supplies needed to start the company (computers, servers, cubicles, etc.)	7	
1.4	Assign roles/responsibilities as well as job postings (engineers, administrators, data analysts, etc.). Finalize mission statements, company website, goals, and market research	15	
2.0	**Software Development**	**118**	
2.1	Finish hiring employees	35	1.4
2.2	Conduct introduction and kick-off meetings	3	2.1
2.3	Delegation of responsibilities	2	2.1
2.4	Develop the back-end and front-end of the application using machine learning and/or AI	45	2.3
2.5	Conduct performance tests and system verification tests	15	2.4
2.6	Find candidates for a BETA run	5	2.4
2.7	Collect and analyze data from BETA run	2	2.6
2.8	Conduct final performance tests and system verification tests from BETA run	4	2.7
2.9	Submit application to Google and Apple Stores	7	2.8
3	**Launch Phase and Marketing**	**16**	
3.1	Seek final approval from Google store and Apple Store	4	2.9
3.2	Organize a launching party with private investors and to the public	2	3.1, 2.8
3.3	Sales and Marketing team to attend conferences and venues to deploy the application	5	3.1, 2.8
3.4	Monitor and analyze user feedback and usage statistics	5	2.8
4	**Maintenance Phase and Beyond**	**753**	
4.1	Constant monitoring and improvement of application based on user feedback and market trends	365	3.4
4.2	Monitor and fix any performance issues	365	3.4
4.3	Attend UI conferences to stay up-to-date with industry	14	2.1
4.4	Meeting with empoyees to determine if additional hiring is needed	3	4.1
4.5	Form an R&D team	4	2.1
4.6	Brainstorm future markets to tap into given the success of the application	2	4.1

Figure 6. Network Diagram Task Description

Appendix D

Table 6. Financial Plan

Phase		Activities	# Responsible Employees	Duration (Days)	Hours/Day	Cost per task ($)
1	Company Formation	Seek office Space	3	30	240	6000
		Purchase Office Supplies and Hardware	5	30	240	10000
		Hiring employees	4	70	560	30000
		Finalize objectives and Company Website	2	35	280	15000
						61000
2	Software Development	Create Wireframes and Mockups	8	14	112	9000
		Develop the architecture of the App	7	10	80	14000
		Develop a Prototype	4	20	160	19000
		Test the concept and Userflow	2	7	56	9000
		Develop Front end and Back end	8	90	720	100000
		Develop UI&UX	4	30	240	28000
		Execute App security measures	2	12	96	3000
		Perform a Beta run	3	24	192	13000
		Analyze the data from Beta run	3	10	80	3000
		Conduct Performance tests	4	12	96	8000
		Submit applications to Google playstore and Apple app store	2	8	64	3000
						209000
3	Marketing and Launch	Develop a deployment plan	6	7	56	5000
		Launch the app on Play store and App store	2	7	56	5000
		Organize a launching party	4	14	112	15000
		Sales and Marketing streams strategies	10	45	360	50000
		Attend different events and conferences	10	60	480	10000
		Monitor and Analyze user feedback and statistics	6	24	192	5000
						90000
4	Maintenance Phase	Constant updating and improvement of app for stable version	4	90	720	30000
		Fix initial performance issues	4	7	56	10000
		Brainstorm future market plan	5	30	240	5000
						450000