



TapFare: MBTA on Your Mobile

EMGT 5220
Engineering Project Management
Fall 2023

Team Number: 7

Team Members:

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Project Purpose & Goals



PURPOSE

To eliminate current inefficiencies in MBTA's fare and information systems through a unified mobile platform.



OBJECTIVES

- Enable digital fare payments for all MBTA transit modes to increase convenience.
- Deliver accurate, real-time updates to improve travel planning and reduce uncertainty for commuters.



GOAL

Develop "TapFare," a mobile application to streamline MBTA's fare payments and provide real-time transit updates



BENEFITS FOR MBTA

- Operational efficiency with a reduction in cash handling and ticket processing costs.
- Enhanced customer satisfaction through a better commuting experience.

Why "TapFare" Will Succeed Where Others Haven't ?



- Utilizing the latest technologies like NFC, AI, and real-time data analytics, previously underused in this context.
- Developed with real commuter insights.
- Focus on ease of use and practical functionality
- Continuous improvement post-launch.
- Keeping pace with tech advancements and user needs
- Actions informed by real-time usage data.
- Evolves based on actual commuter behaviors



Technical Summary and Deliverables



Approach We Are Using ?

- **Integration of Advanced Technologies:** Implementing online payment gateways like PayPal and Stripe for secure transactions
- **Digital Transition:** Facilitating the shift from physical Charlie cards and paper tickets to digital formats through card scanning and data extraction technologies
- **Real-Time Data Utilization:** Addressing the lack of reliable information by providing live updates on transportation schedules and service disruptions

Technical Summary and Deliverables



What are we going to Produce ?

- **TapFare Mobile Application:** A comprehensive app that simplifies the MBTA fare payment process and provides real-time transit updates
- **Digital Transition Tools:** Features within the app to digitize existing physical fare media and integrate them into the mobile platform

Technical Summary and Deliverables



How are we going to produce It?

- **Technology Integration:** Utilizing APIs for secure and seamless integration with payment gateways and data sources
- **User-Friendly Design:** Focusing on a convenient and intuitive user interface to enhance commuter experience
- **Collaboration and Testing:** Working closely with stakeholders and conducting rigorous testing to ensure the app meets commuter needs and MBTA standards

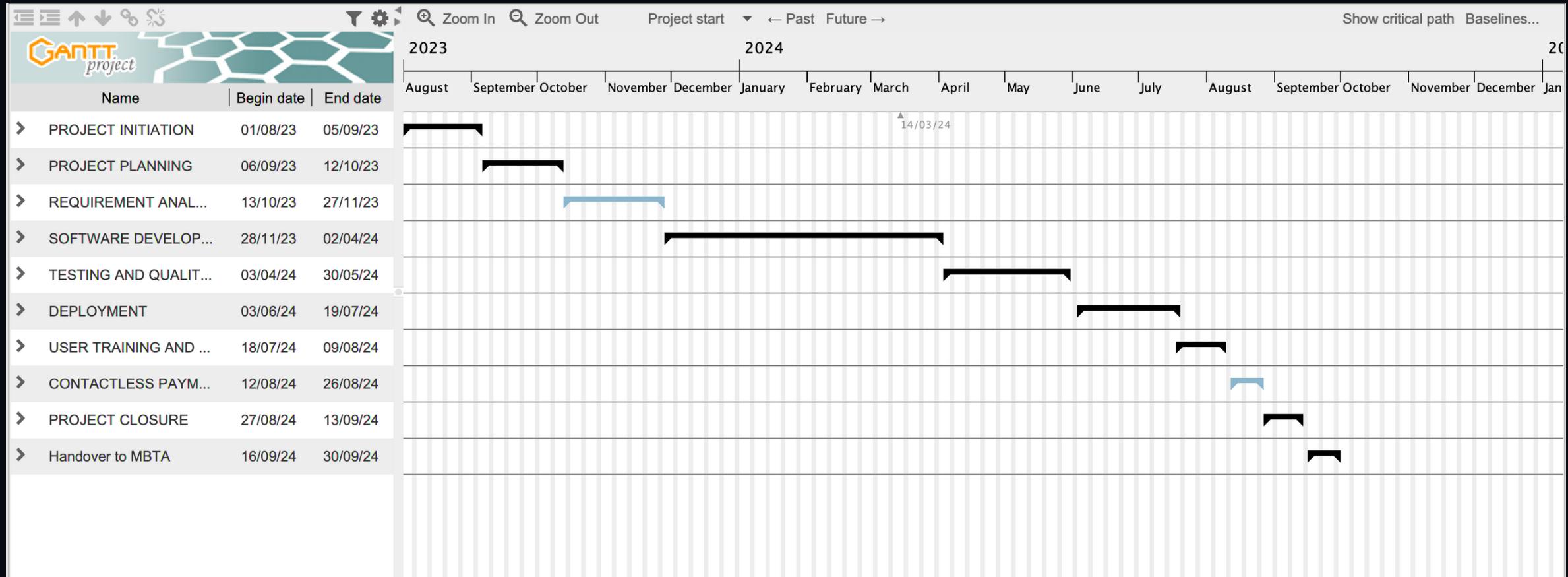
Implementation Plan - WBS Highlights



Implementation Plan - RACI Matrix

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1			Project Manager	Product Manager	UI/UX Designer	Developer Lead	Lead Tester	Financial Manager	Content Lead	MBTA Representative				
ID	Task													
2	TapFare: MBTA on Your Mobile													
3	1.0 Project Initiation													
4	1.1 Identify Stakeholders	R	A,C	I	I	-	C	I	A					
5	1.2 Create Project Charter	R	C	I	I	-	C	I	A					
6	1.3 Develop Preliminary Budget	C	C	I	I	-	R	I	A					
7	2.0 Project Planning													
8	2.1 Conduct Market Research	A	R	I	I	-	I	C	A					
9	2.2 Define Project Objectives	A	R	C	C	I	C	I	A					
10	2.3 Create a Risk Management Plan	R	C	C	C	-	C	I	A					
11	2.4 Establish a Project Schedule	R	C	C	C	I	C	I	A					
12	2.5 Define Resource Requirements	R	C	C	C	-	I	I	A					
13	2.6 Develop a Communication Plan	R	A,C	C	C	I	I	I	A					
14	3.0 Requirement Analysis													
15	3.1 Define System Requirements	A	R,C	R,C	R,C	-	C	I	A					
16	3.2 Document Functional Requirements	A	D	C	C	-	C	I	A					

Implementation Plan - Schedule



Implementation Plan - Stakeholders

- Project Team
- Principle Engineers
- Vendors
- Customers
- Inspection Team



Financial Summary - Budget Distribution

- Budget Allocation: Negotiated Approach
- A total budget of \$1.73 million is sanctioned for the project

Budget Distribution



- Salaries for development team
- Tools and licenses, Servers & Maintenance
- Machinery cost
- Total Operational Costs & Administrative Costs
- Contingency Cost

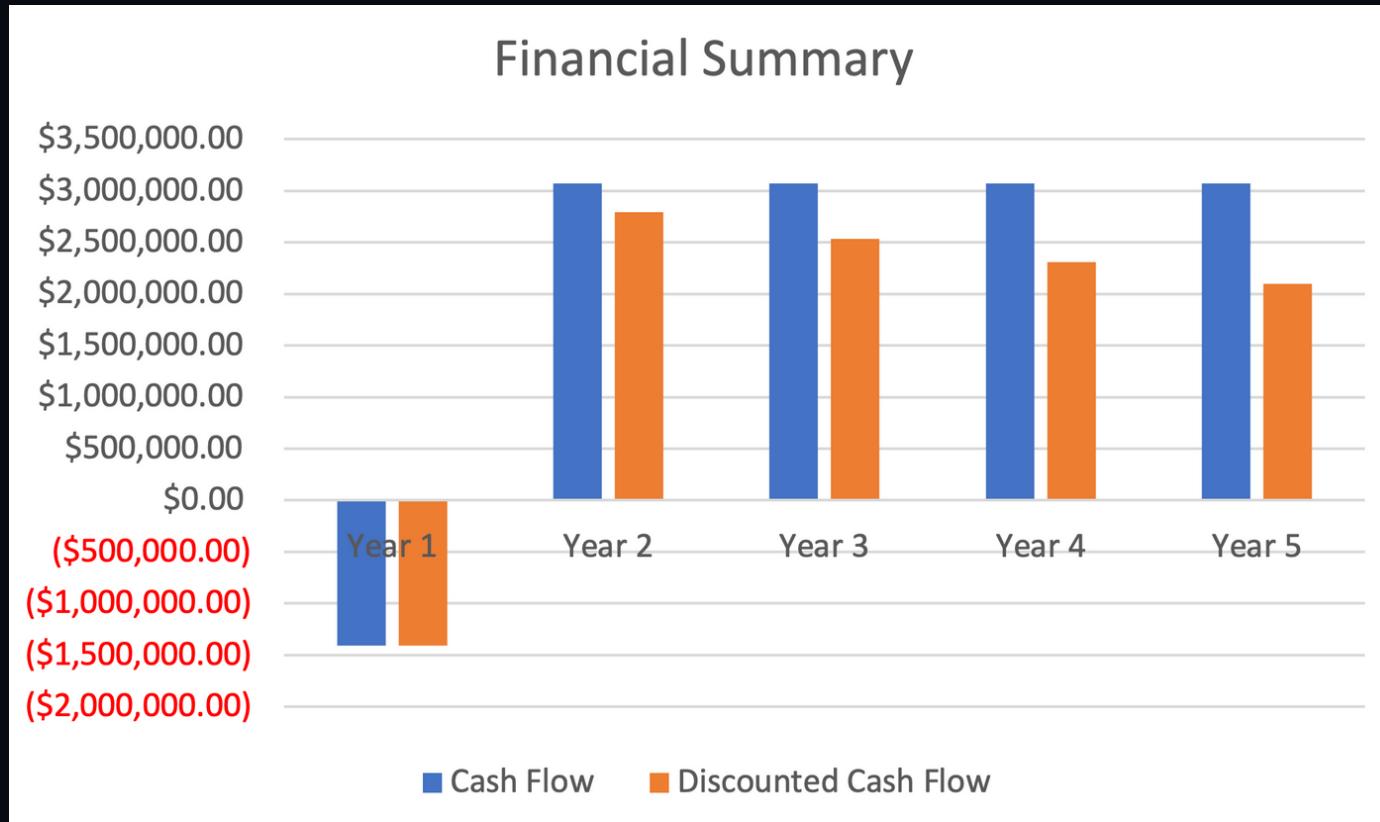
Resources	Total Cost
Salaries for development team	\$9,48,100.00
Tools and licenses, Servers & Maintenance	\$2,00,713
Machinery cost	\$50,000
Total Operational Costs & Administrative Costs	\$3,30,000
Contingency Cost	\$2,10,000
Total	\$17,38,813.00

Financial Summary - Budget Distribution

The below table summarizes the costs on a task level

Task	Labour	Materials	Miscellaneous	Total
Project Initiation	\$66,500	\$15,000	4000	\$85,500
Project Planning	\$1,04,500	\$22,400	7250	\$1,34,150
Requirement Analysis	\$68,400	\$23,438	6750	\$98,588
Software Development	\$4,48,000	\$1,68,000	10500	\$6,26,500
Testing and Quality Assurance	\$64,000	\$28,125	7750	\$99,875
User Training and Support	\$14,000	\$6,500	6250	\$26,750
Project Closure	\$54,000	\$13,000	8000	\$75,000
Handover to MBTA	\$29,700	\$15,250	9500	\$54,450
Monitoring and Maintenance	\$24,000	\$40,000	5000	\$69,000
Address bug fixes	\$30,000	\$63,000	8500	\$1,01,500
Apply regular updates and improvements	\$45,000	\$1,05,000	7500	\$1,57,500
			Contingency cost	\$2,10,000
			Total Cost	\$17,38,813

Financial Summary - Engineering Economic Technique



Year	Cash Flow	Discount Rate (r)	Discounted Cash Flow
1	(\$1,408,813.00)	10%	(\$1,408,813.00)
2	\$3,070,000.00	10%	\$2,790,909.09
3	\$3,070,000.00	10%	\$2,537,190.08
4	\$3,070,000.00	10%	\$2,306,536.44
5	\$3,070,000.00	10%	\$2,096,851.31

Tap Fare - Transit made easy

Problem

- The MBTA's existing fare system is plagued with inefficiencies, including reliance on physical Charlie cards and paper tickets, leading to slower transactions and commuter inconvenience.

Goal

- To revolutionize the MBTA fare system by introducing 'TapFare', a comprehensive app designed to streamline fare payments and enhance overall user experience.

How

- Utilizing cutting-edge technologies such as NFC for contactless payments and AI for real-time updates.
- Emphasizing a user-friendly design that simplifies navigation and transaction processes.

Benefits

- Significantly improves operational efficiency by reducing manual fare processing.
- Increases commuter satisfaction through convenient and reliable fare transactions and real-time transit updates.





Thank you !

Q & A time