EAST WEST UNIVERSITY

Project Report

Smart Parking Solution: Revolutionizing Urban Accessibility And Mobility

Course: CSE495 (IT Project Management & Entrepreneurship**)**

Section: 3

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Introduction

In today's urban landscape, the demand for efficient parking solutions is ever-growing. As cities expand and populations increase, the need for intelligent and convenient parking management becomes paramount. Recognizing this need, we present our innovative Parking Solution Project, aimed at revolutionizing the way parking is managed and accessed in urban areas.

Project Phases

The Parking Solution Project comprises several key phases, each focusing on specific aspects of parking management and implementation. These phases include:

- Project Initiation
- Research and Analysis
- Planning
- Infrastructure Setup
- Software Development
- Integration
- Quality Assurance
- Documentation and Reporting
- Deployment
- Monitoring and Maintenance

Work Breakdown Structure (WBS)

1.Project Initiation

1.1 Establish project scope and objectives

1.2 Identify key stakeholders

1.3 Define clear project goals and success criteria

2.Research and Analysis

2.1 Conduct comprehensive market research

2.2 Analyze existing smart parking solutions and best practices
2.3 Gather user requirements and preferences

3.Planning

3.1 Develop project plan with detailed milestones and deliverables
3.2 Allocate resources to optimize efficiency and effectiveness
3.3 Create a well-defined project schedule

4.Infrastructure Setup

4.1 Install hardware components for seamless operation
4.2 Establish secure and reliable networking infrastructure
4.3 Implement scalable data storage solutions for future expansion

5.Software Development

5.1 Engineer backend systems for efficient data processing
5.2 Design Intuitive frontend interfaces for enhanced user experience
5.3 Integrate secure payment processing systems for seamless transactions

6.Integration

6.1 Integrate hardware and software components for optimal performance
6.2 Conduct testing and debugging to ensure system reliability

7.Deployment

7.1 Roll out smart parking systems in designated areas
7.2 Provide comprehensive training to staff and users for smooth adoption
7.3 Conduct trial runs for validation

8.Monitoring and Maintenance

8.1 Establish monitoring for continuous performance evaluation
8.2 Deliver timely technical support to address any issues or concerns
8.3 Execute maintenance and updates to ensure long-term stability

9.Documentation and Reporting

9.1 Document project processes, decisions, and outcomes with clarity
9.2 Generate insightful reports for informed decision-making

10.Quality Assurance

10.1 Implement quality control measures to ensure high standards
10.2 Conduct thorough analysis and reviews to identify areas for enhancement

10.3 Address any identified issues promptly and effectively

Project Charter

Project Charter	
Project Name	Smart Parking Solution: Revolutionizing Urban Accessibility and Mobility
Objective	The objective of this project is to design, develop, and deploy a smart parking system that optimizes parking space utilization, improves user experience, security and enhances overall parking management efficiency.
Success Criteria	• Achieve a minimum 20% increase in parking space utilization within six months of system deployment. • Reduce average parking search time for users by at least 30% within the first year. • Ensure system availability of 99.5% to maintain uninterrupted parking services.
Key Deliverables	• Fully functional smart parking software platform. • Installation of hardware components including sensors, and cameras. • Integration of payment processing system for seamless transactions. • Comprehensive user manuals and training materials for staff and users.

Milestones	• Completion of project planning and stakeholder alignment. [Deadline: 3 weeks from project initiation] • Successful development and testing of software and hardware components. [Deadline: 14 weeks from project initiation] • Deployment of smart parking systems in designated areas. [Deadline: 17 weeks from project initiation] • Completion of user training and acceptance testing. [Deadline: 19 weeks from project initiation] • Final project review and handover to the maintenance team. [Deadline: 20 weeks from project initiation]
Requirements	• Robust backend software for data processing and management. • Reliable hardware components for accurate vehicle detection and monitoring. • User-friendly frontend interface for easy navigation and interaction. • Integration with existing payment systems for seamless transactions. • Scalable architecture to accommodate future expansion and upgrades.

Resource	• **Marketing**
	  ○ Budget Allocation: 250,000 BDT [Old Budget]
	• **Software and Hardware**
	  ○ Budget Allocation: 500,000 BDT [Old Budget]
	• **Development**
	  ○ Budget Allocation: 800,000 BDT [Old Budget]
	• **Support and Maintenance**

	○ Budget Allocation (per year): 12,000,00 BDT [Old Budget]
Risks	● **Delays:** The risk of unforeseen setbacks slowing down our progress. ● **Budget Constraints:** Facing limitations in resources that may impact our ability to proceed. ● **Regulatory Compliance:** Navigating through regulations and legal requirements that could affect our project. ● **Security Threats:** The risk of unauthorized access, data breaches, or cyberattacks compromising the security of our system. ● **Fraudulent Activities:** Potential instances of misuse, manipulation, or fraudulent behavior within the system, such as unauthorized parking or payment evasion. ● **Operational Risks:** Challenges related to day-to-day operations, such as system malfunctions, technical glitches, or human errors affecting performance. ● **Vendor Dependency:** Reliance on external vendors for critical components or services, posing risks related to vendor stability, performance, or contractual obligations.
Stakeholders	**Internal Stakeholders:** ● Project Sponsor: The individual or group funding the project and advocating for its success within the organization. ● Project Manager: Responsible for overall project coordination, planning, and execution.

- Development Team: Engineers, programmers, and technicians responsible for designing, developing, and implementing the smart parking system.
- Operations Team: Personnel tasked with operating and maintaining the smart parking system post-deployment.
- Finance Department: Oversees budgeting, financial planning, and resource allocation for the project.
- Human Resources: Supports staffing needs, training, and organizational development related to the project.
- Quality Assurance Team: Monitors and ensures the quality of deliverables throughout the project lifecycle.

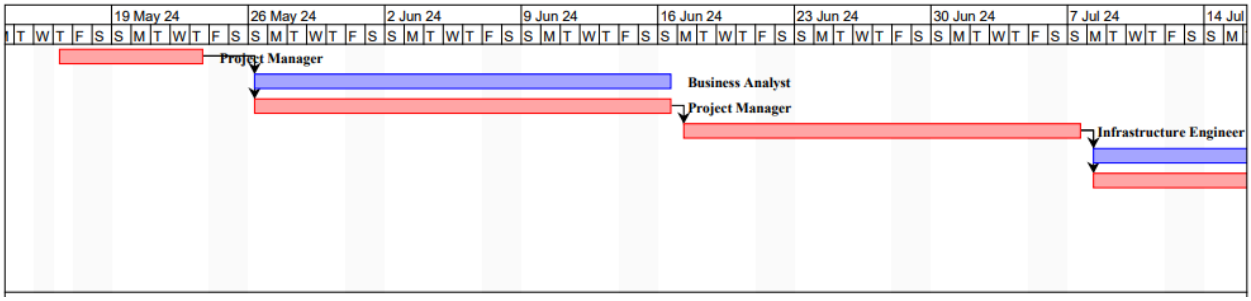
External Stakeholders:

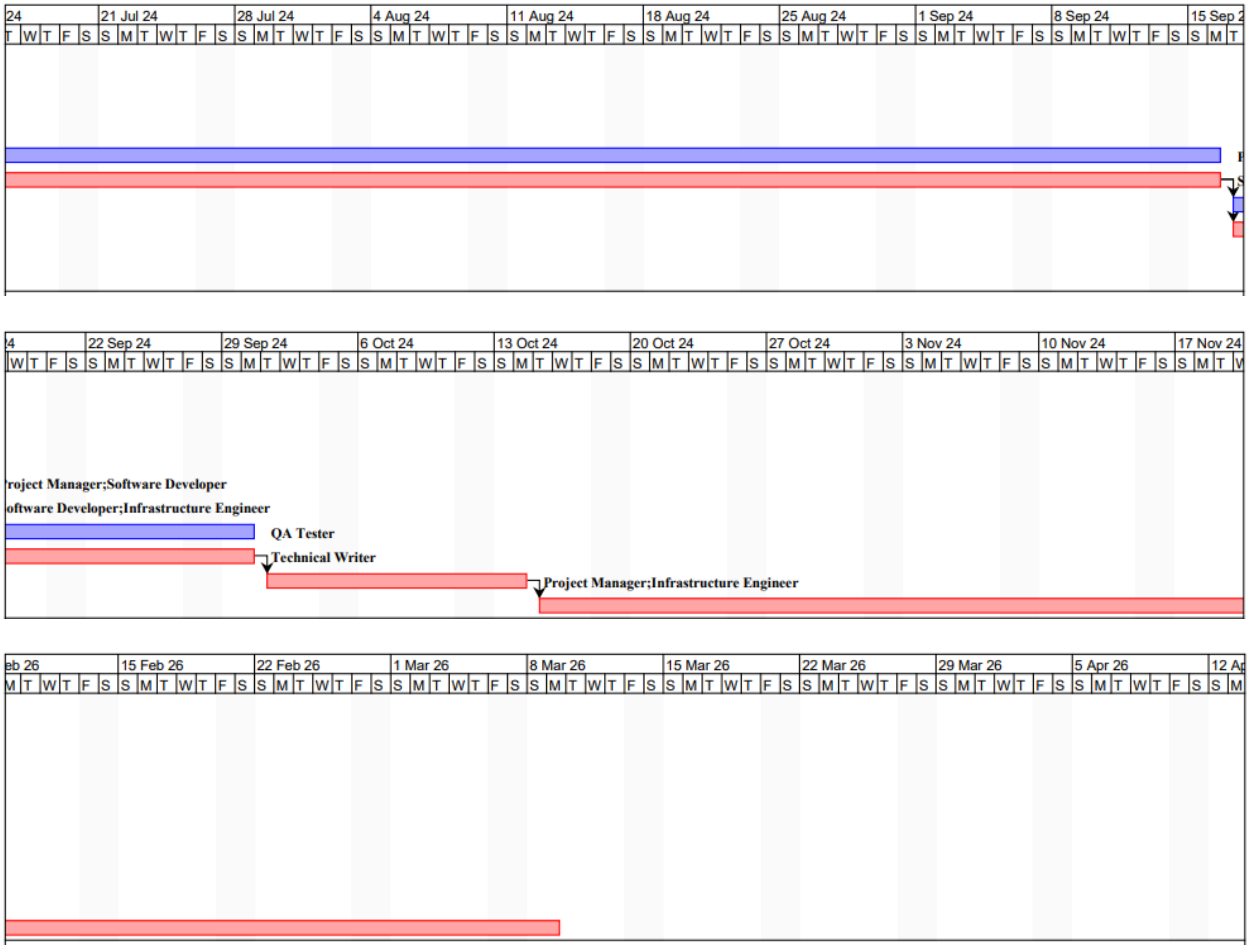
- End Users: Drivers and vehicle owners who will utilize the smart parking system to find and access parking spaces.
- Government Authorities: Regulatory bodies responsible for overseeing transportation, parking regulations, and compliance.
- Technology Vendors: Suppliers of hardware, software, and related technologies essential for the project's implementation.
- Media and Public Relations: Journalists, media outlets, and public relations firms responsible for communicating project updates and outcomes to the public.

Project Manager	**Name:** Mr. Mars **Roles:** Project lead, Management of overall project, Stakeholder communication.	
Approval	**Name:** Mr. Sun	**Title:** CTO
	Signature:	**Date:**
	Name: Mr. Earth	**Title:** Business head
	Signature:	**Date:**

Gantt Chart

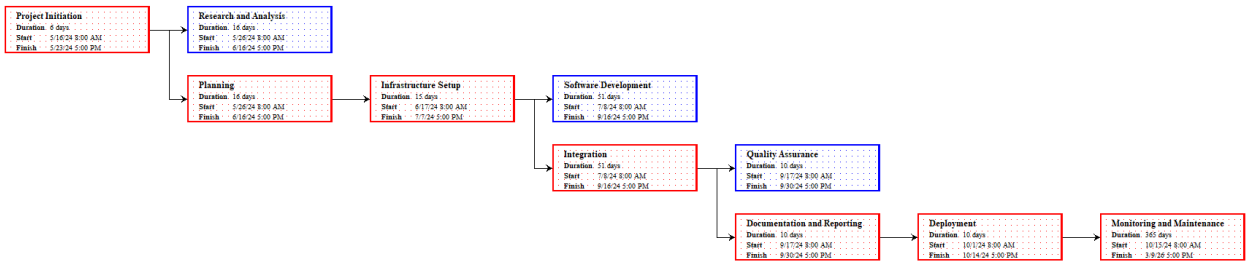
		Name	Duration	Start	Finish	Predecessors	Resource Names
1		Project Initiation	6 days	5/16/24 8:00 AM	5/23/24 5:00 PM		Project Manager
2		Research and Analysis	16 days	5/26/24 8:00 AM	6/16/24 5:00 PM	1	Business Analyst
3		Planning	16 days	5/26/24 8:00 AM	6/16/24 5:00 PM	1	Project Manager
4		Infrastructure Setup	15 days	6/17/24 8:00 AM	7/7/24 5:00 PM	3	Infrastructure Engineer
5		Software Development	51 days	7/8/24 8:00 AM	9/16/24 5:00 PM	4	Project Manager;Software ...
6		Integration	51 days	7/8/24 8:00 AM	9/16/24 5:00 PM	4	Software Developer;Infrast...
7		Quality Assurance	10 days	9/17/24 8:00 AM	9/30/24 5:00 PM	6	QA Tester
8		Documentation and Repor...	10 days	9/17/24 8:00 AM	9/30/24 5:00 PM	6	Technical Writer
9		Deployment	10 days	10/1/24 8:00 AM	10/14/24 5:00 PM	8	Project Manager;Infrastruct...
10		Monitoring and Maintenance	365 days	10/15/24 8:00 AM	7/14/26 5:00 PM	9	Infrastructure Engineer;Sup...

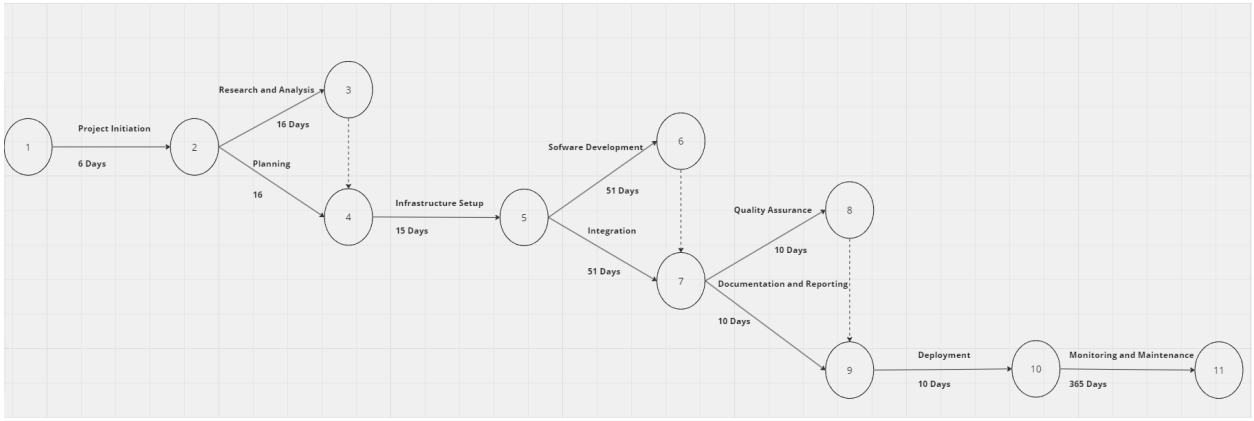




According to the gantt chart we can see ,
The project starts and goes through several phases till it reaches the finish state to get deployed and finally goes into the continuous monitoring and maintenance phase.
Resources are allocated accordingly in each phase of the service's lifecycle.

Network Diagram





The network diagrams depict the flow of activities along with their timeline and dependencies.

Software Costing

Name	Type	Standard Rate	Overtime Rate
Project Manager	Work	30/hour	35/hour
Business Analyst	Work	20/hour	25/hour
Software Developer	Work	15/hour	20/hour
QA Tester	Work	13/hour	18/hour
Infrastructure Engineer	Work	18/hour	23/hour
Technical Writer	Work	12/hour	17/hour
Support/Maintenance Staff	Work	10/hour	15/hour
Software licenses and tools	Material	2,000	
Servers and hardware	Material	5,000	
Hosting and Cloud services	Material	1,500	
Travel and meetings	Material	1,000	
Training and development	Material	1,000	
Office rental (yearly)	Material	1,200	
Contigency	Material	5,000	

Start:	5/16/24 8:00...	Finish:	3/9/26 5:00 PM
Baseline Start:		Baseline Finish:	
Actual Start:		Actual Finish:	
Duration:	473 days	Baseline Duration:	0 days
Actual Duration:	0 days	Remaining Duration:	473 days
Work:	8,216 hours	Baseline Work:	0 hours
Actual Work:	0 hours	Remaining Work:	8,216 hours
Cost:	$146124.00	Baseline Cost:	$0.00
Actual Cost:	$0.00	Remaining Cost:	$146124.00

The project is estimated to cost around 146124.00 [Revised Budget] over the period of 473 Days. The cost includes Labor Costs, Software and Hardware Costs, Office Rental Costs, Miscellaneous and Contingencies.

Conclusion

The Parking Solution Project represents a significant step forward in the realm of parking management. By leveraging cutting-edge technology and innovative strategies, we aim to redefine the parking experience, making it more convenient, efficient, and sustainable for all stakeholders. With a dedicated team and a clear vision, we are poised to revolutionize urban parking and set new standards for the industry.