



Evaluation Matrix

Evaluation Criteria	Relative Importance	Alternative 1: Adopt 3rd Party Scheduling Software	Score (1-5)	Weighted Score	Alternative 2: Cloud-based with Microsoft Azure	Score (1-5)	Weighted Score	Alternative 3: Spreadsheet-based Solution	Score (1-5)	Weighted Score	Alternative 4: Custom Application Using C# with .NET Framework	Score (1-5)	Weighted Score
Technical Issues:													
System Responsiveness	10	Medium	5	50	Good	4	40	Yes; Adequate	4	40	Medium	3	30
Data Security Protocols	15	Medium	5	75	Medium	5	75	Medium	4	60	Strong	5	75
System Reliability	10	High	4	40	Good	4	40	Strong	5	50	Yes; Adequate	4	40
Economic Issues:													
Implementation Cost	10	\$50	4	40	\$60/month	4	40	\$300/month	3	30	\$50/month	3	30
Operational Efficiency	15	Medium	3	45	High	5	75	High	4	60	Yes; Adequate	4	60
Organizational Issues:													
User Adoption Rates	10	Good	3	30	Medium	4	40	Medium	4	40	Yes; Adequate	4	40
Integration Capability	15	Medium	4	60	Very High	5	75	Medium	3	45	Medium	3	45
Support and Maintenance	15	Strong	5	75	Medium	4	60	High	4	60	High	5	75
TOTAL	100			415			445			385			395

Nonfunctional Requirements and their implications for architecture design.

Requirements	Server based	Thin client-server	Thick client-server
Usability Requirements			
User-Friendly Interface	✔	✔	
Clear Instructions and Prompts	✔	✔	
Security Requirements			
Data Privacy and Confidentiality			
Secure Authentication Mechanisms	✔	✔	
Performance Requirements			
Appointment Scheduling Without Significant Delays			✔
Responsive System with Efficient Concurrent User Interaction	✔	✔	
Reliability Requirements			
Minimize Downtime and Ensure Timely Issue Resolution		✔	
High Availability	✔	✔	
Scalability Requirements			
Accommodate Growth in Users and Activities		✔	✔
Handle Increased Data Volumes and Traffic		✔	

Sample Hardware and Software Specification

	Standard Client	Standard Web Server	Standard Application Server	Standard Database Server
Operating System	Windows 10, MacOS, Linux	Linux	Linux	Linux
Special Software	Web Browser (Firefox, Safari, Chrome)	Apache HTTP Server	Node.js	MySQL
Hardware	Intel Core i3 processor	Quad-Core Processor, 8GB RAM	Quad-Core Processor, 16GB RAM	Quad-Core Processor, 32GB RAM, 1TB SSD
Network	100 MBPS WiFi Connection	500 MBPS WiFi Connection	500 MBPS WiFi Connection	1 GBPS Ethernet Connection