

National Institute of Technology Karnataka, Surathkal

Department of Computer Science and Engineering

CS303 - Software Engineering Lab



Initial Analysis Document

for the project

An Automated System to Connect Users and Patients based on Service-Oriented Architecture

Submitted to:

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1. Project Details

Project	An Automated System to Connect Patients and Hospitals based on Service-Oriented Architecture
Members	1. Manas Trivedi 2. Omanshu Mahawar
Schedule	Sept. 14 - Nov. 29

2. Project Overview & Objectives

2.1 Project Summary

The project, *An Automated System to Connect Patients and Hospitals Based On Service-Oriented Architecture* (ASCPH) is an attempt to develop an application which enables users to find hospitals and book appointments. ASCPH is intended to be a web application, which shall be divided into three major subsystems:

1. A hospital searching service, which shall be used by the patients will be able to view the details (including name and location) of nearby hospitals. Search results can be filtered based on the number of available beds, the availability for treatment of specific diseases, blood bank, and other resources and requirements.
2. An appointment booking service, which shall be used by the patients to book appointments with hospitals obtained from the search results in the preceding service.
3. An appointment acceptance service, which shall be used by the representatives of each hospital to approve appointments which have been requested by patients from the preceding service.

The development of ASCPH will be based on an optimal process which can be used for developing similar systems based on Service-Oriented Architecture (SOA). This process will be drawn after a study of the current research and state-of-the-art practices involved in developing service-oriented systems.

2.2 Problem Statement

ASCPH, upon completion, is intended to be used by people, particularly those residing in remote areas, to find hospitals and book appointments. The proposed web application must be built by creating and adopting a suitable practice for creating SOA-based systems.

2.3 Context

In the summer of 2020, during the coronavirus pandemic, multiple reports were observed by us in the media which stated that people were finding it difficult to find hospitals with available beds. Travelling to multiple hospitals to find an available resource can cost lives, as time is a very critical factor in such situations. Hence, a need was felt to develop an application which could be used by patients to find and locate hospitals with resources which they require, and book appointments with the same.

3. Project Scope

Phase	Deliverables	Requirements
Design and Architecture	<ul style="list-style-type: none"> • Conceptual model and methodology, based on research. • ASCPH design document 	<ul style="list-style-type: none"> • Software Requirements Specification document
Development	<ul style="list-style-type: none"> • Code developed for ASCPH • Documentation • Final design document as per code developed 	<ul style="list-style-type: none"> • ASCPH design document
Testing and Report	<ul style="list-style-type: none"> • Test scenarios • Test results • Project report 	<ul style="list-style-type: none"> • Code developed for ASCPH

4. Task List

Phase: Design and Architecture

- ☐ Detailed study of papers which deal with developing SOA-based systems
- ☐ Prepare a methodology as a solution for the problem statement
- ☐ Prepare conceptual design
- ☐ Prepare logical design
- ☐ Prepare technical design

Phase: Development

- ☐ Write code as per ASCPH design document
- ☐ Improve methodology by proposing modification(s) which involve newer approaches
- ☐ Apply modifications in code

Phase: Testing and Report

- ☐ Test individual modules
- ☐ Test complete system
- ☐ Make necessary modification(s) to design and code, if any
- ☐ Prepare project report

5. Project Schedule

Phase	Final deliverables	Schedule
Design and Architecture	<ul style="list-style-type: none"> • ASCPH design document 	Sept. 14 - Oct. 11
Development	<ul style="list-style-type: none"> • Code developed for ASCPH • Documentation for code 	Oct. 12 - Nov. 8
Testing and Report	<ul style="list-style-type: none"> • Testing document • Project report 	Nov. 9 - Nov. 29

6. Project Timeline

	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10	Wk 11
Phase	Design and Architecture				Development				Testing and Report		

7. Success Criteria

- Working SOA-based web application for ASCPH
- Final design document, code documentation, and testing document
- Project report

8. Sign-off

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