Software Design Specification

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The Software Design Specification Outline

1. Introduction

The Software Design Specification Document is an enclosed documentation detailing the built structure of the software - present and future. In this document, the software built structure has been described using informative narratives and graphical representations, namely data flow diagram,use case diagrams, sequence diagrams and state diagrams and other pertaining models and diagrams.

1.1 Purpose of this document

The primary purpose of this document is to extensively describe the journey that the user undertakes to get the desired output from the input given. It also explains the processes undertaken by the admin to perform the actions required from the user, with all possible entries. The document details relationships between different classes and functions used in the application.

1.2 Scope of the development project

The primary motive of this application is to enable users to get access to the success stories of individuals and corporations - what success means to them and how they got there. This web app gives an opportunity for people to share their inspiring and informative journeys. Users are able to list their education, job, experiences, references, skills required and advice. The web-app also allows you to search for professionals by their industry and education. This app should be a one stop resources for questions such as “What can I do with this major?”. “What skills will I need for this job?”. ”What training, certification, experience will I need to be successful?”

Our webapp is inspired from LinkedIn and other career development platforms.LinkedIn is one of the major social sites for career development, Our product does not just allow people to interact with each other but they can also share their success stories and get inspired through our platform. Safe to say, this has taken inspiration from LinkedIn but it’s a completely unique and stand-alone app and it cannot be seen as an extension of LinkedIn. It is completely different from LinkedIn as the other is a service primarily used by professionals and business persons to put up their own skills and achievements only for their self-promotion with little or no emphasis on helping fellow colleagues and budding entrepreneurs. However, Up the Ladder will serve as a third-party service wherein successful people’s stories and skill sets will be uploaded on the forum by us, with the sole purpose of connecting them with fellow students and professionals looking for guidance and inspiration.

1.3 Definitions, acronyms, and abbreviations

IEEE: Institute of Electrical and Electronics Engineers
SDS: Software Design Specification

1.4 References

IEEE SDS template

1.5 Overview of document

This SDS is divided into seven sections with various sub-sections. The sections of the Software Design Document are:
1. Introduction: describes about the document, purpose, scope of development project definitions and abbreviations used in the document.
2. Conceptual Architecture/Architecture Diagram: describes the overview of components, modules, structure and relationships and user interface issues.
3. Logical Architecture: describes Logical Architecture Description and Components.
4. Execution Architecture: defines the runtime environment, processes, deployment view.
5. Design Decisions and Trade-offs: describes the decisions taken along with the reason as to why they were chosen over other alternatives.
6. Pseudocode for components: describes pseudocode, as the name indicates.
7. Appendices: describes subsidiary matter if any.

2. Conceptual Architecture/Architecture Diagram

Conceptual Architecture is "Context" for the system's use.

2.1 Overview of modules / components

This subsection will introduce the various components and subsystems.

2.2 Structure and relationships

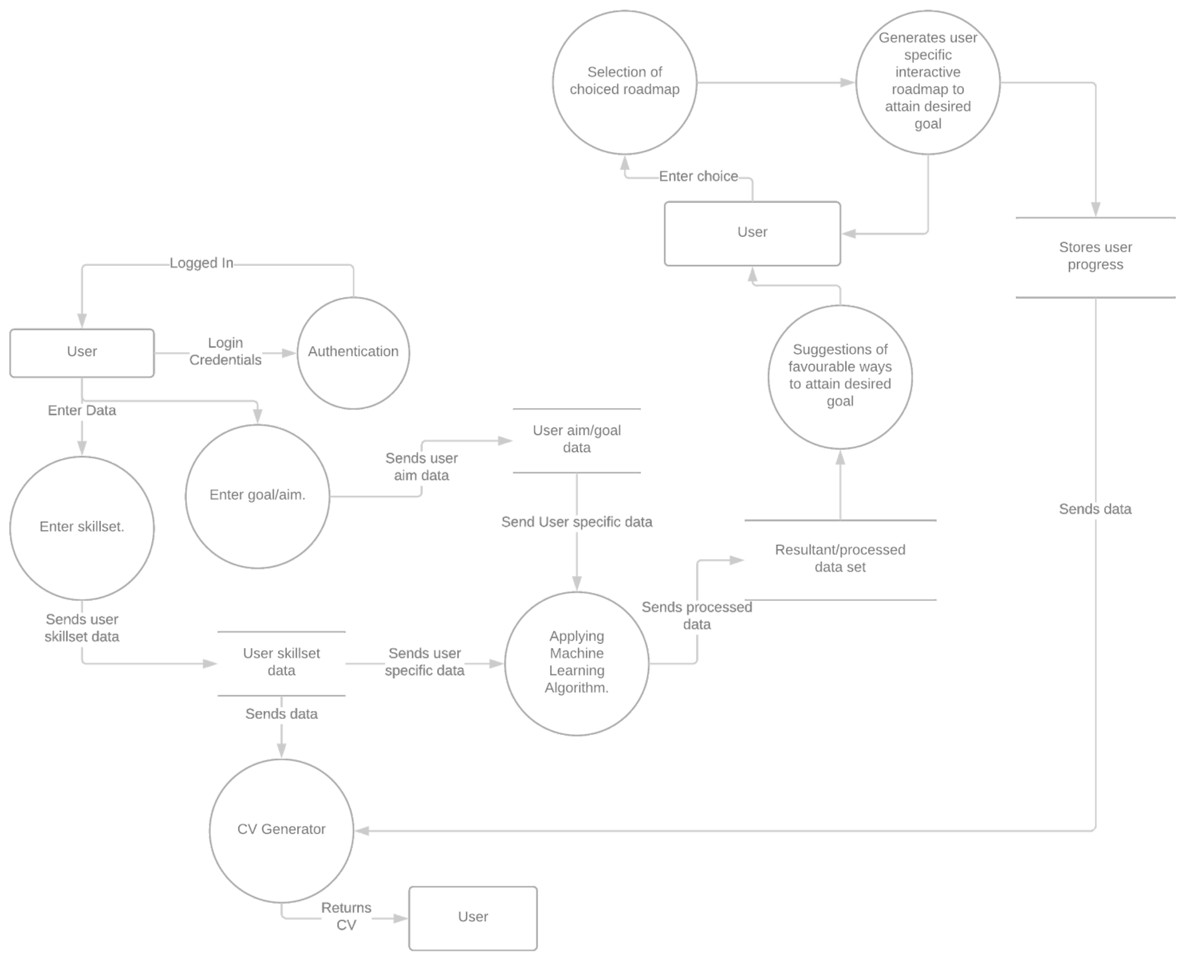
Make clear the interrelationships and dependencies among the various components. Structure charts can be useful here. A simple finite state machine can be useful in demonstrating the operation of the product. Include explanatory text to help the reader understand any charts.

2.3 User interface issues

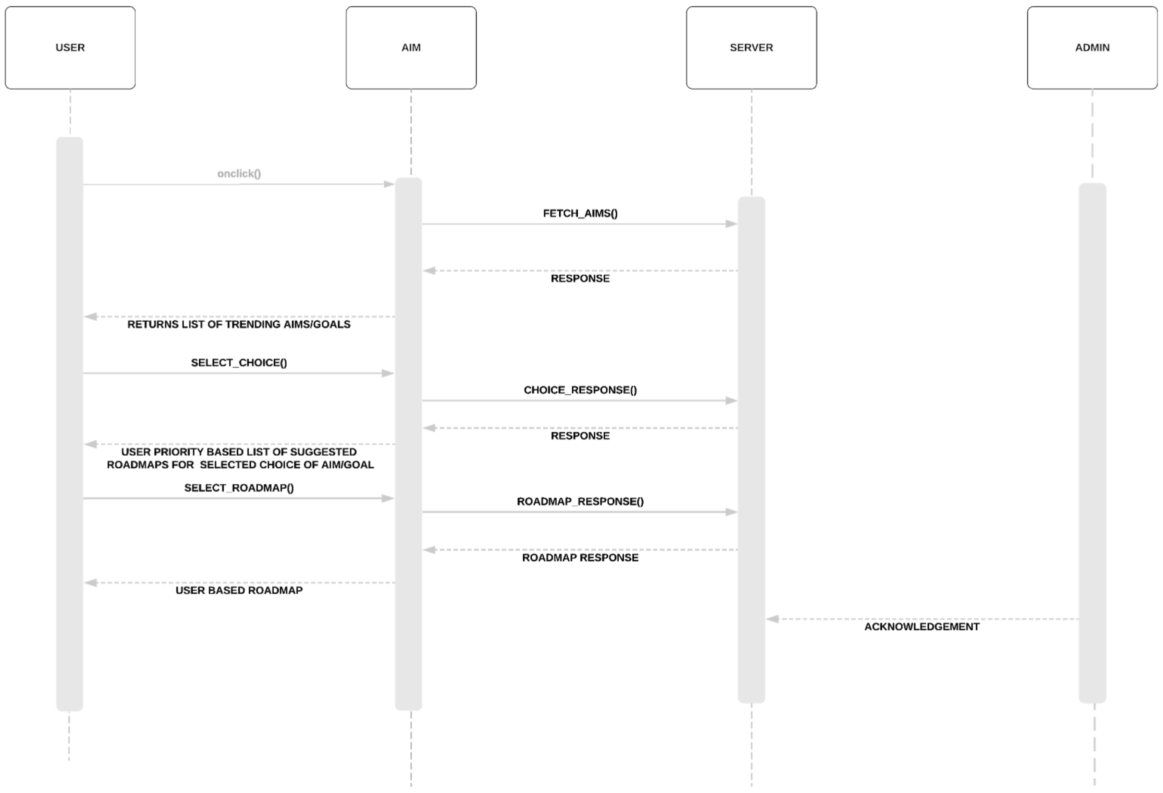
This section will present the main principles of the product's user interface. Use the personas defined in section 2.1 of your SRS to make specific examples. This section should not touch on technical details. You may want to include sketches and specific text messages.

3. Logical Architecture (Data Flow Diagram, Sequence Diagram, State Diagram)

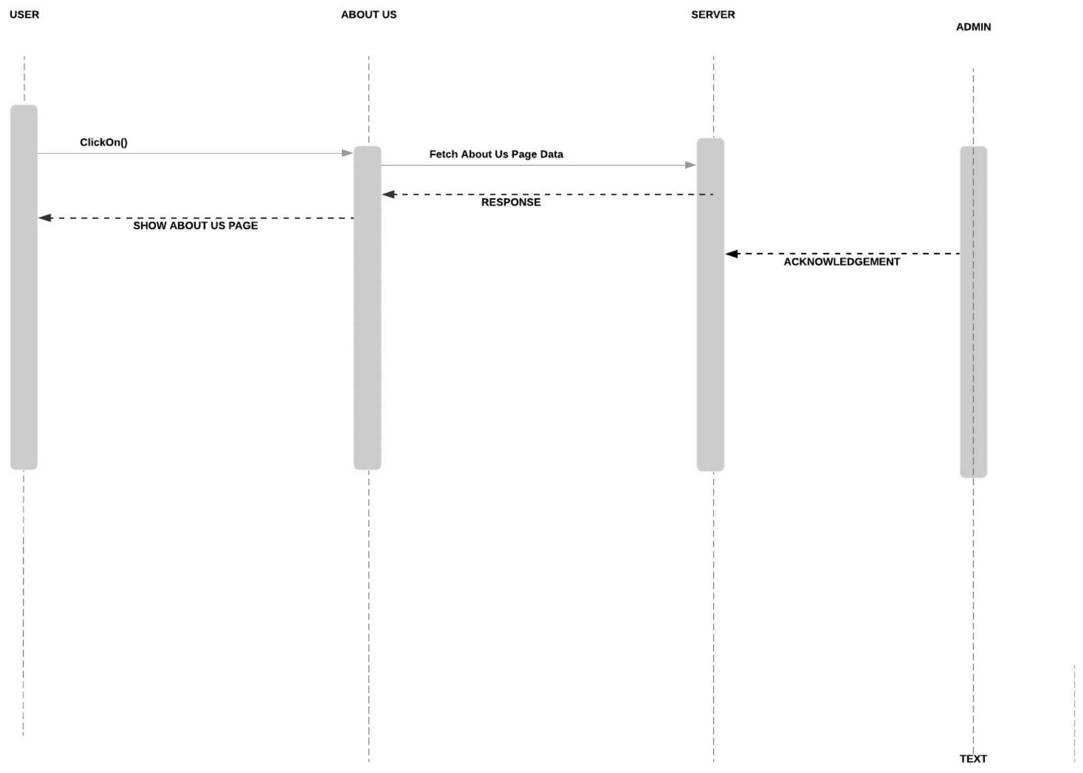
Data Flow Diagrams



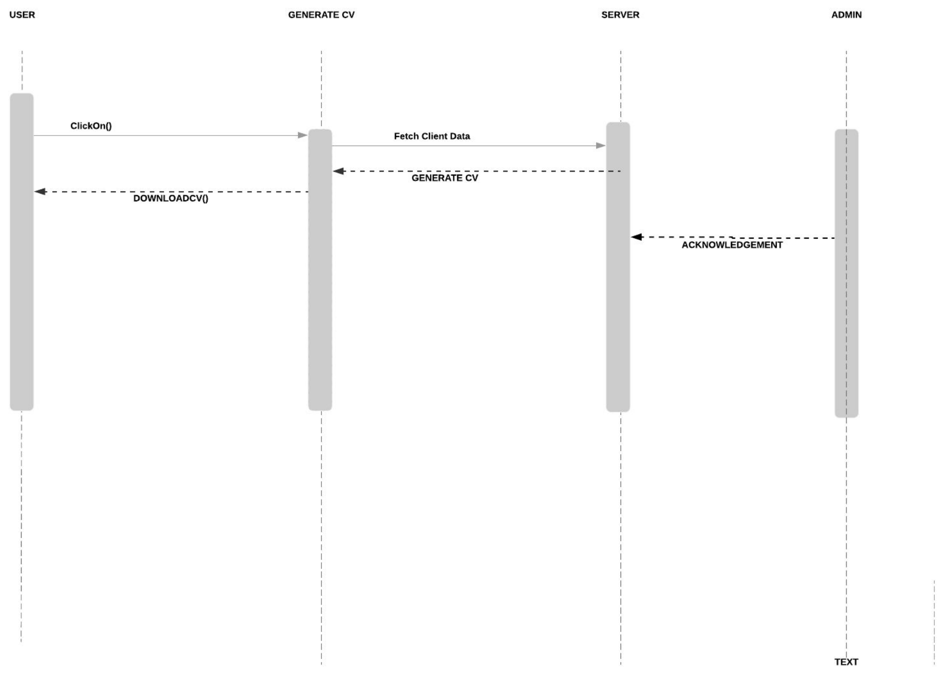
Sequence Diagrams



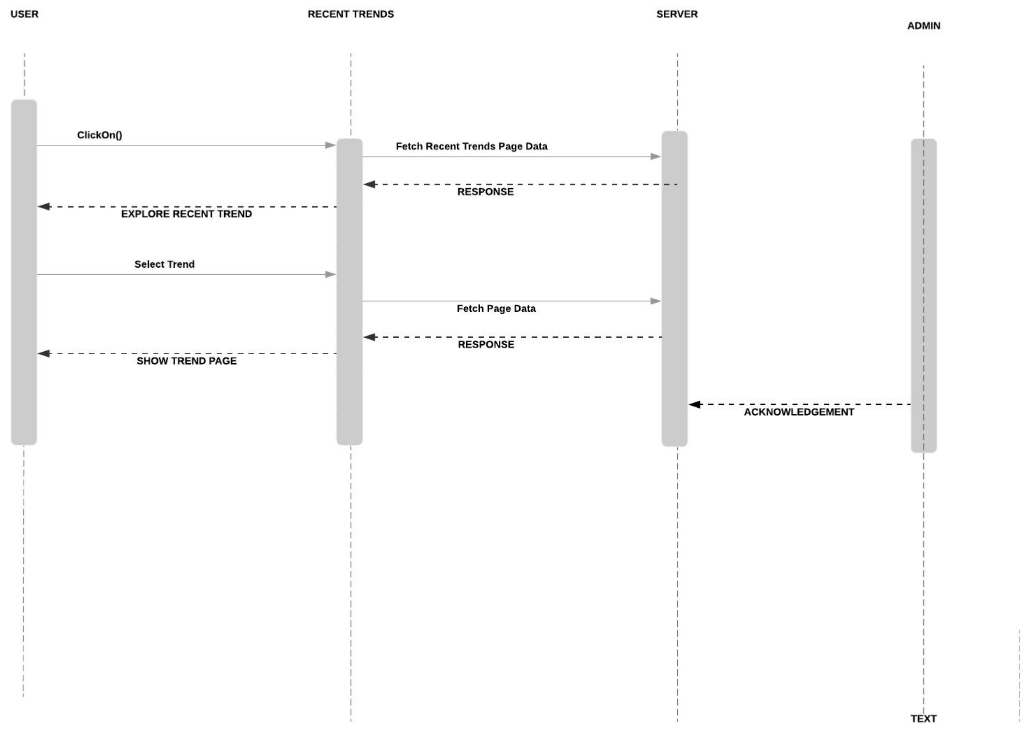
Sequence Diagram : Contact Us Page



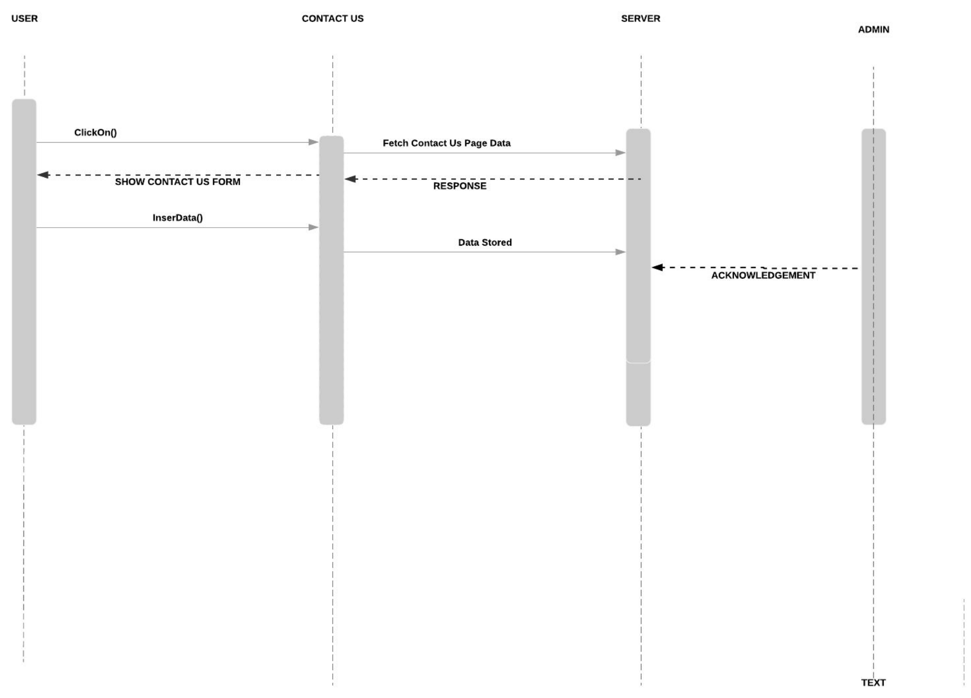
Sequence Diagram : CV Generator



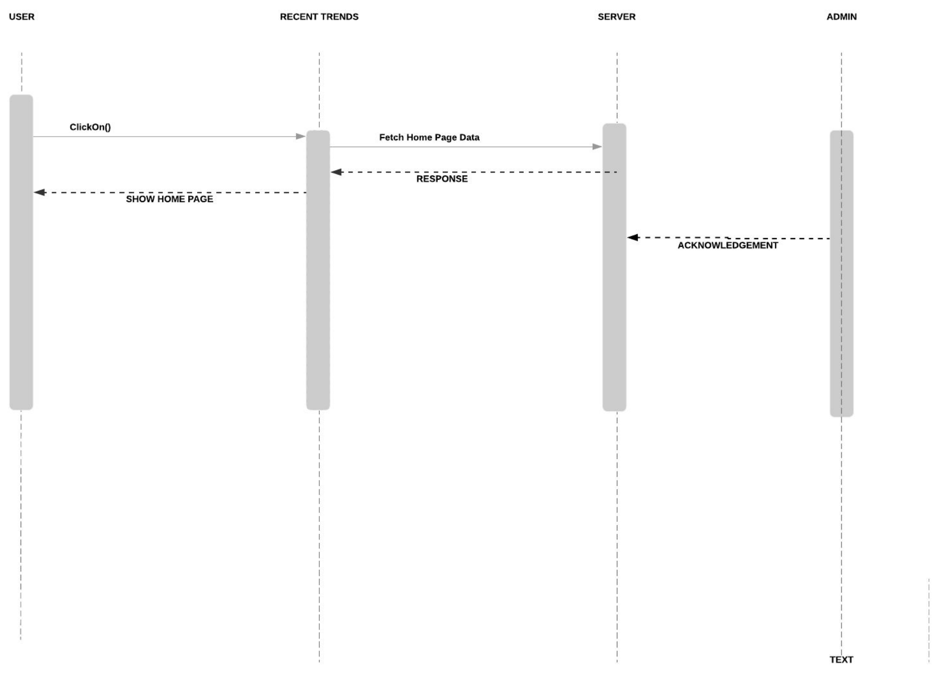
Sequence Diagram : Recent Trends Page



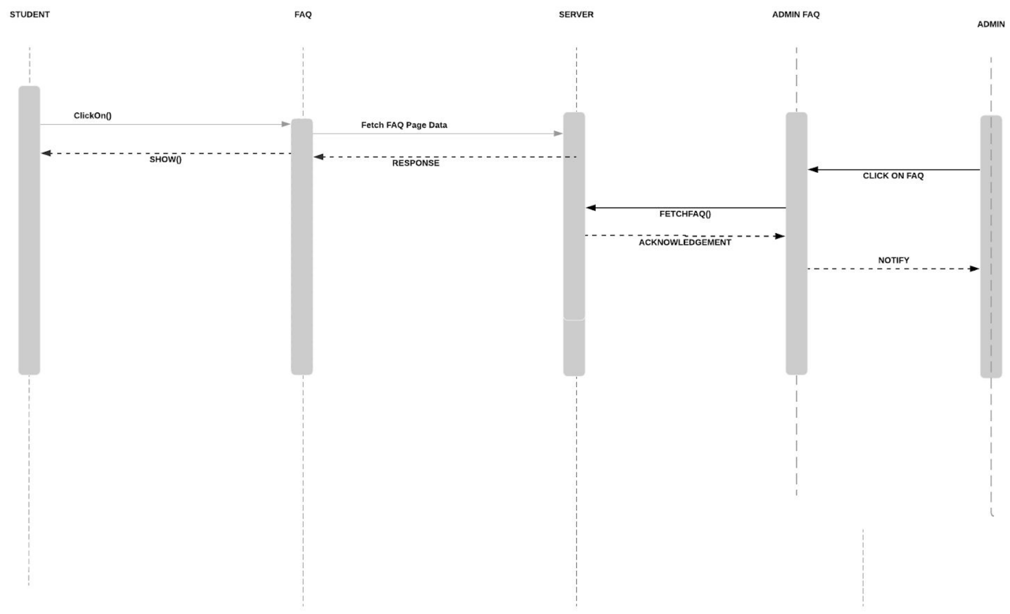
Sequence Diagram : Contact Us Page



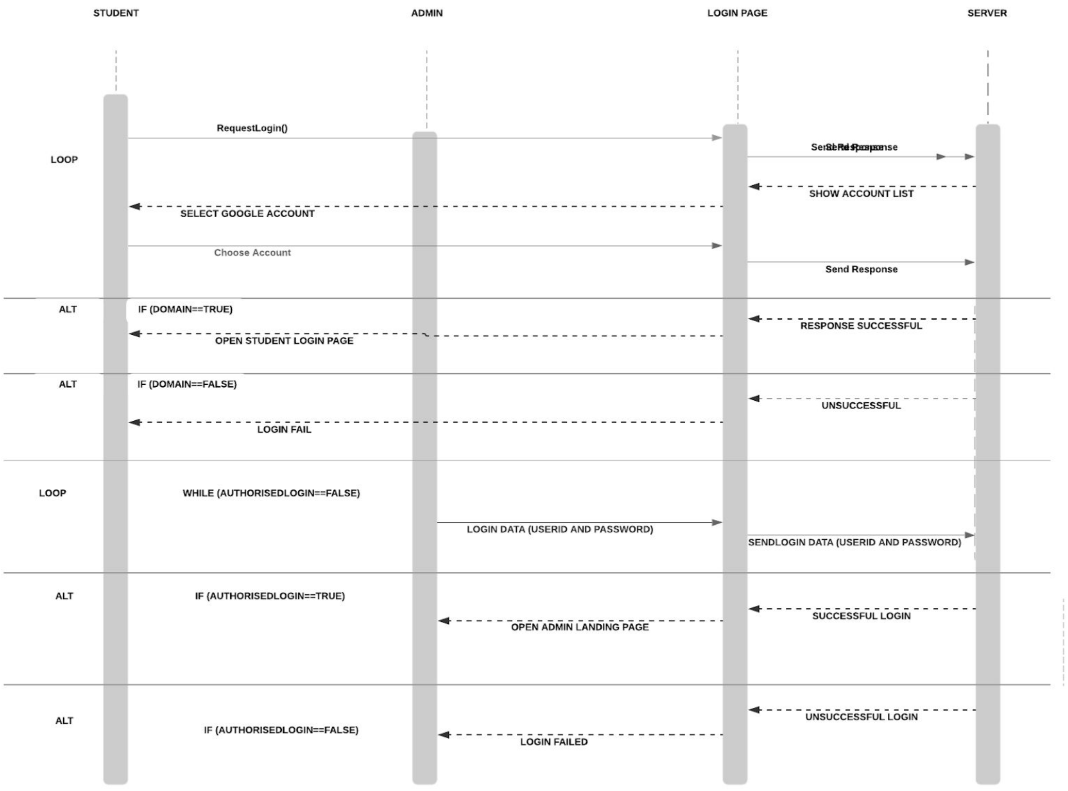
Sequence Diagram : Home Page

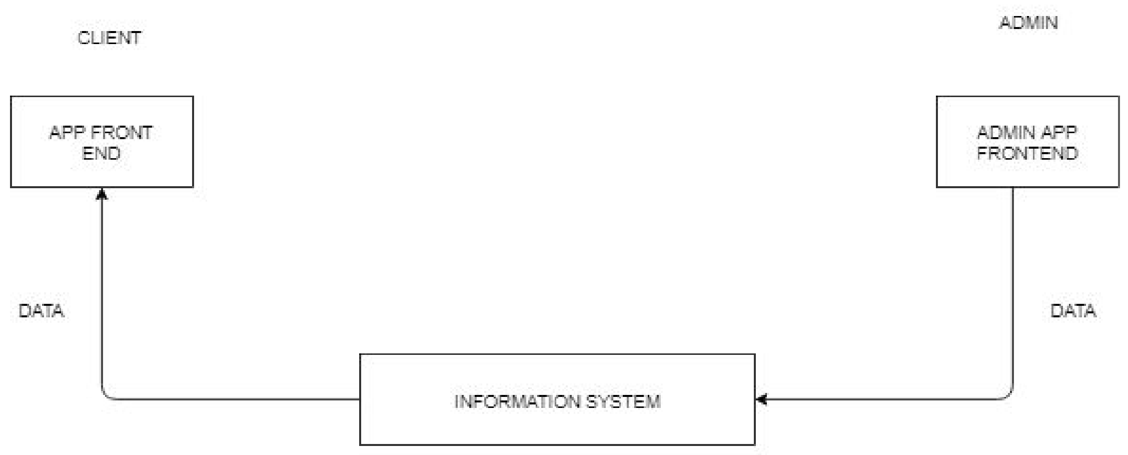


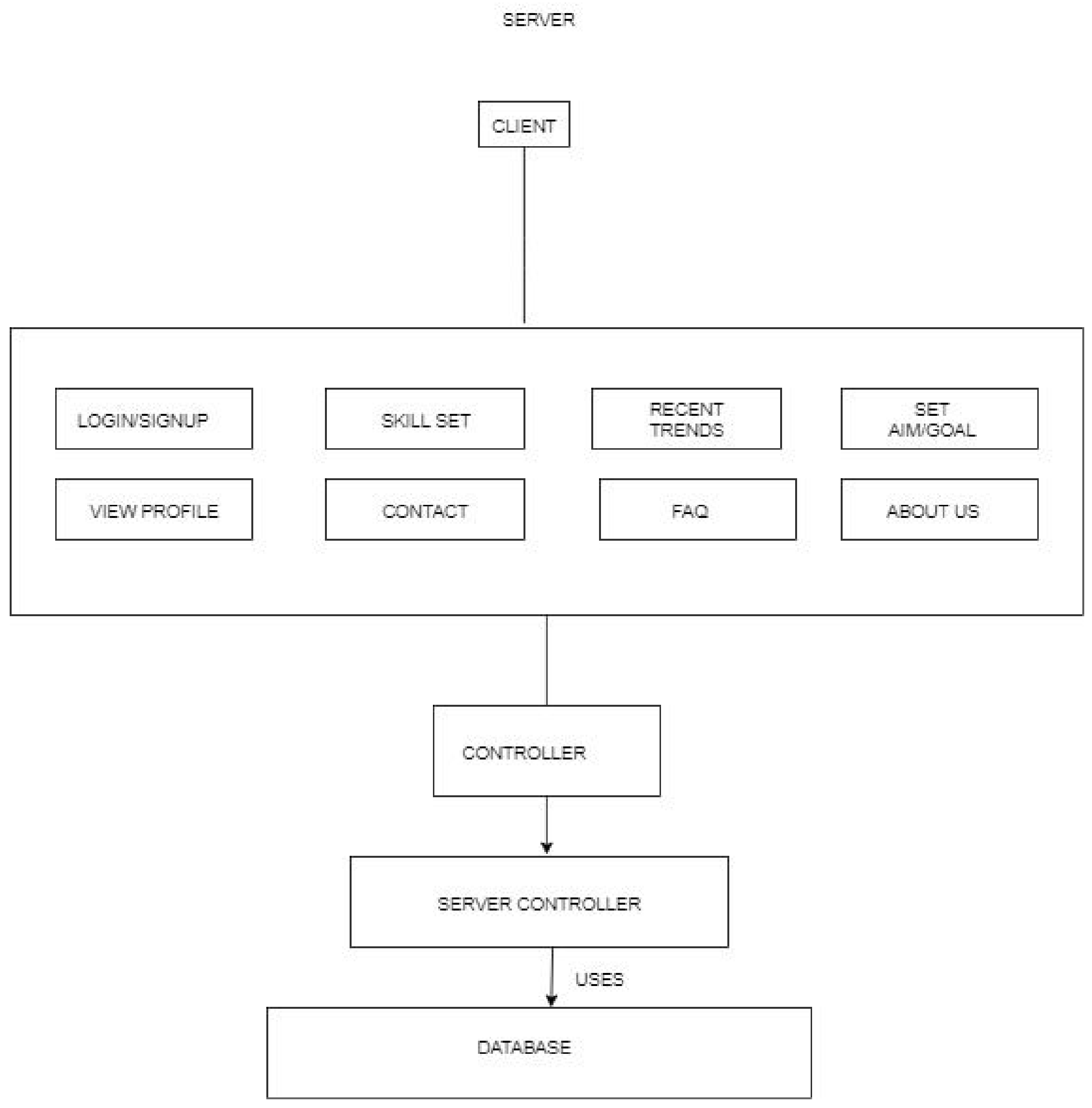
Sequence Diagram : FAQ Page



Sequence Diagram : Login Page

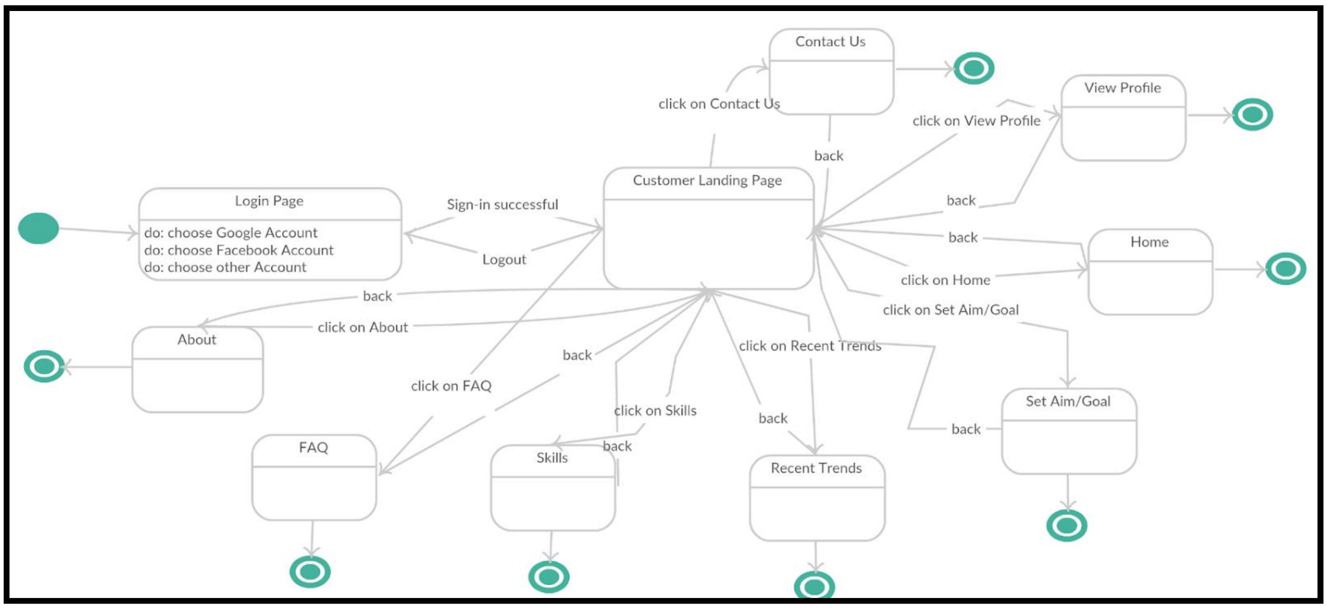


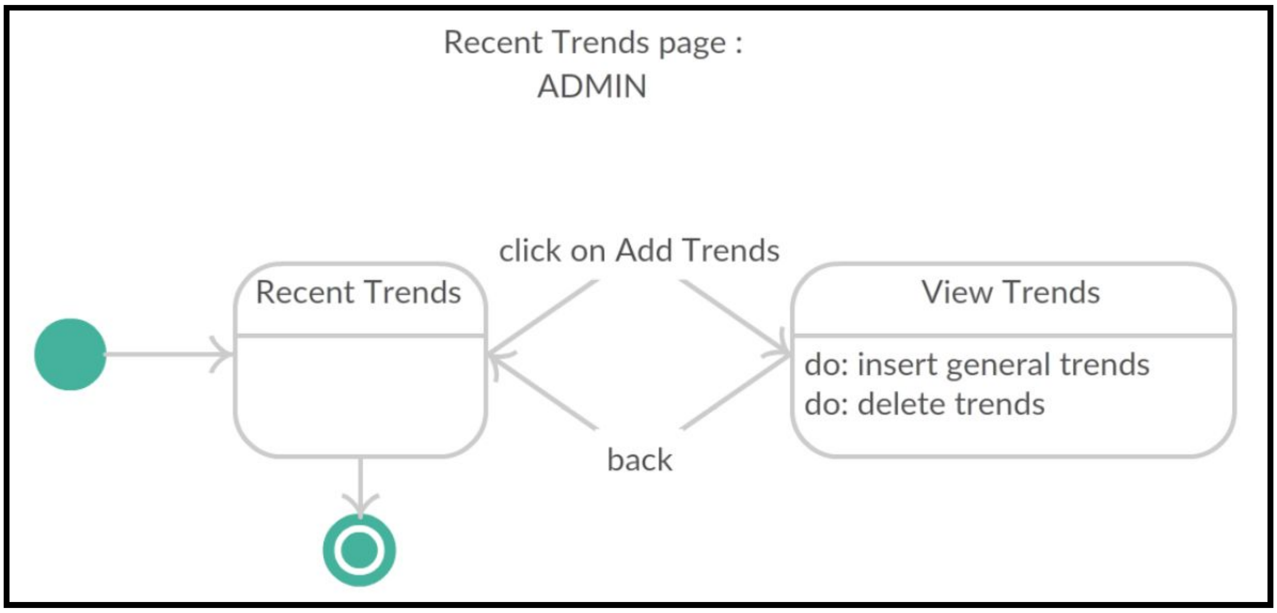

CLIENT
ADMIN
APP FRONT END
ADMIN APP FRONTEND
DATA
DATA
INFORMATION SYSTEM

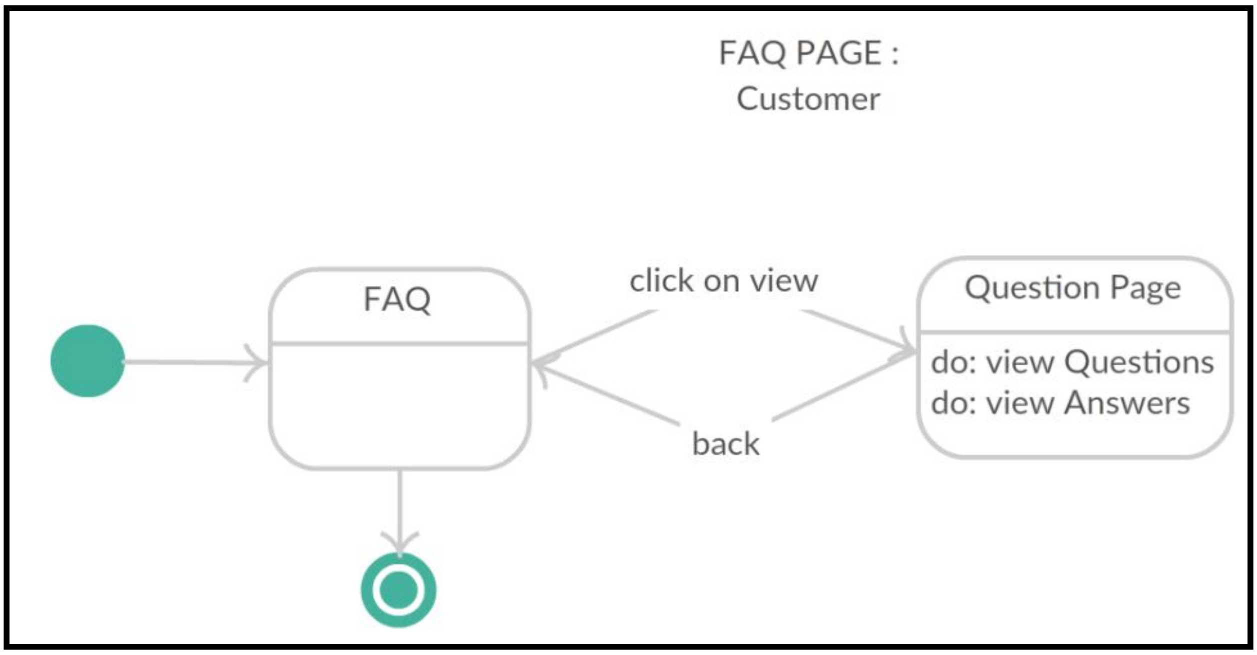

SERVER
CLIENT
LOGIN/SIGNUP
SKILL SET
RECENT TRENDS
SET AIM/GOAL
VIEW PROFILE
CONTACT
FAQ
ABOUT US
CONTROLLER
SERVER CONTROLLER
USES
DATABASE

State Diagrams

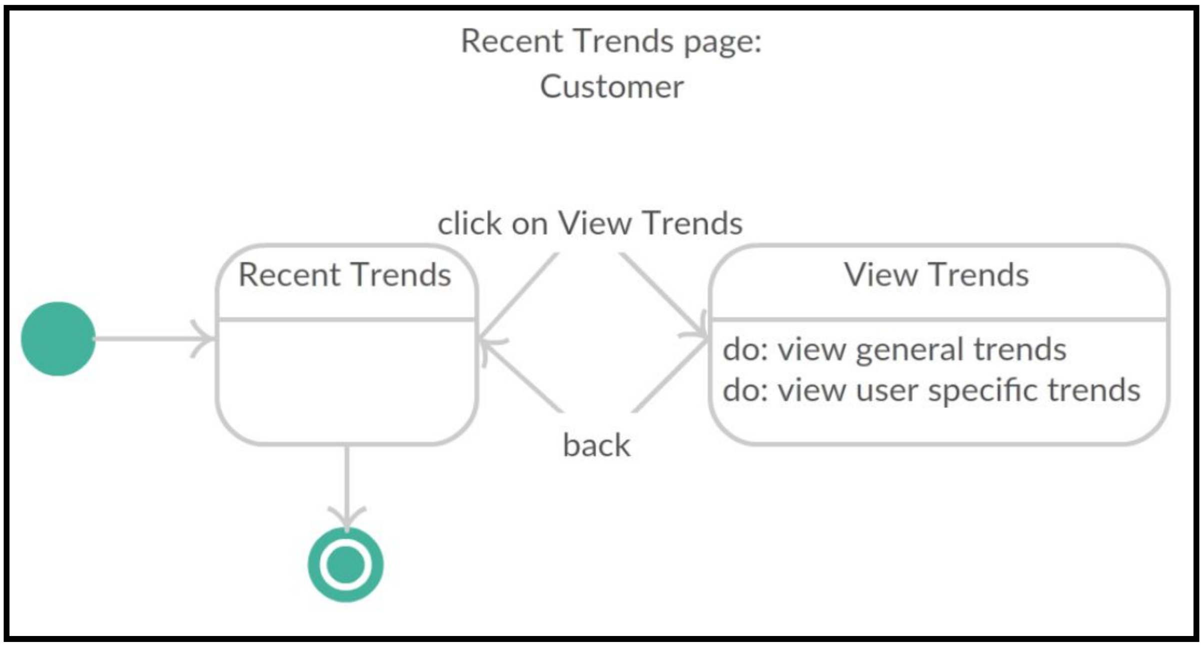
Student Landing Page



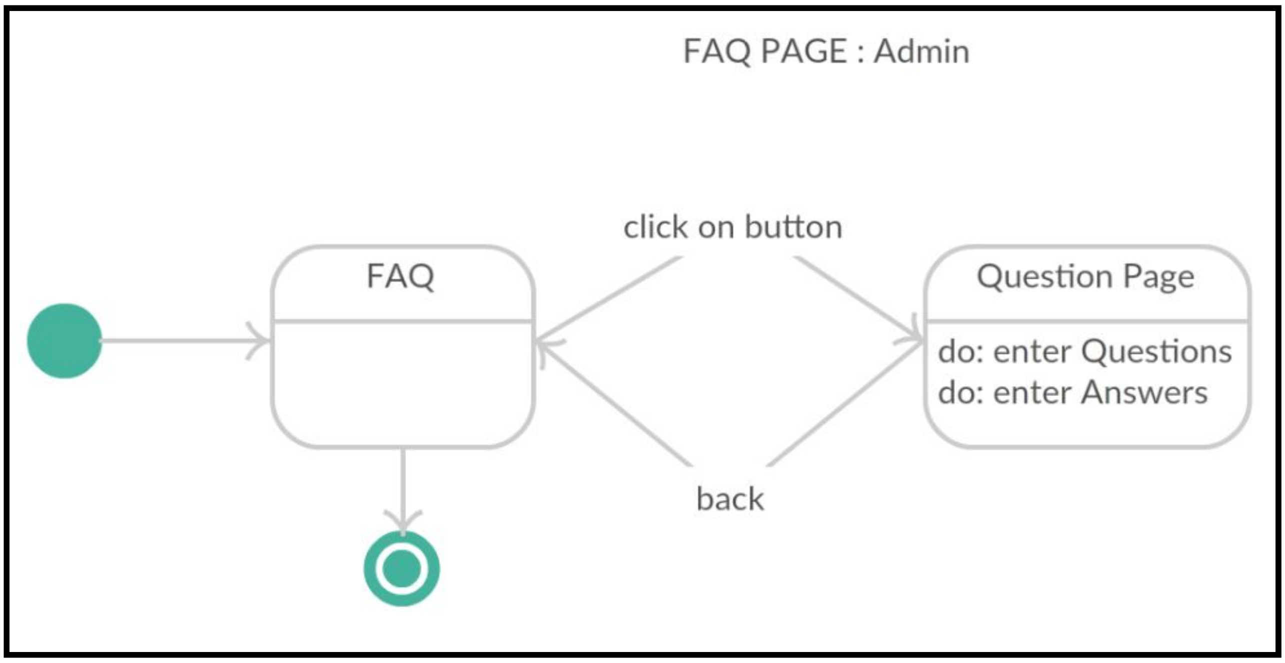


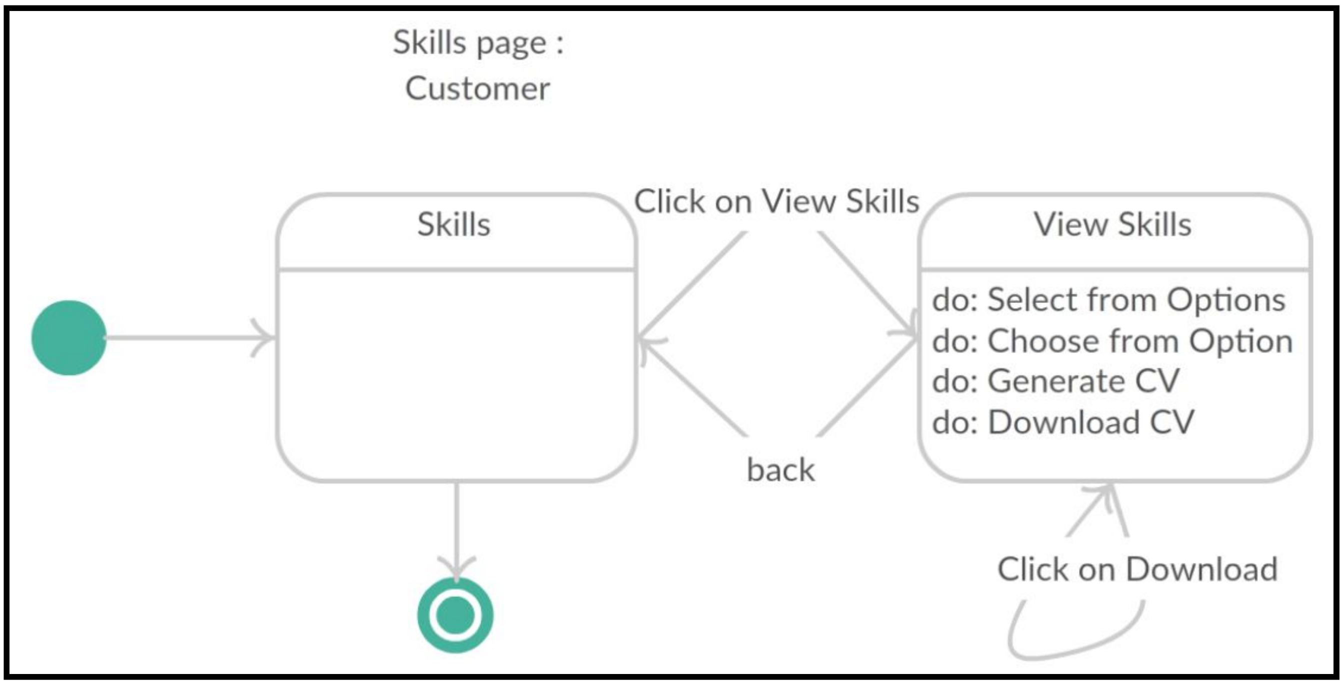


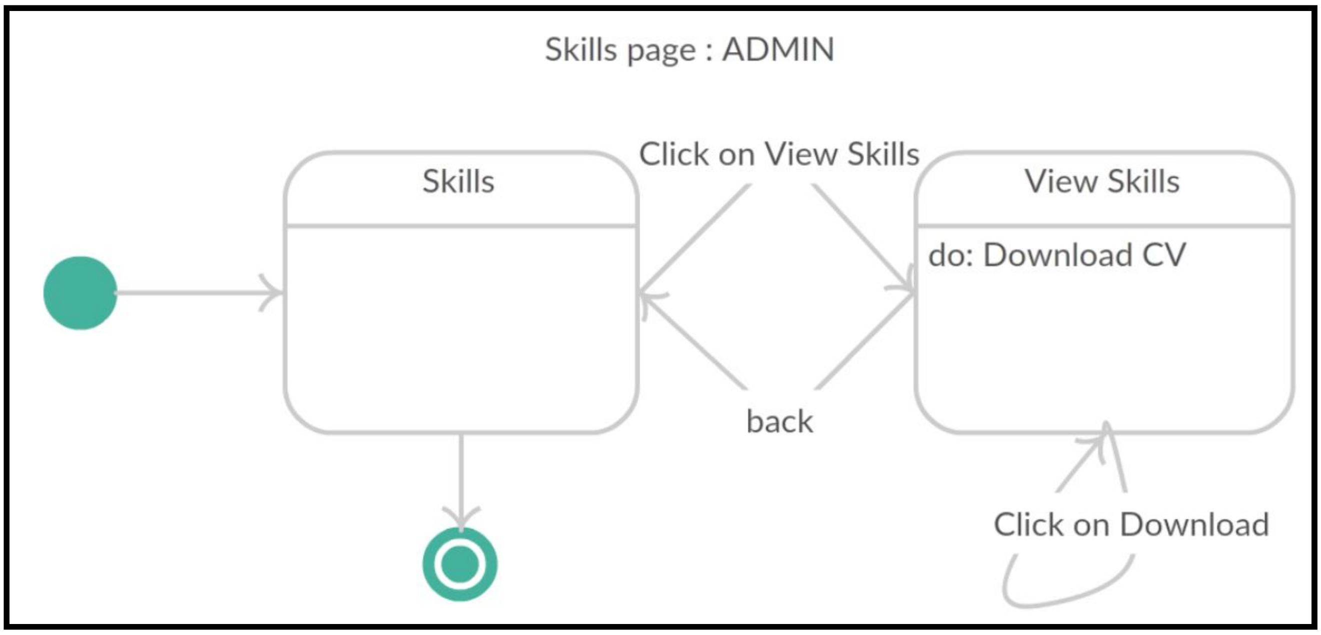
FAQ PAGE :
Customer
FAQ
click on view
back
Question Page
do: view Questions
do: view Answers

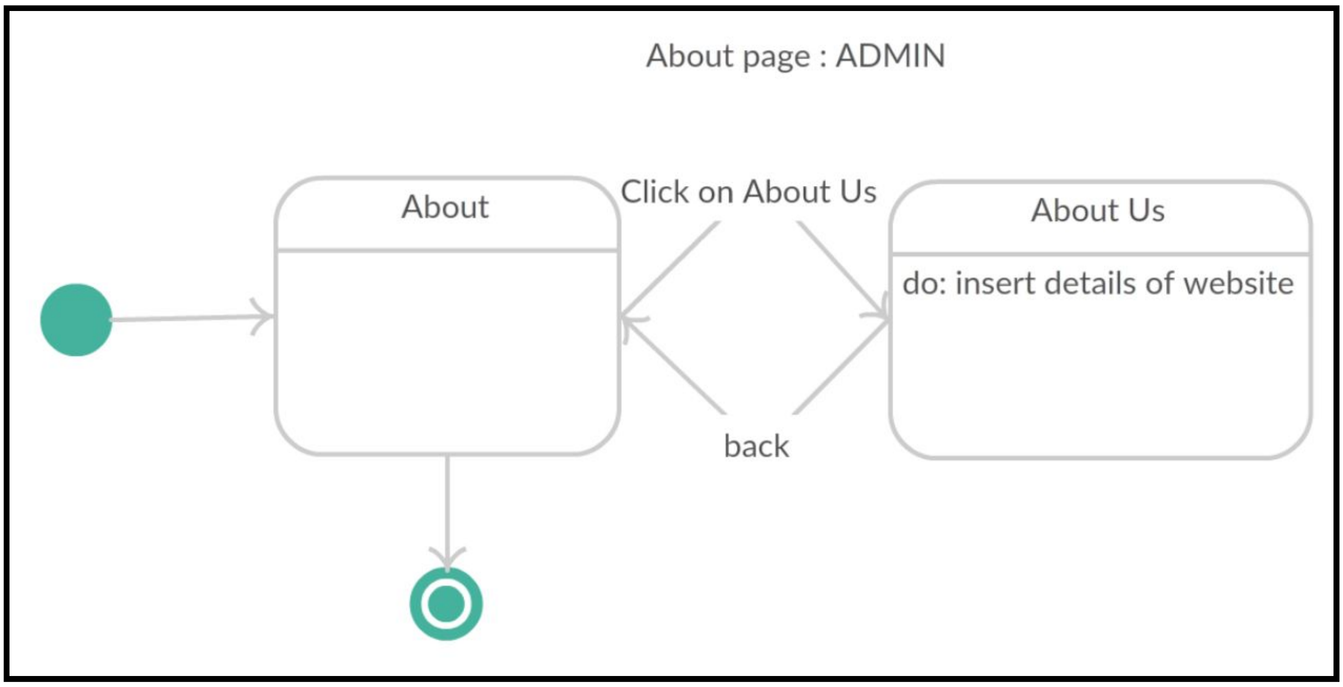


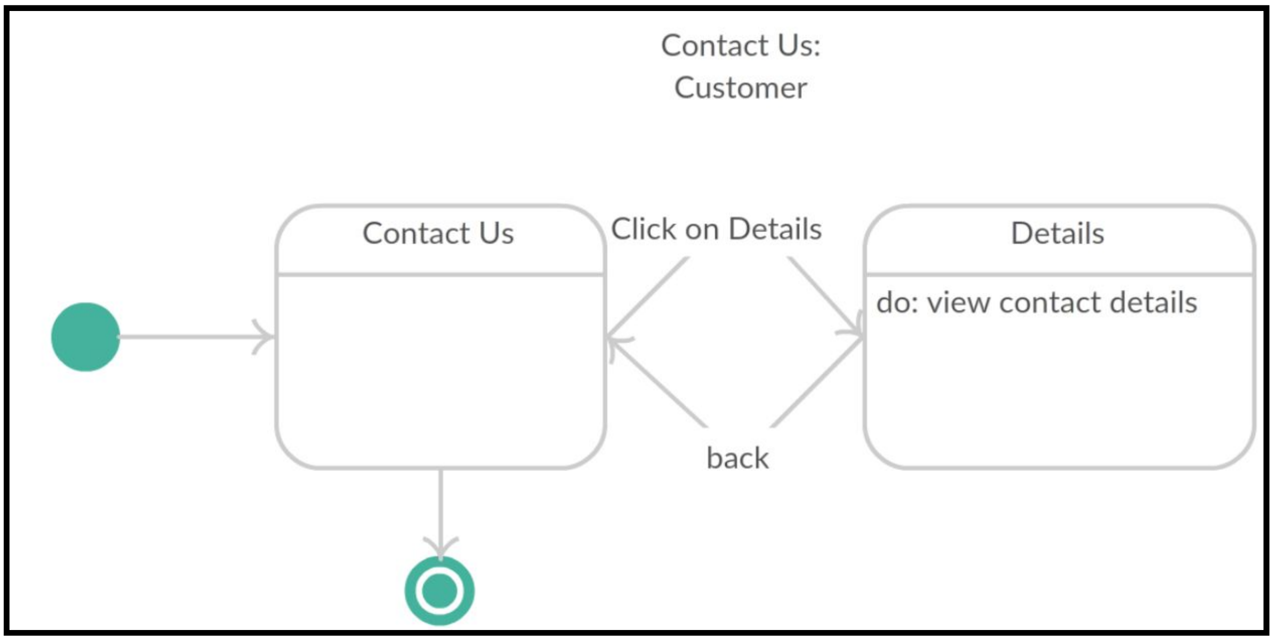
Recent Trends page:
Customer
click on View Trends
Recent Trends
View Trends
do: view general trends
do: view user specific trends
back

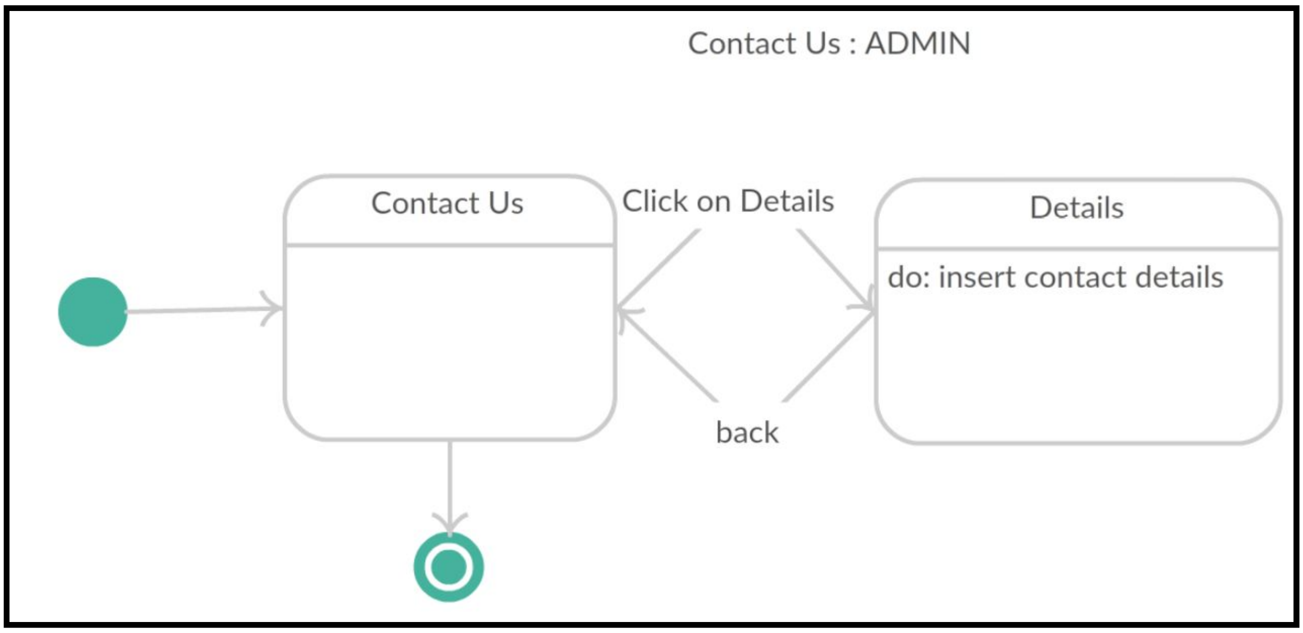

FAQ PAGE : Admin
FAQ
click on button
Question Page
do: enter Questions
do: enter Answers
back

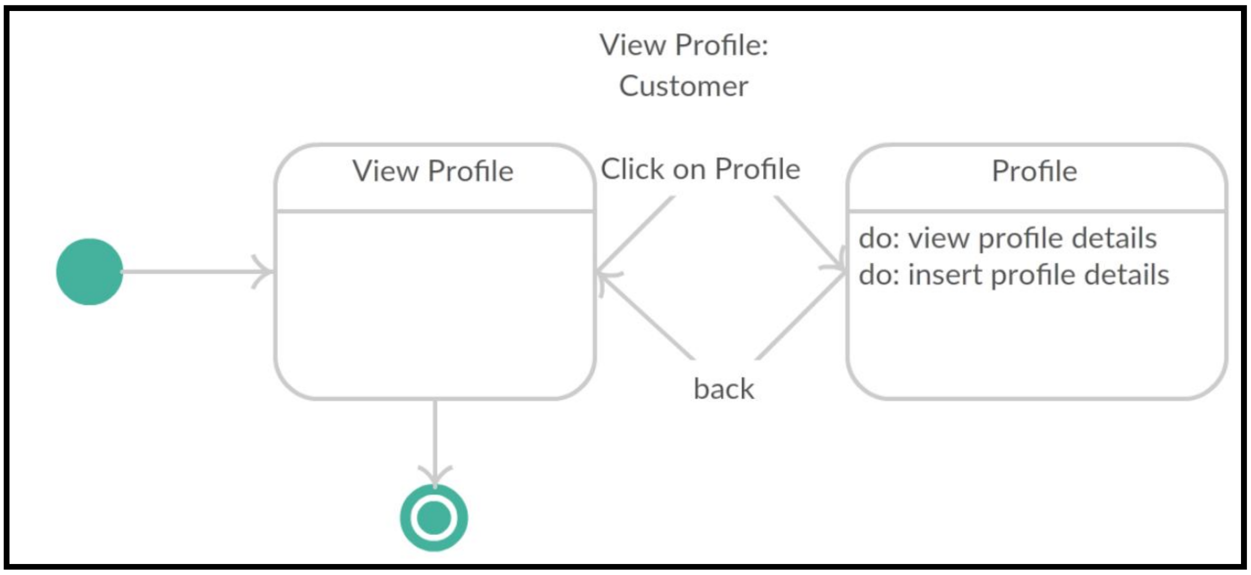

Skills page :
Customer
Skills
Click on View Skills
View Skills
do: Select from Options
do: Choose from Option
do: Generate CV
do: Download CV
back
Click on Download

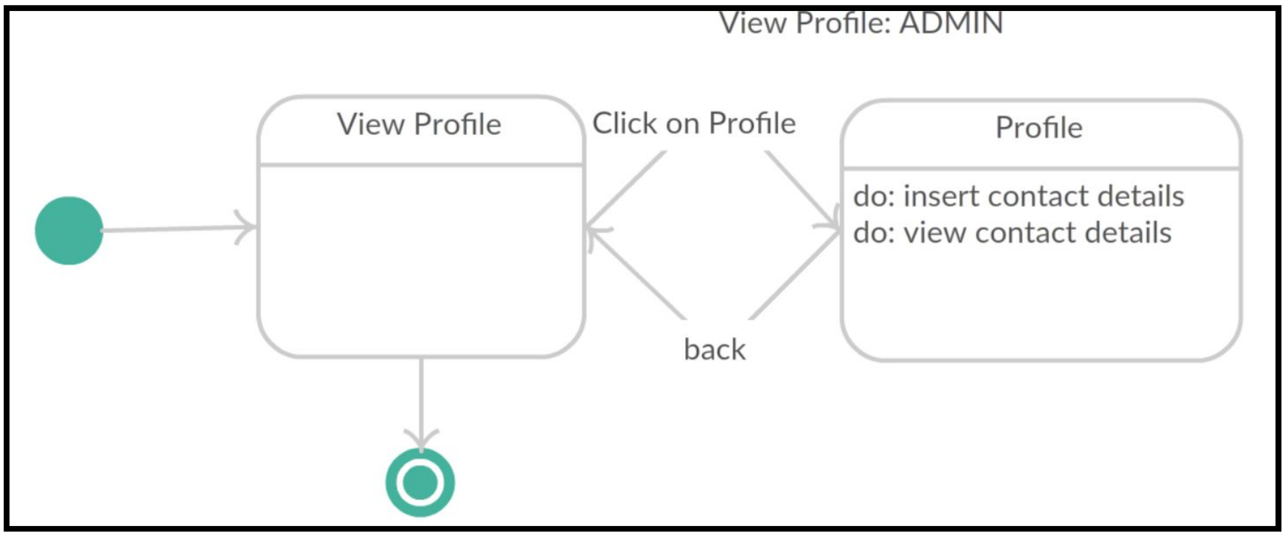

Skills page : ADMIN
Skills
Click on View Skills
View Skills
do: Download CV
back
Click on Download

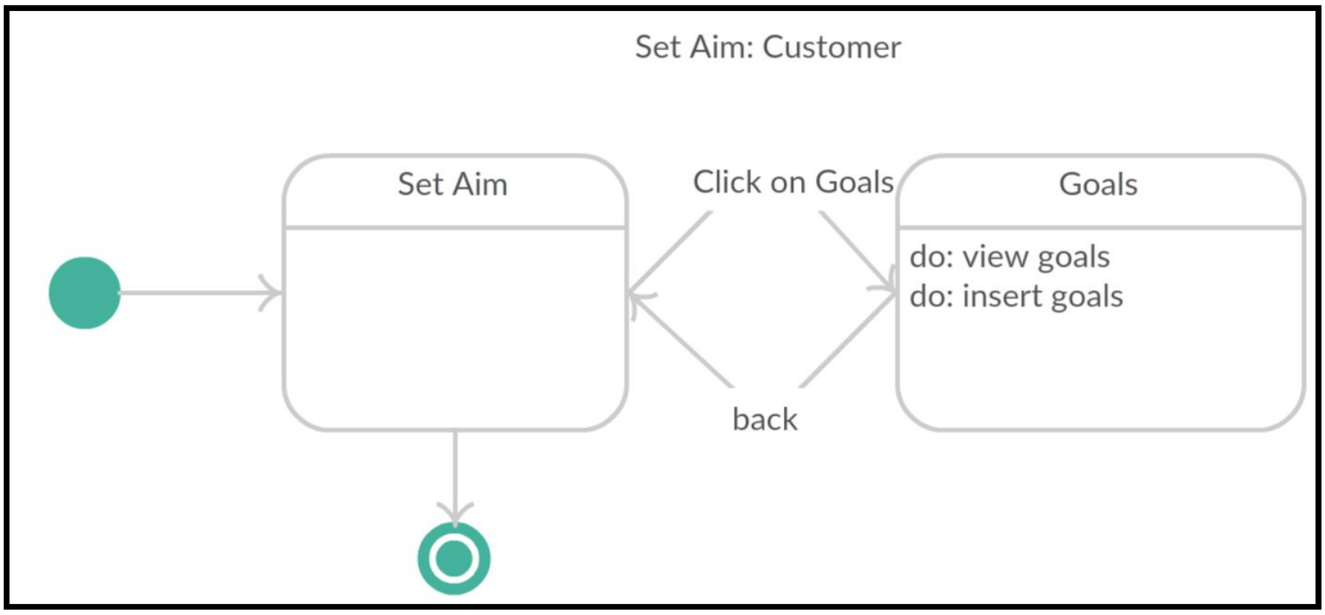

About page : ADMIN
About
Click on About Us
About Us
do: insert details of website
back


Contact Us:
Customer
Contact Us
Click on Details
Details
do: view contact details
back


Contact Us : ADMIN
Contact Us
Click on Details
Details
do: insert contact details
back


View Profile:
Customer
View Profile
Click on Profile
Profile
do: view profile details
do: insert profile details
back


View Profile: ADMIN
View Profile
Click on Profile
Profile
do: insert contact details
do: view contact details
back


Set Aim: Customer
Set Aim
Click on Goals
Goals
do: view goals
do: insert goals
back

3.1 Logical Architecture Description
Discuss some details(generic) of Logical Architecture

3.2 X Component (or Class or Function ...)
Use exactly the template you define in 3.2. If a part of the template is not applicable, then mark it N/A rather than omitting it.

3.3 Y Component (or Class or Function ...)
...

3.n Z Component (or Class or Function ...)

4.0 Execution Architecture
Define the runtime environment, processes, deployment view.
4.0 Reuse and relationships to other products
For teams doing enhancement work, reuse is an important issue. Most enhancement work should focus on extending, rather than replacing, the design and product development from earlier semesters. For teams doing new development, reuse can also be an important strategy. In some cases, there is freeware that could be incorporated. In other cases, there are existing modules or classes that could be adapted. Another possibility is the use of special tools that produce open source results and thus permissible under the terms of this course.

This section should include the following subsections as appropriate:

- how reuse is playing a role in your product design
- how reuse is playing a role in your product implementation (and the motivation for changes)
- if you are not reusing material that is available, then give motivation for why it is being thrown out.

5.0 Design decisions and tradeoffs
Use this section to motivate any decisions that will help the reader understand the design that your team is using. This section can also capture good ideas that were abandoned and the reasons for leaving them out of the design.

6.0 Pseudocode for components

7.0 Appendices (if any)

SDS component template
The template given below suggests a reasonable structure for giving a thorough description of each component described in Part 3 of the SDS. The specific information depends in part on the design approach. Your team must adapt this template to your needs and describe it in section 3.1 of your SDS.

Identification	The unique name for the component and the location of the component in the system.

Type	A module, a subprogram, a data file, a control procedure, a class, etc
Purpose	Function and performance requirements implemented by the design component, including derived requirements. Derived requirements are not explicitly stated in the SRS, but are implied or adjunct to formally stated SDS requirements.
Function	What the component does, the transformation process, the specific inputs that are processed, the algorithms that are used, the outputs that are produced, where the data items are stored, and which data items are modified.
Subordinates	The internal structure of the component, the constituents of the component, and the functional requirements satisfied by each part.
Dependencies	How the component's function and performance relate to other components. How this component is used by other components. The other components that use this component. Interaction details such as timing, interaction conditions (such as order of execution and data sharing), and responsibility for creation, duplication, use, storage, and elimination of components.
Interfaces	Detailed descriptions of all external and internal interfaces as well as of any mechanisms for communicating through messages, parameters, or common data areas. All error messages and error codes should be identified. All screen formats, interactive messages, and other user interface components (originally defined in the SRS) should be given here.
Resources	A complete description of all resources (hardware or software) external to the component but required to carry out its functions. Some examples are CPU execution time, memory (primary, secondary, or archival), buffers, I/O channels, plotters, printers, math libraries, hardware registers, interrupt structures, and system services.
Processing	The full description of the functions presented in the Function subsection. Pseudocode can be used to document algorithms, equations, and logic.
Data	For the data internal to the component, describes the representation method, initial values, use, semantics, and format. This information will probably be recorded in the data dictionary.