# Financial Advisor Web Application (T_29)

## Software Requirements Analysis and Design

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Instructor: Anjana Shah
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# Table of Content

# 1.0 Introduction

## 1.1 Purpose

The goal of this document is to provide a clear idea of the Financial Advisor Web Application. This document will cover the purpose of the features of the system and the functionality of each feature, as well as the constraints of using the system. This document is to be presented to the Stakeholders and developers of the system represented by Instructor and Students.

## 1.2 Scope

This web application is a system to be used by the consulting team and consulting manager internally, and clients who seek a detailed financial consulting externally. The consulting process is used to be based on peer meeting between the client and the consulting team member in order to address the financial requirements of the client, but with the increasing demand of instant consulting and the expansion of the market share of the company, the company decided to deploy a modern and up-to-date tool to help handle the increasing work load. Client's financial data will be used to provide advanced analysis through using financial analysis techniques to give an accurate estimate of how the performance will be in the short and medium term by default, in addition to short and medium term special requests. The long-term analysis will be only requested by the client, in that case the process will be only handled by the consulting team but not the system.

# 2.0 System Overview

The system is to be used by three actors, which are client, manager, and consultant team member.
The structure of the system consists of three front-end components which are client interface and manager interface and consultant team member interface, and these interfaces are connected to central back-end component that stores, process and display data. The system will cover client's financial data, allowing the clients to enter their financial data or upload them. After that step, the clients will be able to see basic financial ratios based on the data that they have uploaded. The analysis step comes after this point, where the clients can request some immediate analysis that is provided by the system by performing specific processes on the dada or they can request a detailed analysis from the system in which at this point the manager and consultant plays an important role. Once the detailed report is requested by the client, the request will be based to the manager as a notification or status update, then the manger will pass this request to consulting specialist who will use the clients data in order to generate a report that fulfils the clients financial needs. Along with the process clients should be able to track their financial data using a dashboard that visualize their financial performance.

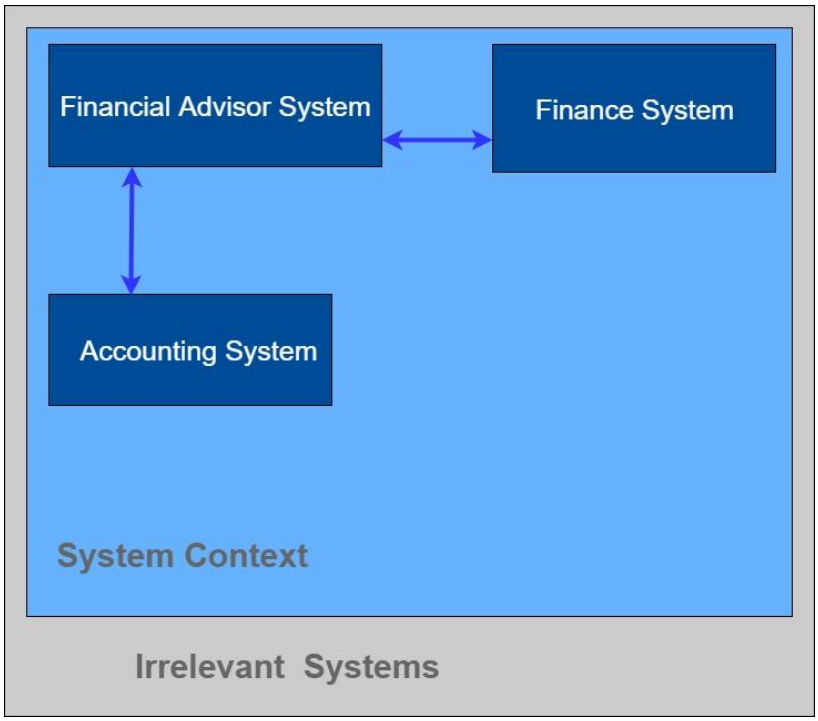
## 2.1 Project Perspective

This system aims to provide a group of features that uses already existing data, where clients will be able to have a clear picture of their financial performance. By implementing these features, clients will be using a service that used to be peer to peer service which requires their physical existence at one of the company locations to receive the service. But with this system, clients should be able to receive same services online, which will save clients time to schedule meeting and travel to one of company locations besides the instant extraction of the required information, analysis, and consulting reports.

## 2.2 System Context

This system is part of the general system that the company uses, and its data is provided by the general system. By registering to this system (financial advisor), clients should be able to access to specific features that are only available within this system. That means clients may be already existing clients of the company, but by

registering to this system, clients will have access to services that the company will be providing online to reduce service time. This system does not interact or uses any external services or products. And it can only update the existing client's data or can create new accounts for new clients that seek the services of the company. The source of this system data is the general system data that company stores. It only uses the data required for analysis or providing the consulting service. System scope will only focus on specific part of the data storage that the company uses, that means it can only update the data or create new data by providing new clients information. The systems that (financial advisor) interacts with are (but not limited to): Accounting system, and financial management system. The data of the mentioned systems is used to provide detailed financial analysis and (financial advisor) will only update the part that is related to providing the consulting service which means using existed data to create new ones and store them separately.




2.3 General Constraints

- Regarding back end, (Financial Advisor) must interface with existing accounting, investment, and inventory systems. Thus, (Financial Advisor) must use the same data storage technology that is used in the existing systems.
- Regarding front-end the system must be accessible on all major browsers on mobile and desktop devices. (Financial Advisor) does not recommend a particular browser, rather than recommending what provides the best user experience. In general, operating systems comes with a specific browser version preinstalled, in that case recommendations must not go backwards to a lower version, noticing that browsers run differently under various operating systems.
- Any browser that supports HTML5 should work fine with (Financial Advisor). This system is using the new capabilities available in modern, up-to-date browsers that also provides improved security and performance.
- All browsers must have cookies and JavaScript enabled to use (Financial Advisor); these are normally the default settings.

It is important to notice that recommendations are a result of extensive testing, and with the broad range and large number of users across the system, it is necessary at some point to discontinue with the support of outdated browser versions and stay up-to-date with new releases.

2.4 Assumption and Dependencies

- Assumptions:
  - (Financial Advisor) will not violate the ethical rules of working in financial industry to ensure that the service will not be blocked by ISP's.
  - Clients are aware of the system requirements, which will be ensured by using modern devices and browsers.
  - Confidentiality of the data must be ensured by implementing up-to-date security standards and if necessary, authentication.
  - The services of this web application must be available 24/7 to ensure providing the service any time. And when a service shortage is expected, clients must be warned.
  - The services of (Financial Advisor) will charge clients as if the service is provided in an office.

- Dependencies:
  - (Financial Advisor) is highly dependent on the general system.
  - All interfaces must be user friendly without any unnecessary complications.
  - All API's that are used in this application must be in active condition.

# 3.0 Functional Requirements

3.1 Functional Requirements (Feature #1: Register and Login)

### 3.1.1 Introduction

Clients must be able to register to the system, and Login. Registration must require specific data to be filled in registration form to allow the system to recognize existing clients and new clients. Login may use authentication for the sake of confidentiality.

### 3.1.2 Inputs

Inputs of registration feature includes client's information, such as first name, last name, email address, phone number and password.
Inputs of login feature includes email address and password.

### 3.1.3 Processing

All inputs must be validated either in registration or login, besides the validation of data types, numeric values and string values, another validation is required for registration which is querying if the client is already existing in the system or not.

### 3.1.4 Outputs

After registration, if the client already exists, the system must show the dashboard of client profile with default indicators for each client. If the client is new to the company, the system must show an empty dashboard with some options to upload data to the system.

3.2 Functional Requirements (Feature #2: Dashboard)

#### 3.2.1 Introduction

Dashboard is a visualization tool that shows basic financial ratios and indicators. It is an effective tool to give clients a clear picture of their financial stands and their performance.

#### 3.2.2 Inputs

Dashboard uses specific parts of system data that is related to display the required information in a dynamic layout which helps clients to easily recognize strengths and weakness in their financial data.

#### 3.2.3 Processing

Dashboard depends on modules that extract the required data from data storage and display those data in a standard HTML 5 component with the use of JavaScript to deliver a dynamic content. Usually database query methods are used in this process.

#### 3.2.4 Outputs

HTML 5 dynamic template with graphs and indicators.

### 3.3 Functional Requirements (Feature #3 Request detailed analysis)

#### 3.3.1 Introduction

This feature is added to help clients request detailed reports for analytical purposes. This type of reports is not displayed in client's dashboard because it is related to long term performance analysis and it can help strategical decision-making process.

#### 3.3.2 Inputs

Inputs of this feature depends on the type of requested reports, the system will offer a built-in reports that are generally used in such type of analysis, in that case the consultant team member will be using a predefined standard financial information to complete this analysis. On contrary, if the client aims a different type of reports that is not in the built-in list, the consultant team member will be using various data sources upon client's request.

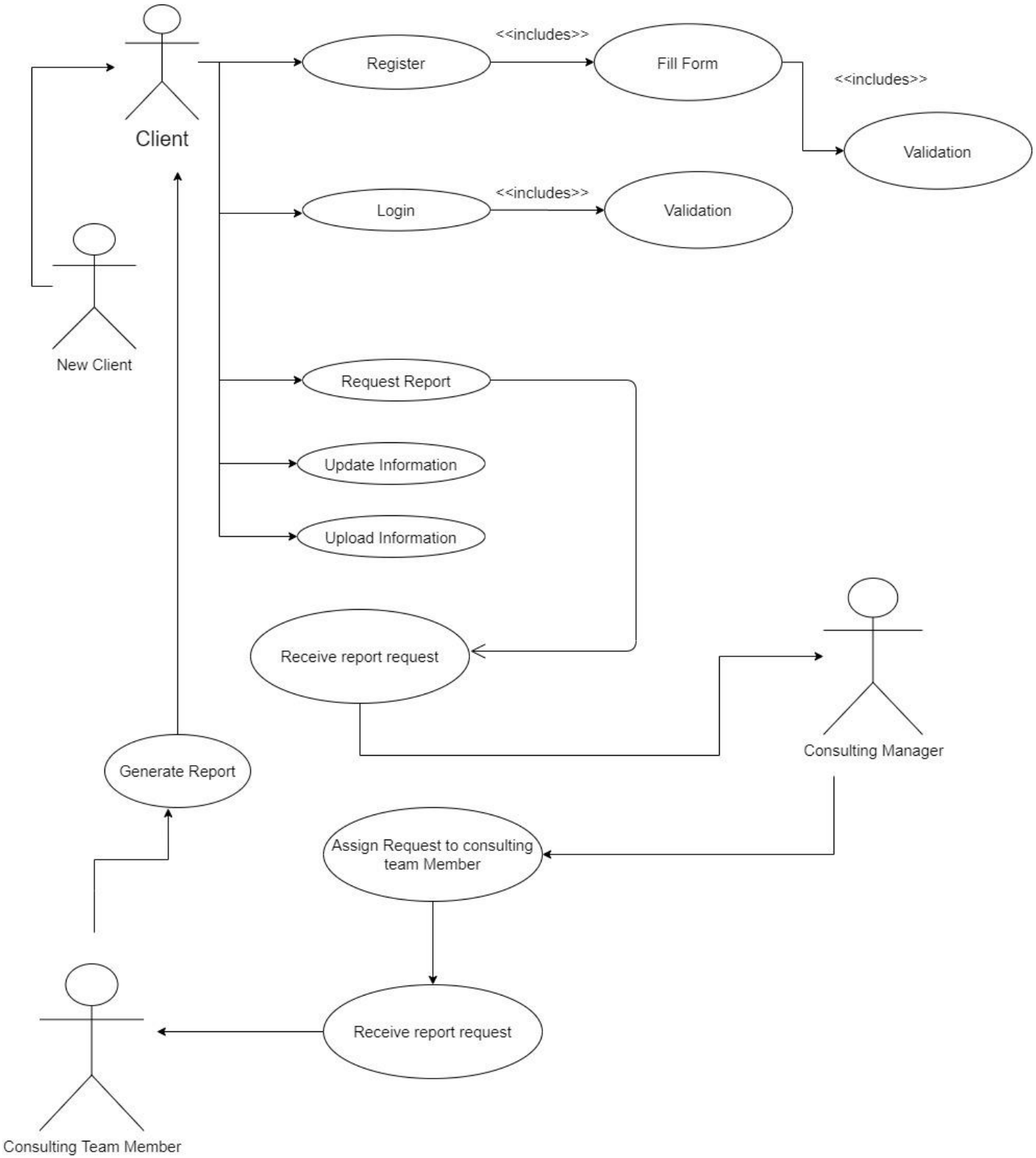
#### 3.3.3 Processing

For the built-in reports, the consulting team member will use specific information that are usually used in such analysis without any extra efforts to prepare the data, because for this type of standard reports the required financial information is clear to be defined and used.
For reports that are not built-in, consulting team member must prepare the appropriate data that is required for such reports and then apply analysis methodologies and generate the report.
In both cases, when clients submit their request, the request will be submitted to the consulting manager interface and then will be forwarded to the consulting team member to be processed.

#### 3.3.4 Outputs

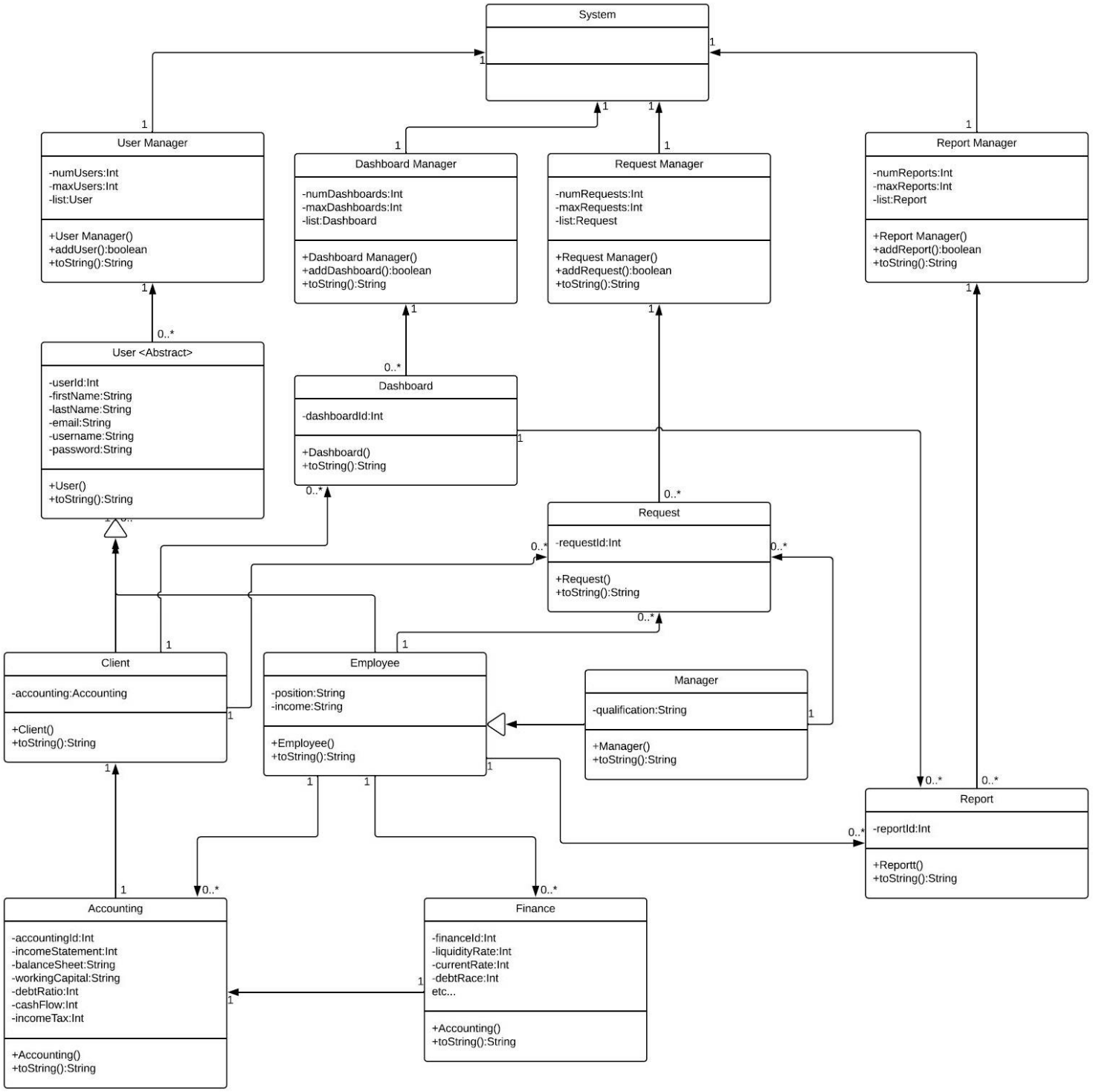
Financial reports and different formats, PDF, Word Document, etc.

3.4 Use Cases

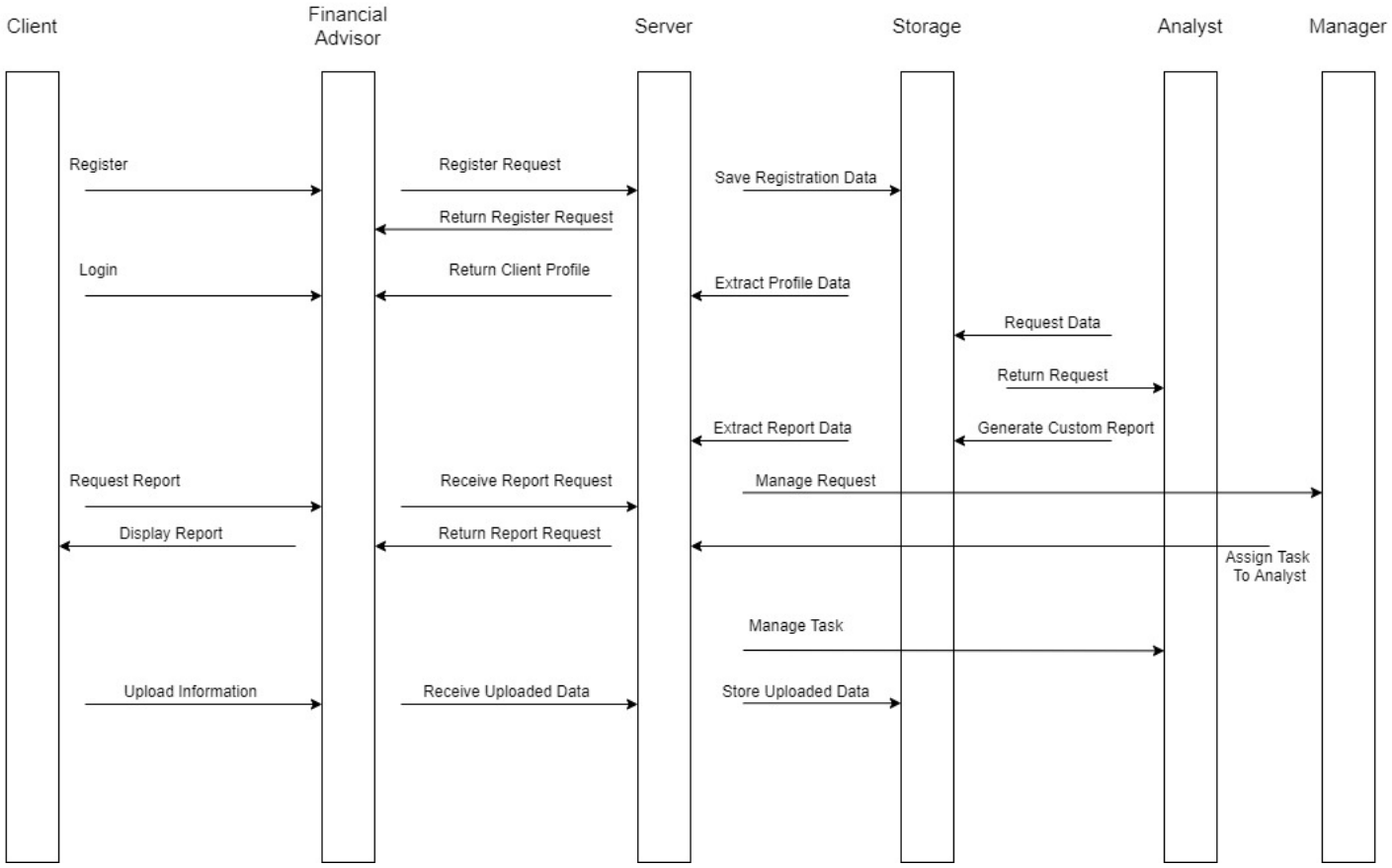

Client
Register
<<includes>>
Fill Form
<<includes>>
Validation
Login
<<includes>>
Validation
New Client
Request Report
Update Information
Upload Information
Receive report request
Consulting Manager
Generate Report
Assign Request to consulting team Member
Receive report request
Consulting Team Member

## 3.5 Data Modeling and Analysis

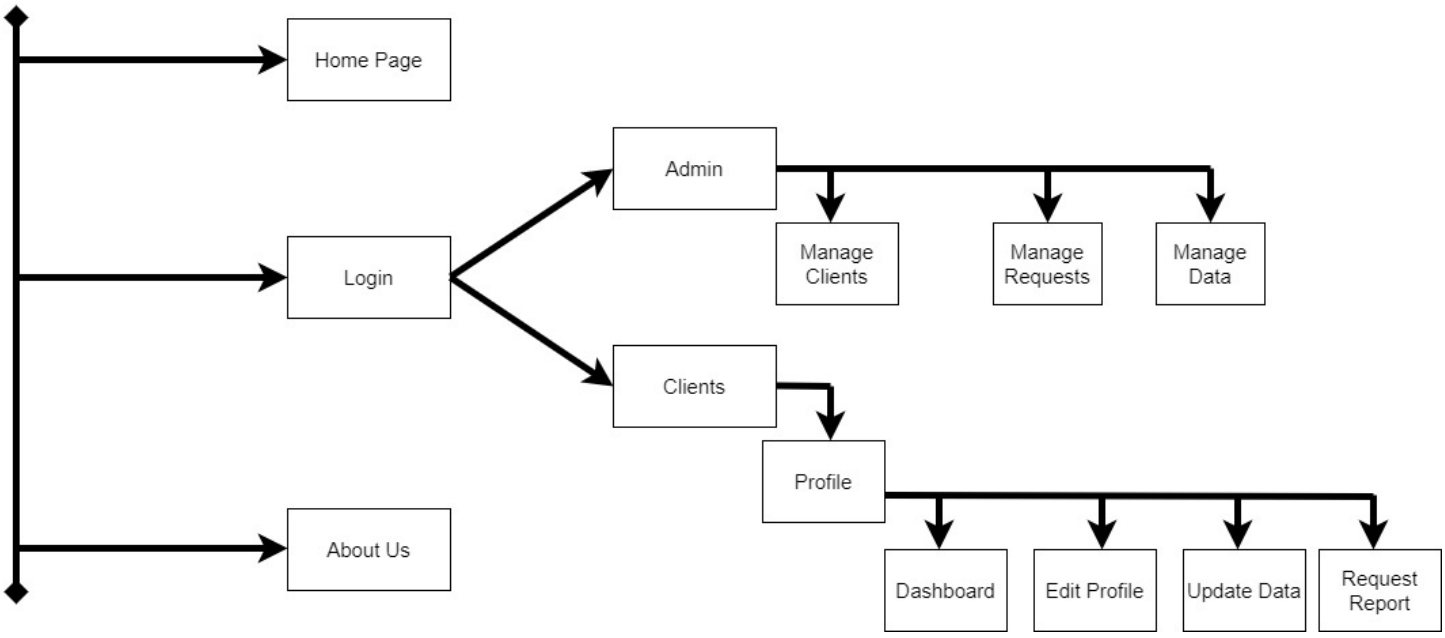
### 3.5.1 Normalized Data Model Diagram



### 3.5.2 Activity Diagram

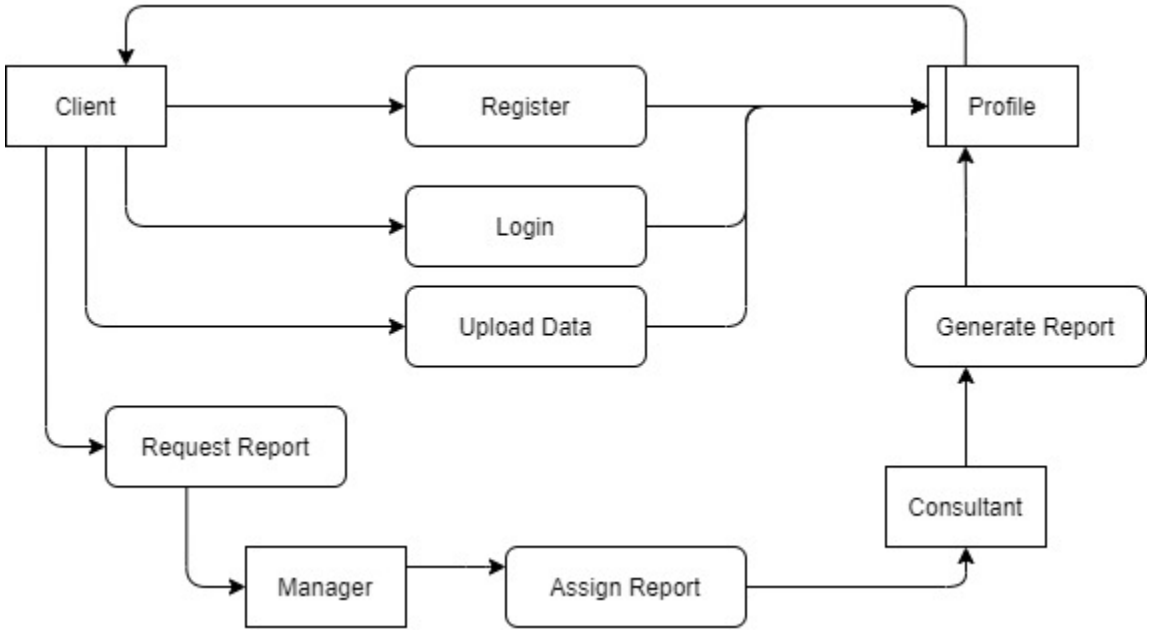



### 3.5.3 System Architecture



3.6 Process Modeling

### 3.6.1 Data Flow Diagram




## 4.0 Non-Functional Requirement

There are some of the constraints that the system must work within. The Non-Functional requirements that (Financial Advisor) development deals with are:

- Performance Requirements:

The system must be compatible with all kinds of web browsers, and mobile phones and tablets.

- Security Requirements:

  - Any modifications to the data that the system stores must be authorized by system administrator specifically the consulting manager and the authorized developers.
  - Any part of the system must not be accessible for non-authorized users, that means a client can only access to the services that are available to clients using email address and a password to login.
  - Registration process must avoid any mishandling and mismatching errors to avoid confidentiality issues and to allow the client to access to the proper information.
  - Some of the services that the system provides rely on the general system data, clients must not be able to update such data before acquiring the authorization from system admins.

- Business Rules:

  - The system must abide to financial industry standards related to financial ethics and the standards of the science of finance. That means only financial specialists must gain authorization to access to the system and use and update its data.
  - System administrator is the only person who have the full permission to control the system, besides the development team. System administrator can give permission for consulting team member to have access to the data required for providing the financial service. And every update that clients do must be monitored by all users.

- Software Quality:

  - Reliability: system must be used by multiple users concurrently, and a user must be able to access the system with a minimum requirements device (PC, Phone, Tablet...)
  - Availability: system must be available 24/7 with pre-notifications for maintenance.
  - Data backup is a must.
  - System must not crash down easily, and any possible crash must not affect security requirements or confidentiality.

## 5.0 Logical Database Requirements

- Databases:

  - There are two options for storing the data either a SQL database, or No-SQL database.
  - The system must store all clients account information, as well as their accounting data and financial data.
  - Clients information such as personal information, password, email, etc. must be stored in a separate database for the purposes of login and registration.
  - Accounting and financial data must be stored separately in accounting system and financial system with a reference to the client they belong to, and it will be accessed by client's profile to display various information.

- File Format

  - For updating the financial data clients can upload their data.
  - Upload file can only use CSV, Excel format.
  - Reports can be downloaded using various file format but limited to: PDF, CSV, Excel, and Word Documents.

## 6.0 Approval

| Project Role | Name | Signature | Date |
|---|---|---|---|
| Instructor | Anjana Shah | | 15 – 11 – 2020 |
| Student | Sureya Farah | Sureya Farah | 15 – 11 – 2020 |
| Student | Sheak Iftakhar Rahaman | Sheak Iftakhar Rahaman | 15 – 11 – 2020 |
| Student | Adrian Filipe | Adrian Filipe | 15 – 11 – 2020 |
| Student | Kanta Husari | Kanta Husari | 15 – 11 – 2020 |