Project Name: Toys Give Away

Project Member:

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Abstract:

This project deals with developing an online website for selling and buying toys. The seller can post the toys along with toy details on the website while the buyer can view the toys and decide if he waits to buy. In order to facilitate this separate buyer and seller page is provided to the user. The system is implemented using a 3-tier approach, with a back end database, a middle tier of Spring MVC, and web browser as the front end client.

In order to develop an online toys buy and sell website, a number of Technologies must be studied and understood. These include multi-tiered architecture, server and client side scripting techniques, implementation technologies such as Spring MVC, programming language (such as Core Java, Advance Java), relational databases (such as MySQL).

This is a project with the objective to provide a platform where the seller can post the toys while on the other hand a potential buyer can view that toys and decide whether to buy it or not. Here seller will be given the facilities for Add,Update,Delete,View the product while the Admin will be able to see seller and buyer details. Buyer can also view the product and can see sellers details along with contact no and E-mail in case he wants to communicate with the seller.

Implementation Technologies:

1. Spring Framework:

Spring Framework is a Java platform that provides comprehensive infrastructure support for developing Java applications. Spring handles the infrastructure so you can focus on your application.

Spring enables you to build applications from “plain old Java objects” (POJOs) and to apply enterprise services non-invasively to POJOs. This capability applies to the Java SE programming model and to full and partial Java EE.

1.1 Features of Spring Framework:

1. Lightweight

Spring is modular lightweight framework which allows you to selectively use any of its modules on the top of Spring Core.

2. Inversion of Control (IOC)

This is another top feature of Spring framework where application dependencies are satisfied by the framework itself. Framework creates the object in runtime and satisfies application dependencies.

3. Aspect Oriented Programming (AOP)

Aspect Oriented Programming (AOP) is very popular in programming world and in Spring it is well implemented. Developer can use Aspect Oriented Programming (AOP feature of Spring to develop application in which business logic is separated from system services.

4. Container

Spring provides their own container for managing the bean lifecycle.

5. MVC Framework

Spring MVC Framework is used for developing MVC based web applications.

6. Transaction Management

Spring framework provides generic Transaction Management layer which can be used with or without J2EE(JEE) environment.

7. JDBC Exception Handling

Spring provides their own abstraction of JDBC exception which further simplifies the exception handling in program.

1.2 Advantages of Spring Framework:

1. Solving difficulties of Enterprise application development

Spring is solving the difficulties of development of complex applications, it provides Spring Core, Spring IoC and Spring AOP for integrating various components of business applications.

2. Support Enterprise application development through POJOs

Spring supports development of Enterprise application development using the POJO classes which removes the need of importing heavy Enterprise container during development. This makes application testing much easier.

3. Easy integration other frameworks

Spring designed to be used with all other frameworks of Java, you can use ORM, Struts, Hibernate and other frameworks of Java together. Spring framework do not impose any restriction on the frameworks to be used together.

4. Application Testing

Spring Container can be used to develop and run test cases outside enterprise container which makes testing much easier.

5. Modularity

Spring framework is modular framework and it comes with many modules such as Spring MVC, Spring ORM, Spring JDBC, Spring Transactions etc. which can used as per application requirement in modular fashion.

6. Spring Transaction Management

Spring Transaction Management interface is very flexible it can configure to use local transactions in small application which can be scaled to JTA for global transactions.

2. The JDBC Template

The central class of the Spring JDBC abstraction framework is the **JdbcTemplate** class that includes the most common logic in using the JDBC API to access data, such as handling the creation of connection, statement creation, statement execution, and release of resource. The**Jdbc-Template** class can be found in the **org.springframework.jdbc.core** package.

The **JdbcTemplate** class instances are thread-safe once configured. A single **JdbcTemplate** can be configured and injected into multiple DAOs.

We can use the **JdbcTemplate** to execute the different types of SQL statements. **Data Manipulation Language** (**DML**) is used for inserting, retrieving, updating, and deleting the data in the database such as **SELECT**, **INSERT**, or **UPDATE** statements

2.1 MySQL

MySQL, the most popular Open Source SQL database management system, is developed, distributed, and supported by Oracle Corporation.

Features of MySQL:

- **MySQL is a database management system.**

  A database is a structured collection of data. It may be anything from a simple shopping list to a picture gallery or the vast amounts of information in a corporate network. To add, access, and process data stored in a computer database, you need a database management system such as MySQL Server. Since computers are very good at handling large amounts of data, database management systems play a central role in computing, as standalone utilities, or as parts of other applications.

- **MySQL databases are relational.**

  A relational database stores data in separate tables rather than putting all the data in one big storeroom. The database structures are organized into physical files optimized for speed. The logical model, with objects such as databases, tables, views, rows, and columns, offers a flexible programming environment.

- **MySQL software is Open Source.**

  Open Source means that it is possible for anyone to use and modify the software. Anybody can download the MySQL software from the Internet and use it without paying anything.

- **The MySQL Database Server is very fast, reliable, scalable, and easy to use.**

  MySQL Server was originally developed to handle large databases much faster than existing solutions and has been successfully used in highly demanding production environments for several years. Although under constant development, MySQL Server today offers a rich and useful set of functions. Its connectivity, speed, and security make MySQL Server highly suited for accessing databases on the Internet.

- **MySQL Server works in client/server or embedded systems.**

  The MySQL Database Software is a client/server system that consists of a multithreaded SQL server that supports different back ends, several different client programs and libraries, administrative tools, and a wide range of application programming interfaces (APIs).

3. Hardware and Software Requirements (Minimum):

Hardware:

1. Intel i3 processor 3rd generation or later / AMD Ryzen 200 2nd generation or later
2. 2 GB ddr3 ram.
3. Windows 7 Home edition or later.
4. 200 GB Sata HDD Space
5. Data Connection 200 kbps

Software:

1. Eclipse 4.7 Oxygen
2. MySQL 5.7 with Workbench 8.0
3. Google Chrome version 79.0
4. Apache Tomcat Server 8.5
5. Maven Dependencies
6. Visual Studio
7. Node JS

4. ER Diagram:

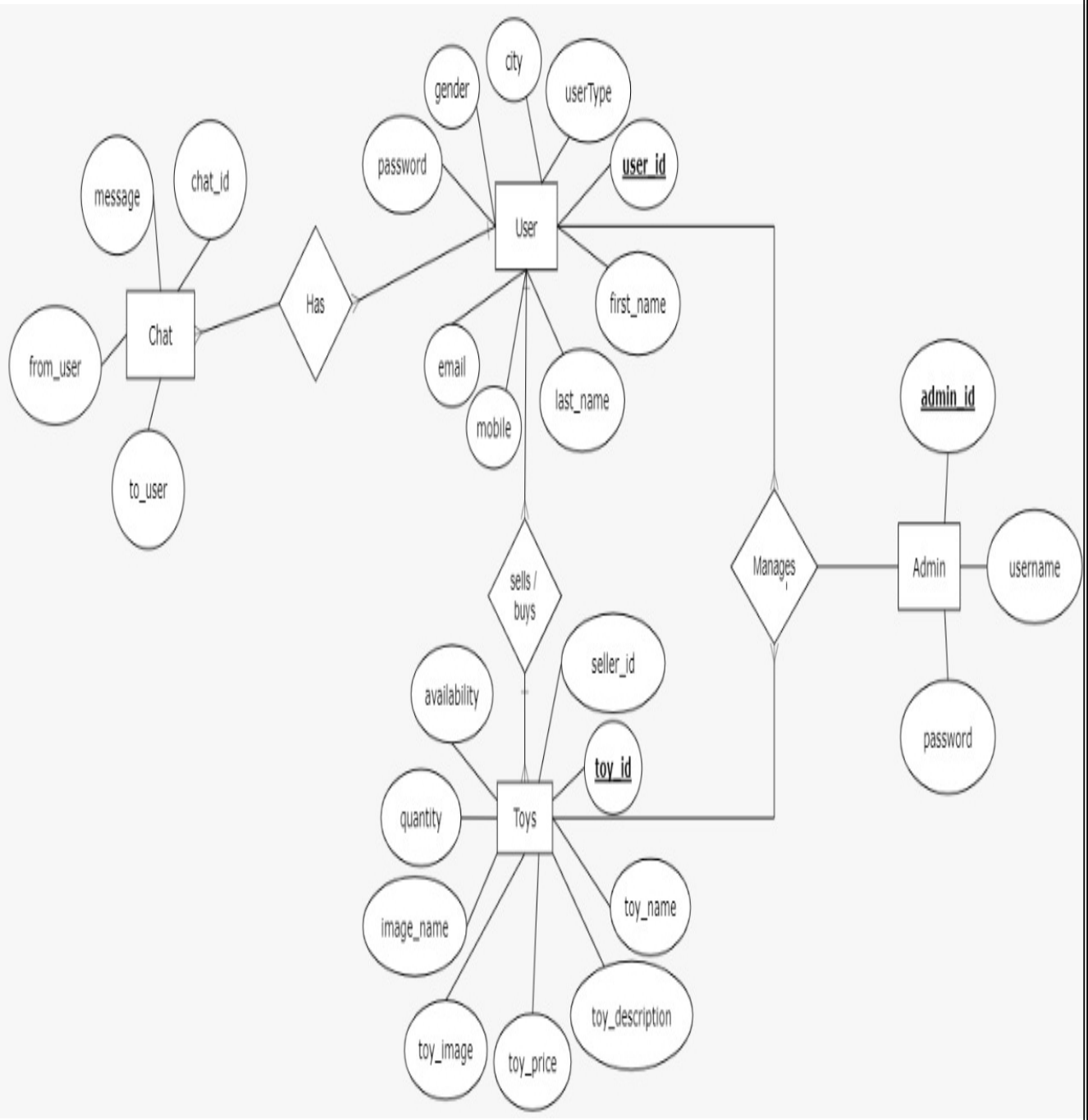

Figure 1: ER Diagram

5. Table Structures:

1. **Table name:user**

Column name	Type			
User_id	INT	NO	PRI	auto_increment
first_name	varchar(50)	YES		
last_name	varchar(50)	YES		
email	varchar(50)	YES		
password	varchar(20)	YES		
gender	varchar(6)	YES		
city	varchar(30)	YES		
user_type	varchar(10)	YES		
mobile	varchar(45)	YES		

2. **Table name:admin**

Column name	Type			
admin_Id	INT	NO	PRI	auto_increment
username	varchar(20)	YES		
password	varchar(20)	YES		

3. **Table name:toys**

Column name	Type			
toys_id	INT	NO	PRI	auto_increment
toy_name	varchar	(50)	YES	
toy_description	varchar	(200)	YES	
toy_price	MEDIUMTEXT		YES	
quantity	INT		YES	
availability	TINYINT	(1)	YES	
toy_image	MEDIUMTEXT		YES	
image_name	varchar	(200)	YES	
seller_id	INT		YES	

6. UML Diagrams:

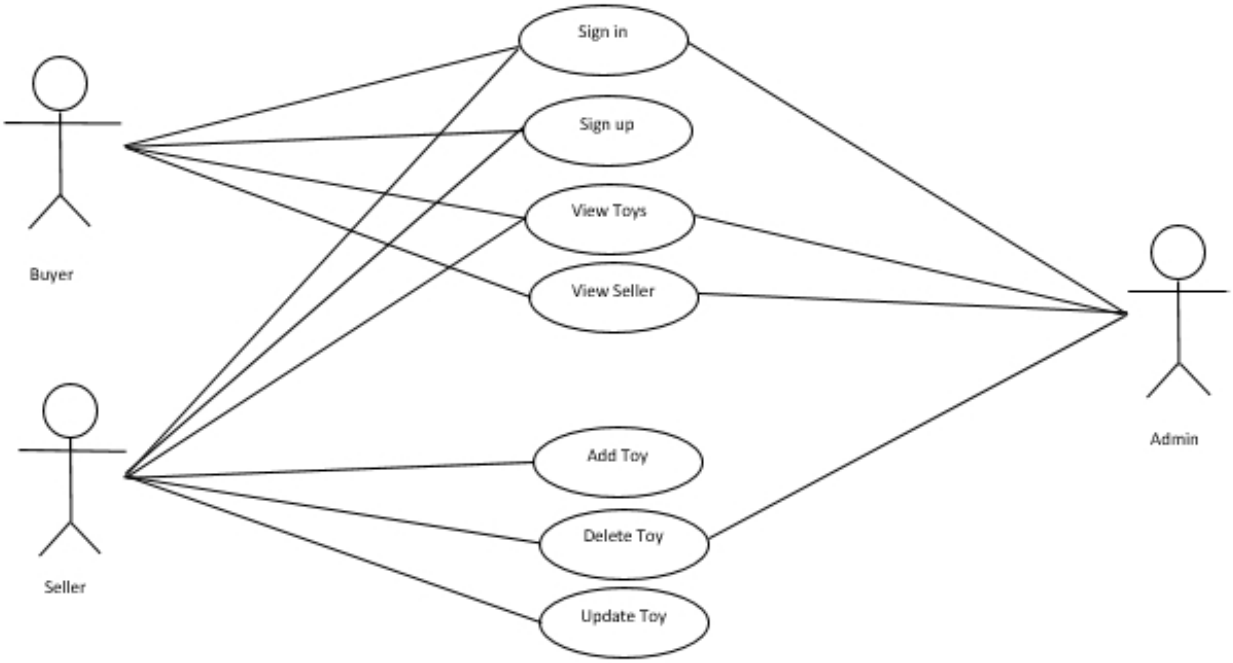

Figure 2: Use Case

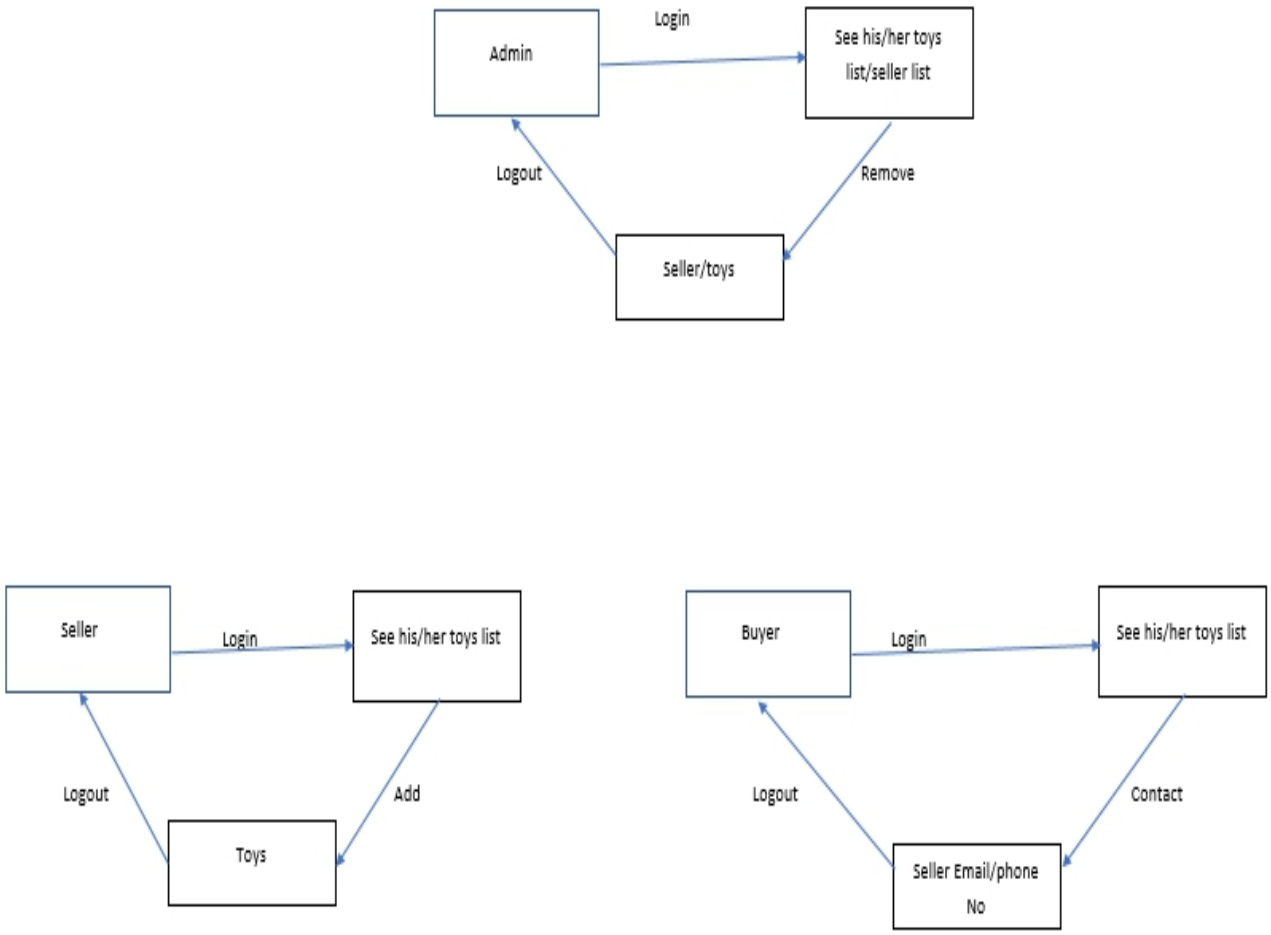

Figure 3: Collaboration Diagram

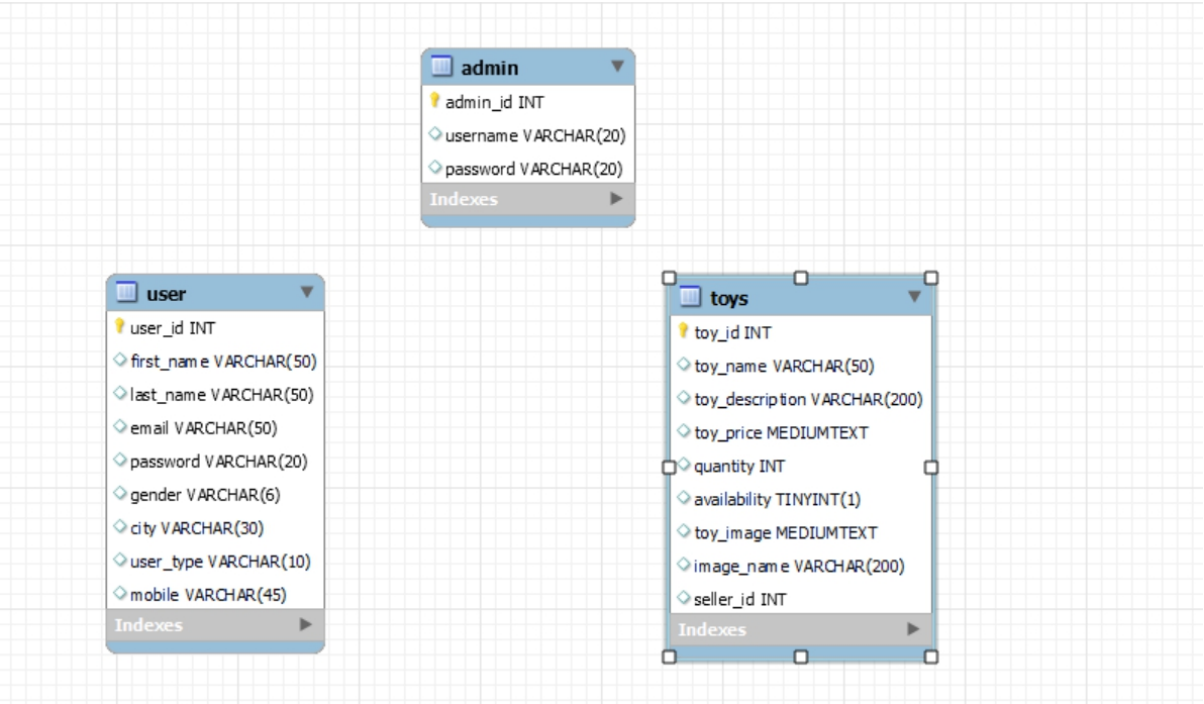

Figure 4: Component Diagram

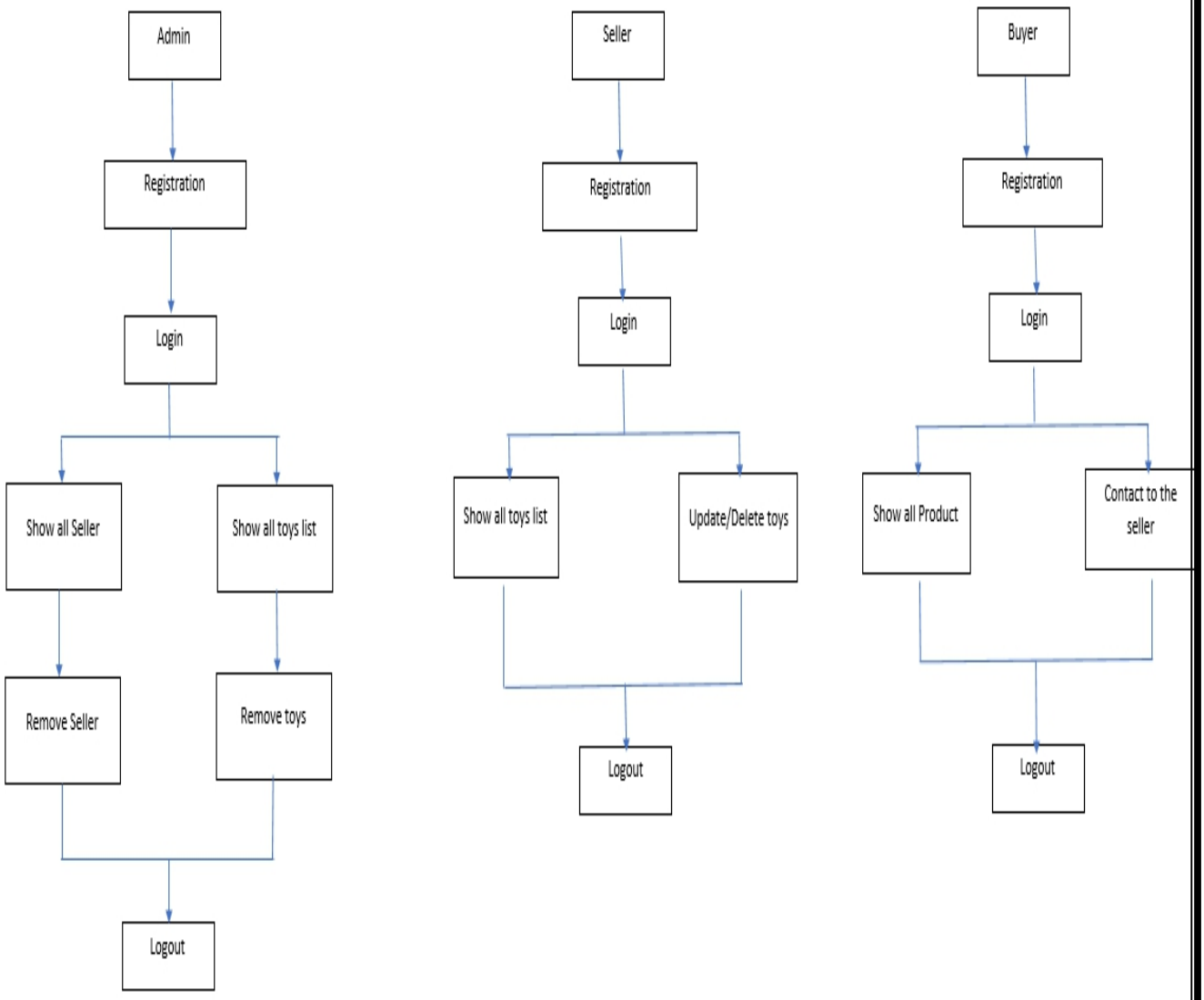

Figure 5: State Diagram

7. End to End Flow of Application:

Seller:

i. Seller will login to the portal or will have to register if he is not a registered.
ii. After registration Seller will login and home page will be displayed where he can see all the toys.
iii. From that seller can go to seller dashboard.
iv. In seller dashboard he can view his profile where seller Id,E-mail Id and mobile number is displayed.
v. In seller dashboard he can also view all the toys which is uploaded by the seller.
vi. Also there is a option to Add new toys where seller can enter new toy name, can add toy description,toy price and finally the image of the toy.
vii. There is also a chat tab where seller and buyer can communicate with each other.

Buyer:

i. Buyer will login to the portal or will have to register if he is not registered
ii. After registration Buyer will login and home page will be displayed where he can see all the toys.
iii. From that seller can go to Buyer dashboard..
iv. In seller dashboard he can view his profile where seller Id,E-mail Id and mobile number is displayed.
v. There is also a chat tab where seller and buyer can communicate with each other

Admin:

i. Admin will login as Admin where Admin will be able to see all the toys which are posted by the seller.
ii. In Admin Dashboard will have different options like View toys,View Seller,View Buyer which are registered on the portal.
iii. Admin has the authority to delete a toy if admin feels that the toy is faulty or defective.
iv. In View Buyer and View Seller section admin will be able to see all the details of Buyer and Seller.

8. Future Scope of Project:

- Seller can add multiple images of toy.
- Seller can add 360 degree view image of the toy.
- Seller can also add short video of the toy.

Thank You!