Experiment – 03

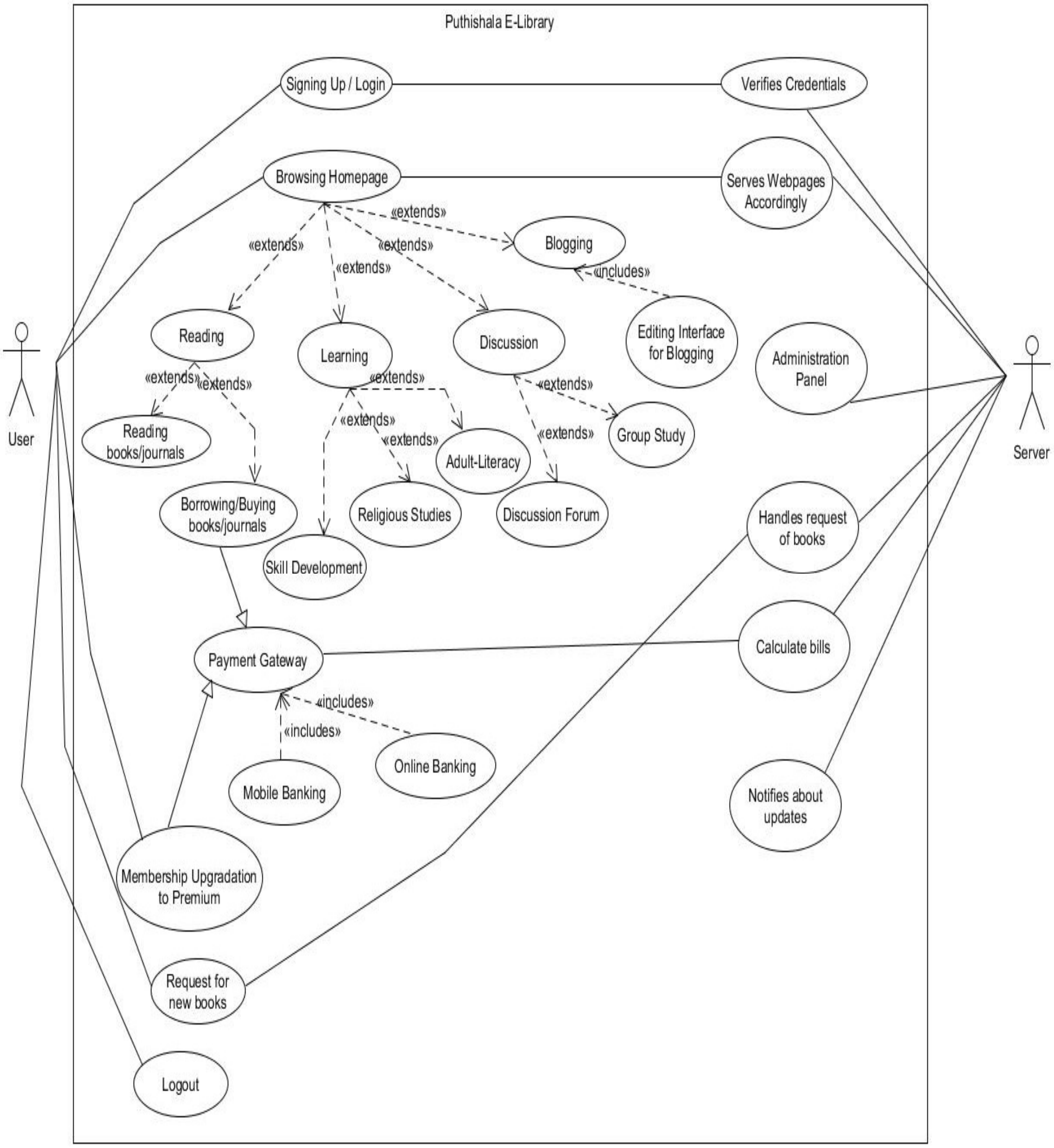
To perform the user's view analysis:

Use-Case Diagram

Case Study for Use-Case (Puthishala):

A user will log in using his/her registered account or sign up by creating a new account. For a new account, user credentials will be verified via server itself. After logging in, user will view the Homepage and choose his/her actions. A user must select one option from Reading, Learning, Discussion and Blogging. In the reading section, the user will be able to read books and journals. The user will also be able to borrow or buy books and journals. In that case, the user will have to pay for buying or borrowing books and journals via mobile banking or online banking. A user can also upgrade his/her membership status to 'Premium' by paying certain fees as well. In the Learning section, user can enrol into Skill Development courses, Religious courses and Adult-Literacy courses. In the Discussion part, a user can initiate or join to a discussion forum and a group study forum. In the blogging section, a user can create his/her own interface for blogging segment. A user can also request for new books directly to the server. The Server on the other hand can Verify User Credentials, Manage Administration Panel, Serve Webpages, Handle Request of New Books, Calculate Bills and Notify Users about Updates. Finally, user can log out or exit the home page after completing his/her actions.

Diagram for Use-Case:

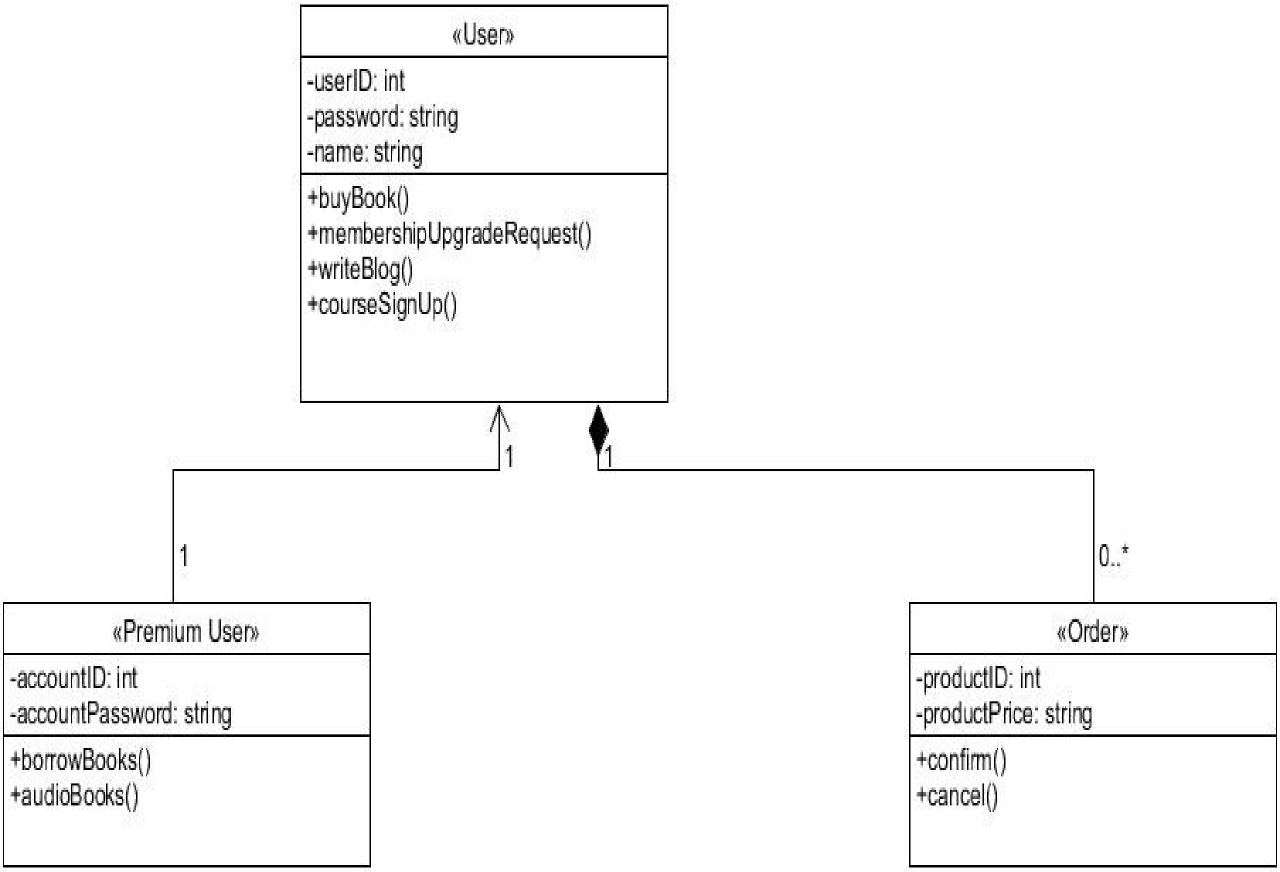


Class Diagram

Case Study for Class Diagram (Puthishala):

Class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations and the relationships between the classes. In this case study we propose a simplified version of class diagram from Puthishala. A user will log in using his/her userId and password. A userId is an integer datatype, password is combined of string and Name attribute for many purposes is a datatype of string. A method for a user to buy books/journals from is called buyBook() operation. Users can upgrade his/her membership by membeshipUpgradeRequest() operation, write a blog by writeBlog() operation and also enrol in courses via courseSignUp() operation. A user can access premium user class facilities by accountID and accountPassword attribute after upgrading their membership status. A premium user can borrow books and access Audio-Books via borrowBooks() operation and audioBooks() operation. A user can order a product by productId and productPrice attribute .Then the user can buy his/her cherished products by confirm() operation or can cancel the order by cancel() operation. User class and premium user are attached by inheritance notation where user class is a super class and two classes share a one-to-one relationship. User class and order class are attached by composition notation and has a one-to-many relationship from user class to order class.

Class Diagram:

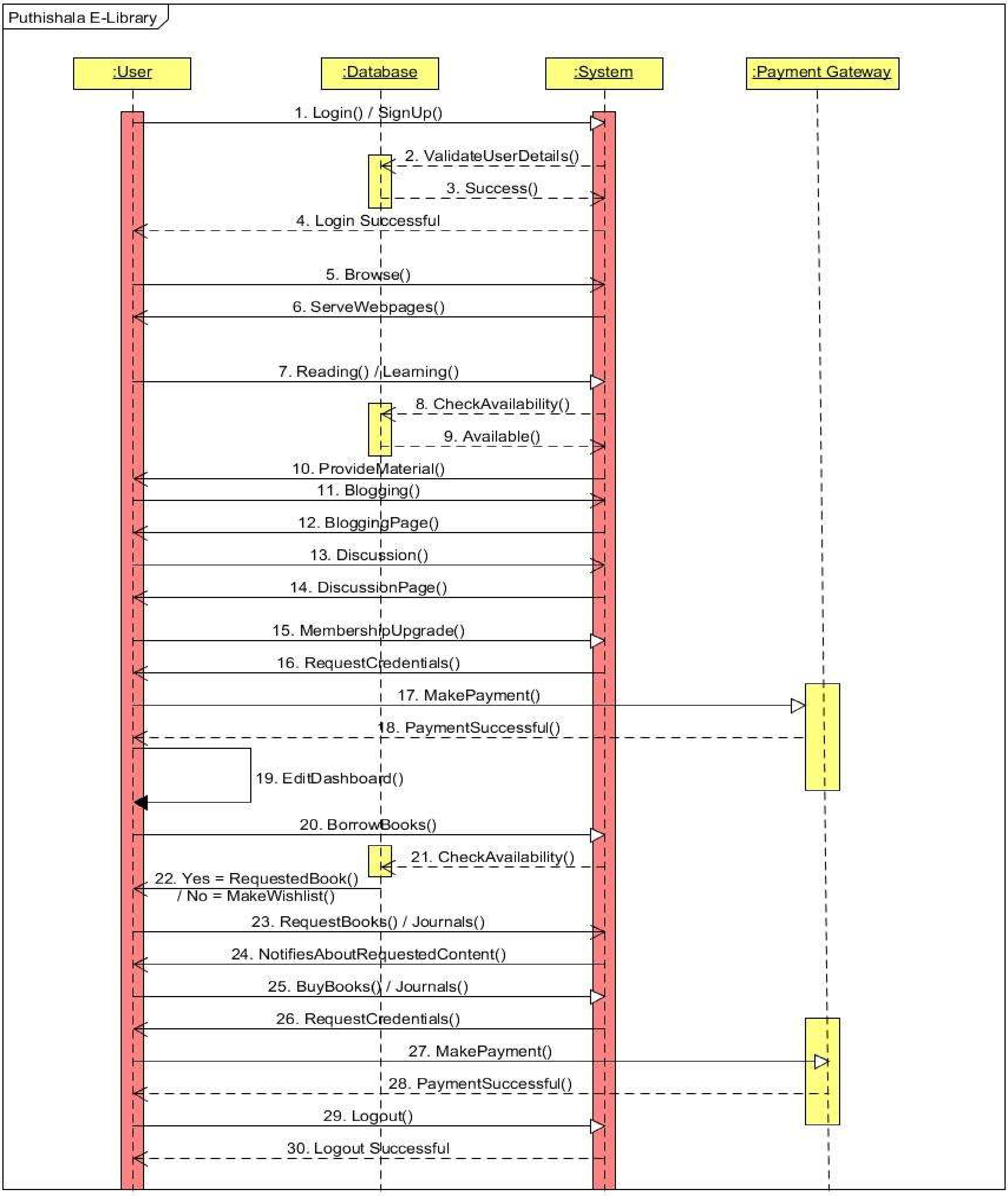


Sequence Diagram

Sequence Diagram Case Study for Puthishala:

The scenario begins when a user can login to the system using his/her registered account or sign-up by creating an account. The system will also check whether the user is a new user or already has an account. Once successfully logged in a user will be able to browse the system homepage. The system will also serve the user with their desired webpage. The user will also be able to read books, enrol courses and learn skills from the system. The system will check the database to see if the books, journals, courses are available or not. If the books, journals, courses are available, the system will pro1vide it to the user. A user can also request to the system for personal blogging and the system responses to their desired request. Similarly, the user can request the system for discussion forum page and the system will provide that page. A general user can request the system for membership upgradation to premium user. A user has to pay a certain amount of money through a payment gateway to upgrade to a premium member. And the system notifies the user about membership upgradation. A member can edit his/her dashboard. A user can make request to borrow books from the system & the system will check whether the book is available or not in the database and notify the user. Users can also buy books/journals from the system by paying the product price through the payment gateway. Finally, user can logout or exit the system after completing his/her actions and system confirms his status.

Sequence Diagram:

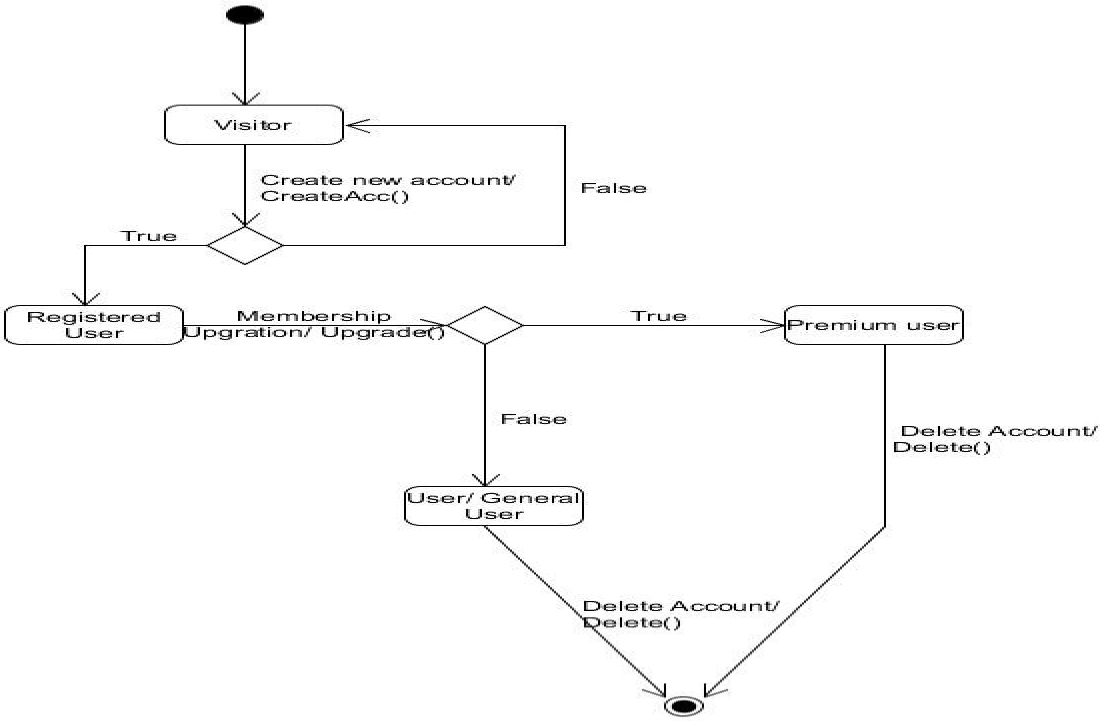


Statechart Diagram

Case Study for Statechart Diagram (Puthishala):

The user enters the home page of the Puthishala as a Visitor via web browser. The Visitor can view inventory but cannot access inventory. After registering or creating an account, the user will become a Registered User. A Registered User will be categorized as a General User or User. A User will be able to read or buy books, enrol into E-Courses, open discussion forums and study groups and blog. A User can also upgrade his/her membership to Premium User status. A Premium User has all benefits of a General User plus he/she will be able to borrow books and request for new books. If a user wishes he or she can permanently delete their account and remove all records.

Statechart Diagram:

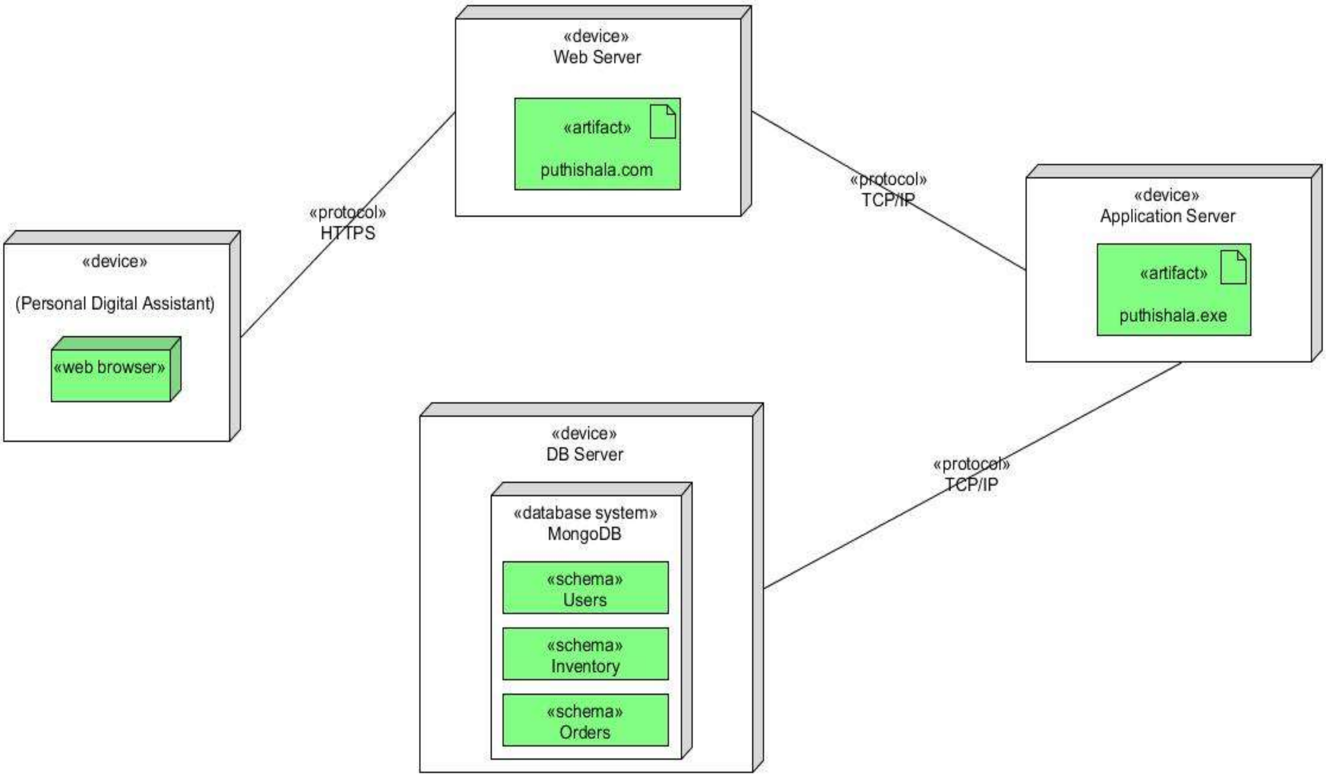


Deployment Diagram

Deployment Diagram Case for Puthishala:

Puthishala is a web-application, the artifact “puthishala.exe” is deployed on an application server. A user having personal digital assistant (pda) can access the web-application through a web browser. The artifact “puthishala.com” is served on a web server which has a protocol of Hyper Text Transfer Protocol Secured (HTTPS). The data of users, inventories and orders are stored in a database system named MongoDB which is served through a database server connected to the application server through Transmission Control Protocol/Internet Protocol (TCP/IP).

Deployment Diagram:


«device»
Web Server
«artifact»
puthishala.com
«protocol»
HTTPS
«protocol»
TCP/IP
«device»
(Personal Digital Assistant)
«web browser»
«device»
Application Server
«artifact»
puthishala.exe
«device»
DB Server
«database system»
MongoDB
«schema»
Users
«schema»
Inventory
«schema»
Orders
«protocol»
TCP/IP