Java & Web Development

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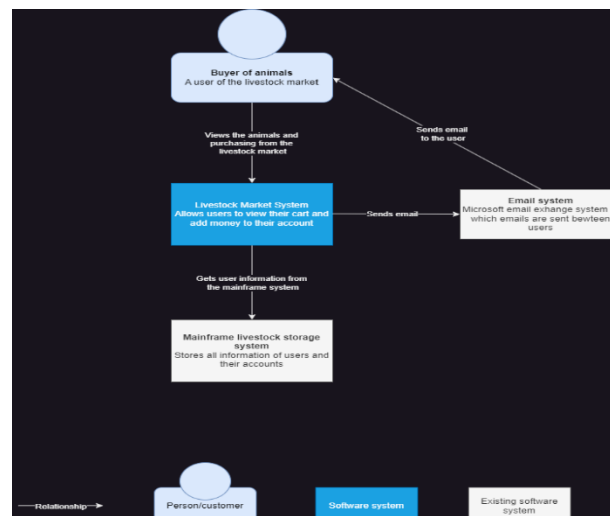
Abbreviations Key:

API – Application Programming Interface

HTTPS – Hypertext Transfer Protocol Secure

CSS – Cascading Style Sheets

Conception Phase:

My web application will be a livestock market system. Users will be directed to a livestock market. The livestock market consists of different animals that a user can purchase without having to go to a live auction. The user will scroll through the variety of animals, if the user wants to add an animal to their cart, they will need to create an account, login or continue as a guest. Once the user has selected the animal(s) then they will be asked to checkout and pay for their animal. Once the purchase has been made and the transaction goes through then the data will be stored and sent to the business. The business will then reserve the animal purchased for the user and notify them when the animal will be ready for delivery/collection. The target user group is different religious groups (Islamic, Hindu etc.), different cultural groups (Zulu, Portuguese, Sesotho etc.), people hosting functions/venues (weddings, funerals, parties etc.), smaller livestock vendors. This application is for users to choose an animal in which they will prepare for their traditional meals at home or at family functions. The benefit of this application is that users from different religious groups and cultures will be ensured that their animal that they are receiving will be prepared according to their beliefs. The market has an onsite slaughter and cutting facility, which is available for clients to use. The requirements of the user will be an account to load money onto, security features to make sure the user's information is safe and protected, secure payment processing, ability to add multiple animals to their cart, storage place on the back end to store the users details and their cart data etc. The components of the web application consist of the front end, back end, and database. The front end must have the following components: JavaScript for data manipulation, HTML to create structure and CSS for styles. For security HTTPS and APIs must be implemented and test cases must be carried out. Payment gateway integration must be implemented. Back end must contain a database which uses SQL to sort and change data. The front end will send data to the backend where the backend will send an output or store the data in a database. I will be using Visual Studio Code – (JavaScript – Node.js, Express.js) and MySQL.

Software Architect Diagram:

Database: MySQL
Back end: Node.js
and Express.js

Buyer of animals
A user of the livestock market

Visits "slokvel.com" using HTTPS

views account and cart using

views account and cart using

Sends email to

Web Application
Delivers single page application

Delivers to users web browser

Single page application
Provides all requirement and functionality through their web browser

Mobile application
Provides a limited set of the functionality through the users mobile device

Makes API calls to

Makes API calls to

API application
Provides security and payment processing gateway via HTTPS

Reads from and writes to

Database
Stores user details and authentification credentials

Sends email using

Makes API calls to

Email system
Microsoft email exhange system in which emails are sent bewtleen users

Mainframe livestock storage system
Stores all information of users and their accounts

Relationship

Person/customer

Container

Container, web browser

Container, mobile app

Container, database

Existing software system

Single page application
Provides all requirement and functionality through their web browser

Mobile application
Provides a limited set of the functionality through the users mobile device

Makes API calls to

Makes API calls to

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Makes API calls to

Makes API calls to

Makes API calls to

Makes API calls to

Sign in controller
Allows user to sign in

Uses

Reset password controller
Allows user to reset their password

Uses

Livestock summary controller
Provides the user with their account summary and cart

Uses

Security component
Provides functionality for password reset, signing in etc.

Email component
Sends emails to users

Mainframe livestock storage system facade
Facade onto the livestock mainframe

Uses

Reads from and writes to

Sends email

Makes API calls

Database
Stores user details and authentification credentials

Email system
Microsoft email exhange system in which emails are sent bewtleen users

Mainframe livestock storage system
Stores all information of users and their accounts

Relationship

Component

Container, mobile app

Container, web browser

Existing software system

Container, database

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