Enterprise Application Project Documentation

Course: Enterprise Application Development

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Entity Profile

S. Facey Fotos is a digital photography company which offers digital photographic services to the public. The mission statement describes the company's commitment to providing the highest quality of services while taking into keen consideration, the client's needs and budgetary constraints.

Established in 2019, For the past three (3) years, the services offered by S. Facey Fotos have seen great improvements and with that came a notable growth in the clientele.

Background

As a growing entity in a digitally evolving commercial environment, S. Facey Fotos recognizes the need to add digital presence to their business operations. This will improve processing time, security, and customer service.

The current administrative process is limited to paper records and hand to hand transactions. This results in slow, inefficient services and documentation of sales transactions. In recognition of these inadequacies, a software management system was proposed. A desktop application software which will allow for the management of shoot records, booking of events, registration of clients and efficient bookkeeping. A web application system was also proposed from which client will be able to register a user account, purchase photography services and receive finished deliverables.

Assumed Problem

With the changes brought on by the pandemic, S. Facey Fotos has seen a decline in revenue and accessibility to provide services to their customers. Currently the main means of interaction has been paper based. The records for customers, the available means of booking and making payment is also lacking and has become a major weak point during this period. The need for a more robust and flexible avenue to receive customers and provide high quality services has become the company's focus.

Project Goals and Objectives

The Desktop Application and Web Application proposes a solution to the issue of security, ease of connectivity between staff and clients and efficient acquisition and delivery of services.

The combination of the Web and Desktop applications will allow & facilitate the continued communication and interaction with Customers, while also allowing staff the opportunity to work remotely via the Web application. These programs will greatly improve awareness and marketability of the company and its products/services. Below outlines key functionalities of these software's:

- Secure means for Client account Creation and Access
- Quick payment options and receipt information
- Delivery details and Tracking Information
- Online Access to Account details and sales history
- Online Access to Product and Service details
- Admin Panel and Data Manipulation
- Customer Login

Problem Analysis and Informative Research

Detailed interviews with the Manager and founder of S. Facey Fotos will be conducted. These interviews will determine the full scope of the companies' issues and constraints and allow the team to fully grasp the situation. Surveys and Questionnaires will be used to gather information from current clients and staff along with potential customers to determine the best solution for the issues at hand.

Problem Definition/Statement

The Inability to record large volumes of customer information in short periods of time. S. Facey Fotos is only able to facilitate face to face transactions that are cash base. All documentation is currently paper base and is susceptible to flooding and or damages from natural disasters. Low security matrix in keeping customer information as all documents are kept onsite and no plausible means of backup.

Proposed Solution and Expected Benefits

The ability to gather customer information in large volumes without the hassle of written or paper base records. To facilitate online and real time transactions and payment to increase the company GDP, while providing reliable and fast-tracking information for delivery or Parcel.

The Desktop Application (employing the .NET framework) will provide the following features:

- User-friendly Graphical User Interface for managing user information stored in a secure database.
- Secure Login and the ability to create multiple user accounts.
- Database Management from inside the application without having to open the native database window. This provides some level of data abstraction.
- Provides accurate bookkeeping records.

The Web Application will provide the following features:

- Secure payment portals, quality related content resources, and a robust, user-friendly interface.
- Logical, simple outline which provides a dynamic user experience for clients.
- Fast refresh rate through use of cache memory and cookie technologies
- Search Engine Optimization (SOE) using keyword matching, metadata and social media user data referencing.
- Cross-platform compatibility. That is, the web application will render on any device regardless of screen size or the user's browser choice.

Application Requirements

Functional	Non-functional
• The Application system confirm user action for account creation and all purchase. • The systems payment gateway will allow the client to make purchases. • Confirmation will be given to the client via email and direct message. • The theme of the web app will be customizable to light or dark theme as provided by the browser's capabilities • The software will be fully integrated with a secure banking system API. • The system will be made accessible to people with disabilities as dictated by the IT Accessibility Laws, Section 508. • The system will provide user validation against S. Facey Fotos user management database	• Portability. The software will be platform and Operating System Independent. • All sensitive data will be audited before exportation. • The web application will be capable of handling at least five million users without any performance or stability issues arising. • The system will be compatible with the minimum system requirements of any computer system.

System Requirements

The following system requirements will be met for the design and implementation of the proposed solution.

- The database will be designed using Microsoft Structured Query Language (MSQL)
- The database will cloud-based
- The database will support redundancy and will operate continuously with High Availability support
- The database will feature high end security and guarantee data integrity

User Interface

The user interface will boast the following features.

- A user-friendly interface which is easily navigable
- Clearly labeled links, buttons, and meaningful images
- The web-app will be compatible with all monitor sizes
- Provides search option linked to global search engines
- Feature a massage box

Hardware Requirements

- The web-app will be compatible with any web enabled device

Software Requirements

- The web-app will be compatible with any web browser.
- A mobile app will be available for download for IOs and Android OS.

Physical Environment Requirements

- The webserver and the database will be cloud-based

Response Time

- The system's response time will be less than 4 seconds.

Performance

- Resource Utilization will be minimal and accessibly only limited by bandwidth of the user.

Quality

- Quality of the web-app will comply with international standard as well as modern design and functionality.

Security

- The web-app will be secured using Secures Socket Layer (SSL) certificate which provides security for online communication and combat Distributed Denial of Service (DDoS) attacks.

Standards

- The web-app will comply with the standards of the Worldwide Web Consortium (W3C) and the Web Accessibility Initiative (WAI) standards.

Developer Requirements

- The web-app will be designed using the .NET 6 Model View Controller (MVC) technology which fully supports Java Script, C#, HTML5 among other prominent modern technology.

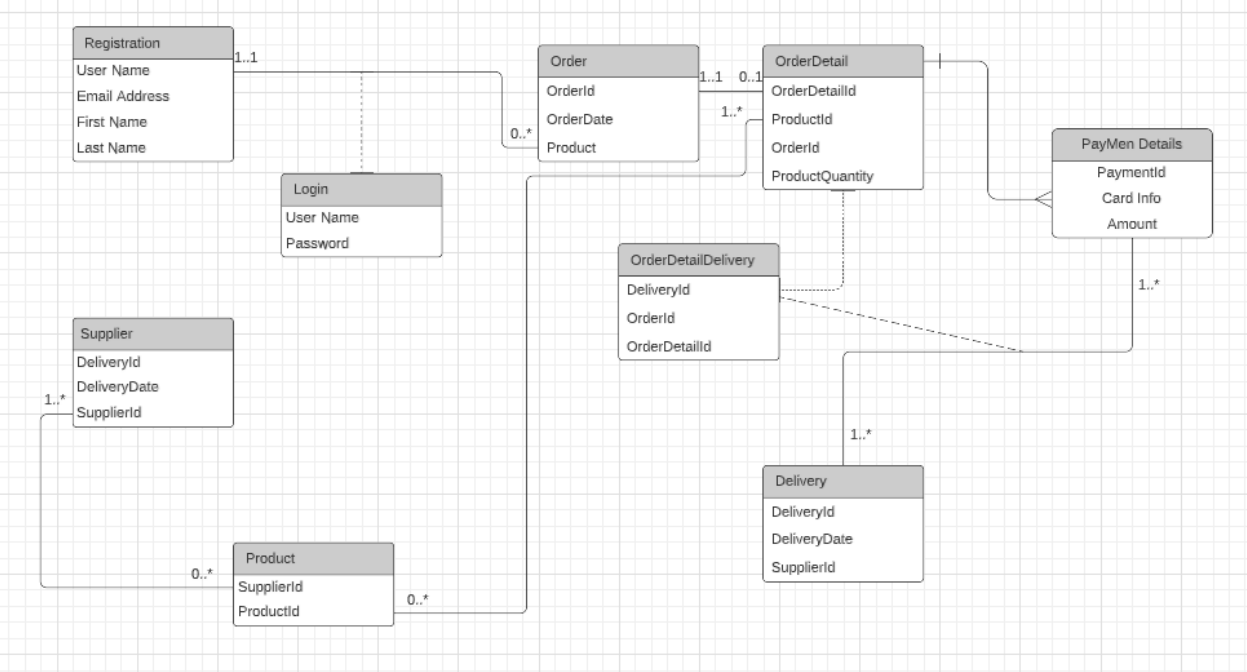
Software Design Specification

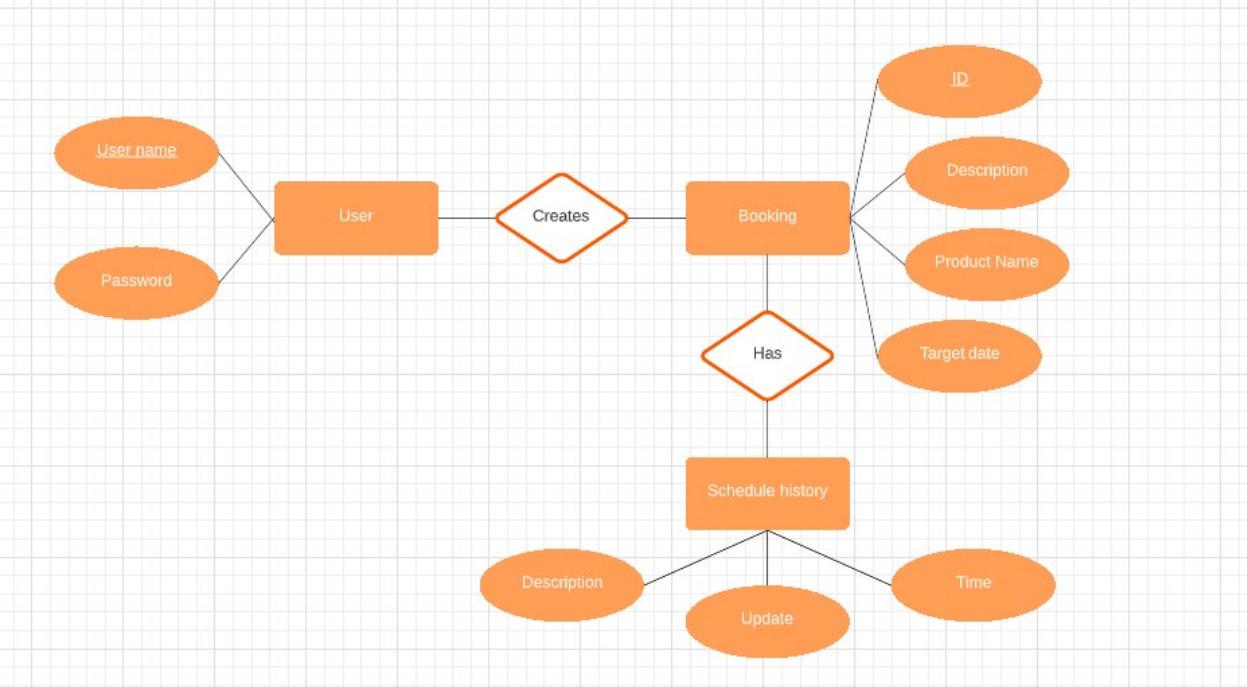
- **User Interface** – This should be friendly and easily maneuverable for the end user in accessibility and functionality
- **Web Application –** Compatibility with both mobile and desktop Browsers.
- **Design Aspect –** This should be simple but efficient, Secure but not complex for user usage
- **Performance –** Quick loading speed with minimum resource usage
- **SEO –** Should be easily located online with adequate keyword and phrases coded in
- **Search Function –** Should Facilitate ability to search and find key words or products on site or desktop application
- **Booking Calendar –** Customers should be able to book via calendar and see unavailable dates/times

The Desktop Application

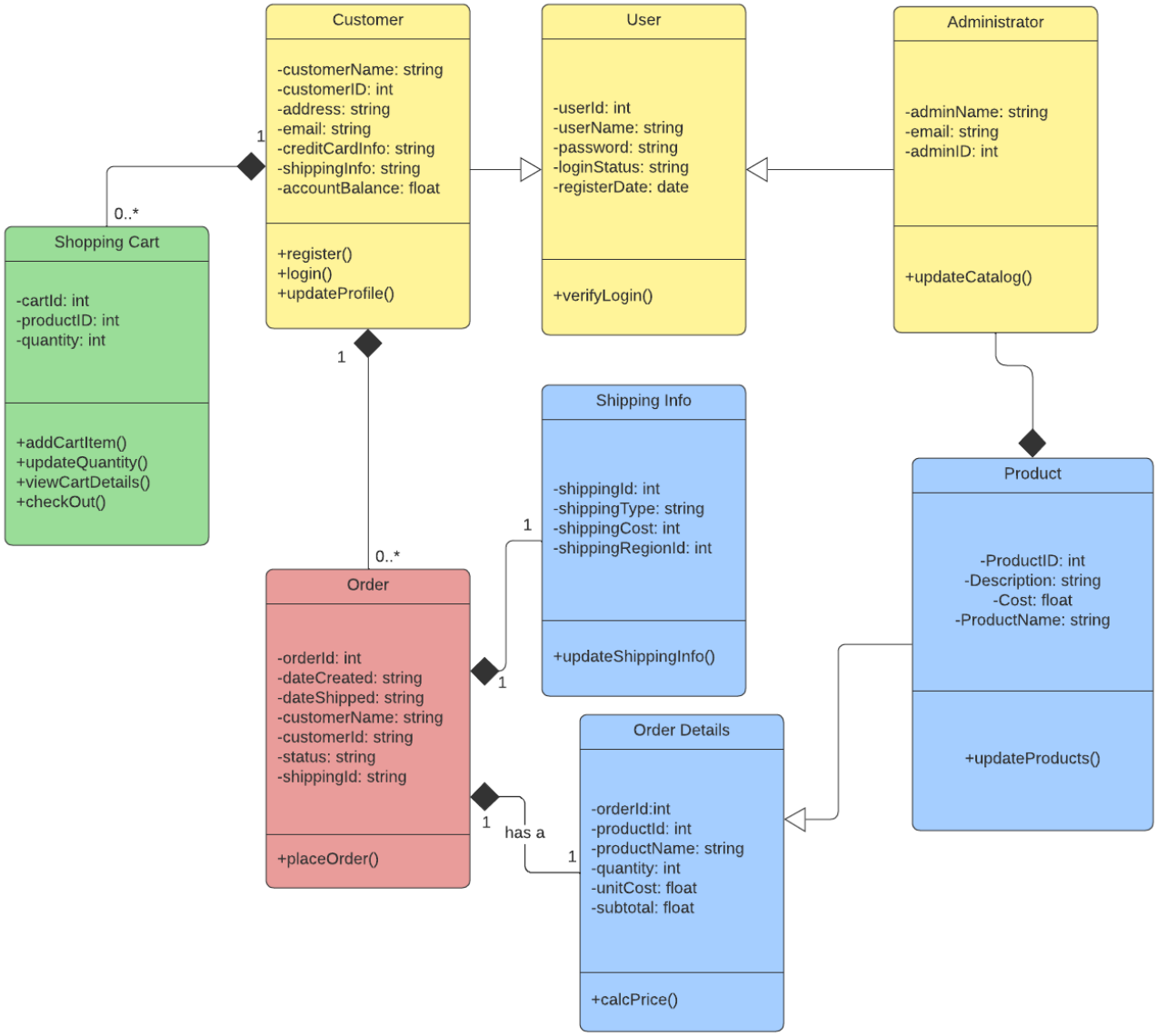
- Will allow support Creation, Retrieval, Update and Delete (CRUD) functionality
- Will have a user-friendly interface which is easily navigable and learnable for first time users.
- Administrators will be able to perform administrative tasks in maintaining records and authoring user accounts
- The interface will offer text tips on mouse hover on user controls such as links, buttons, and text fields
- The various functions should be easily accessible via buttons or a menu strip

ENTITY RELATIONSHIP DIAGRAM (ERD)

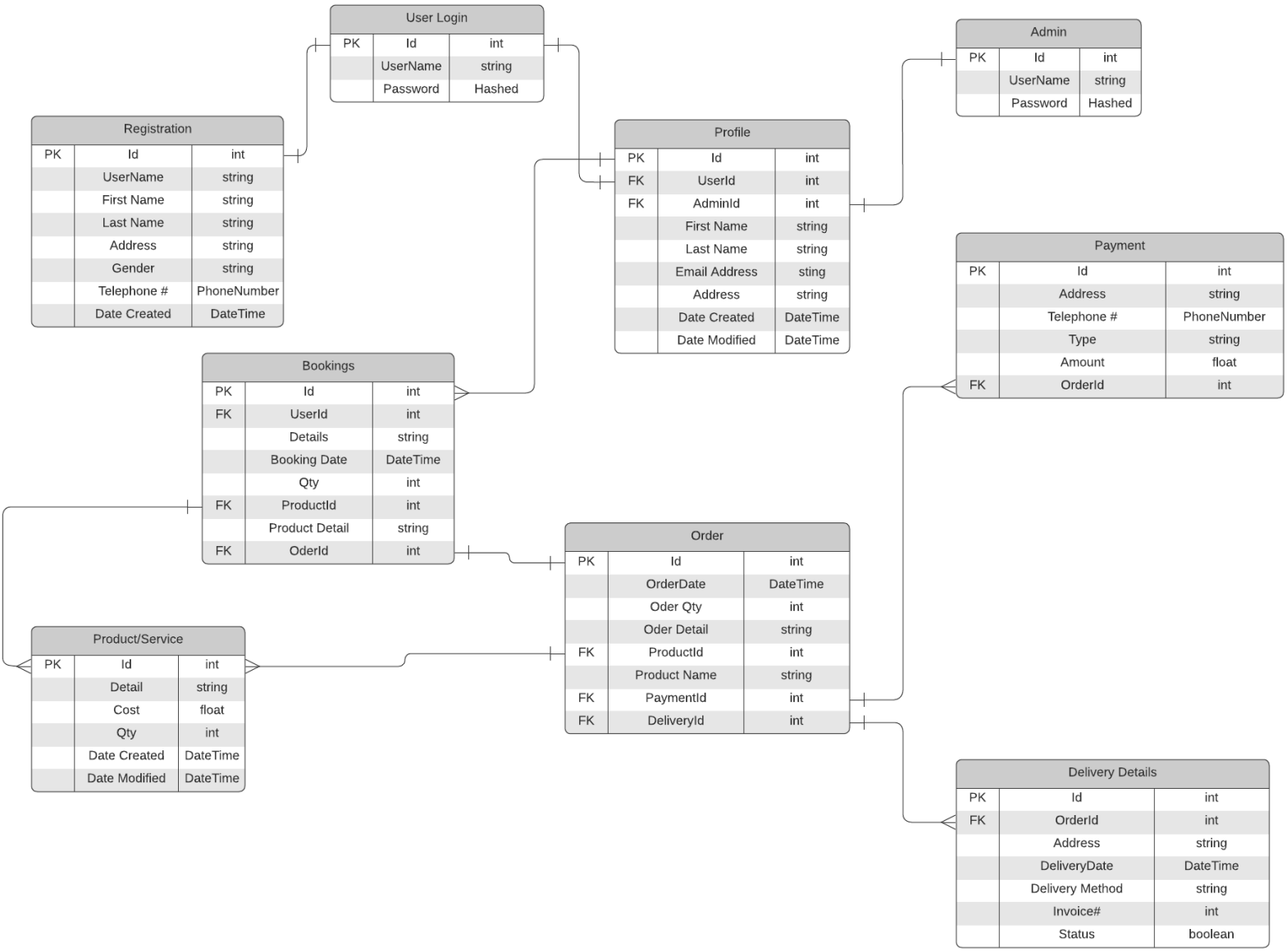




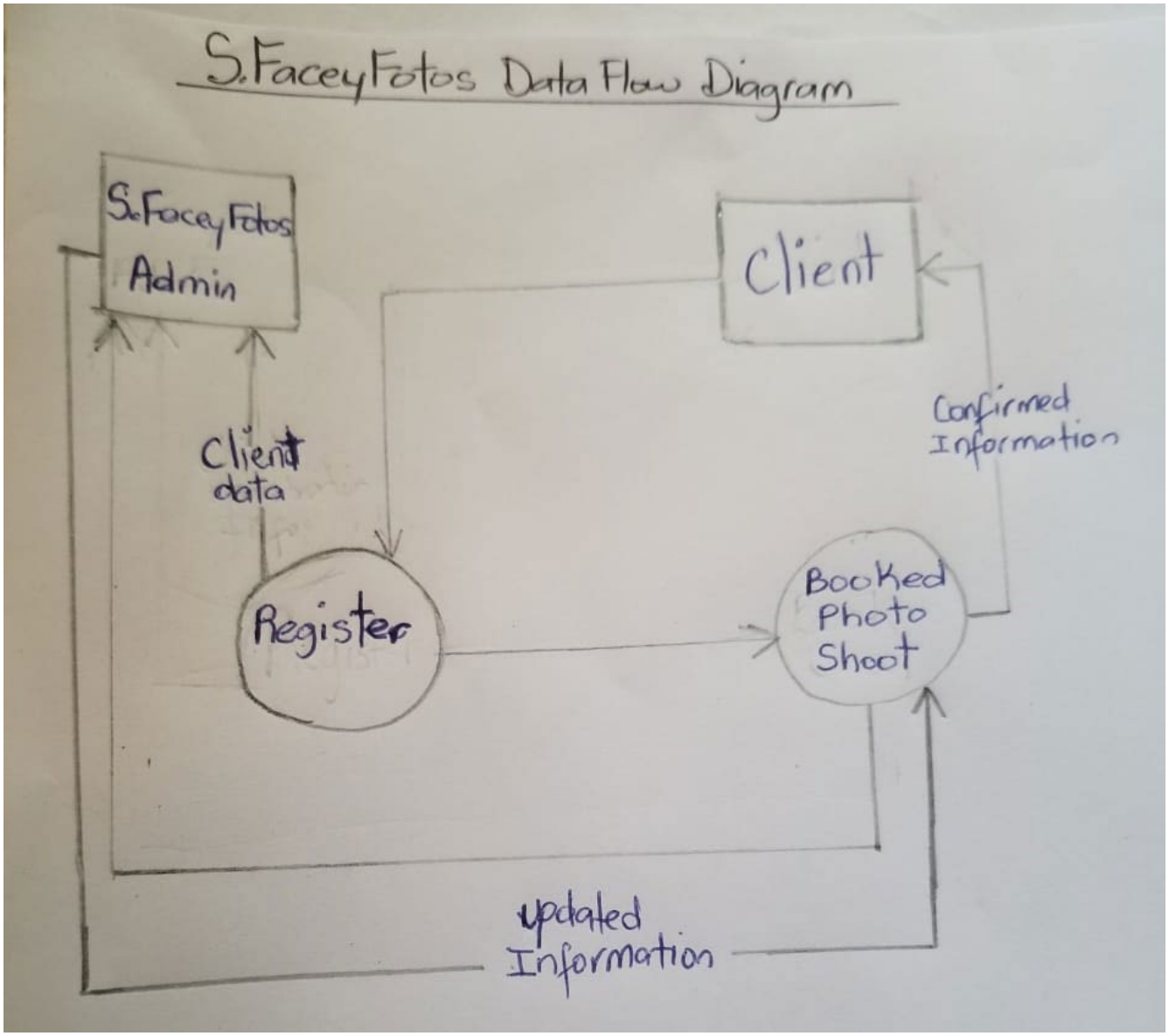
SEMANTIC OBJECT MODEL DIAGRAMS



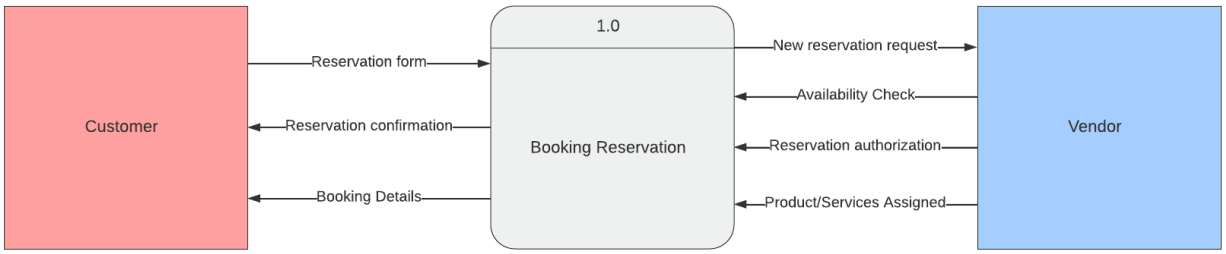
RELATIONAL TABLES



Data Flow Diagram



CONTEXT LEVEL DIAGRAM

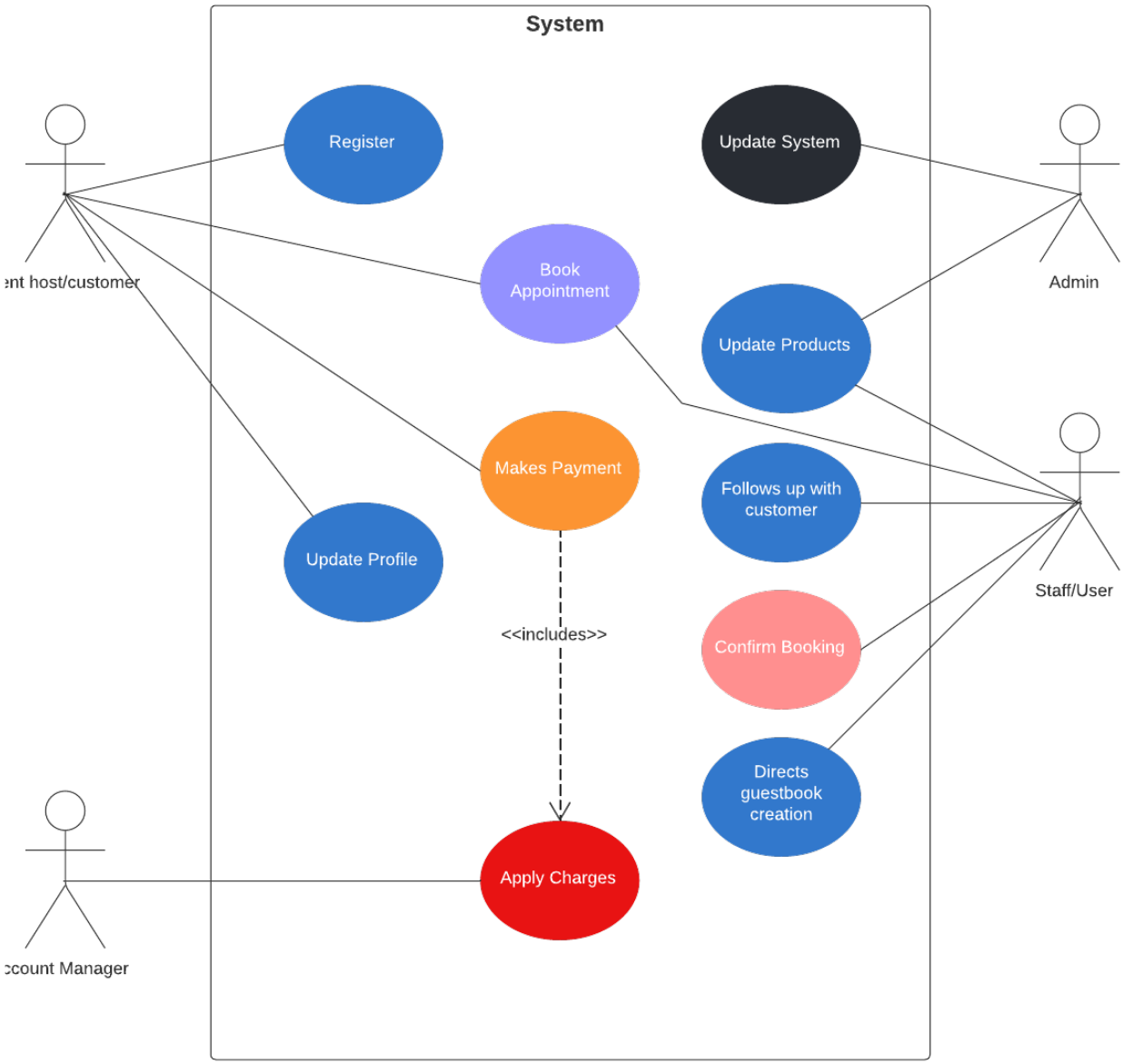
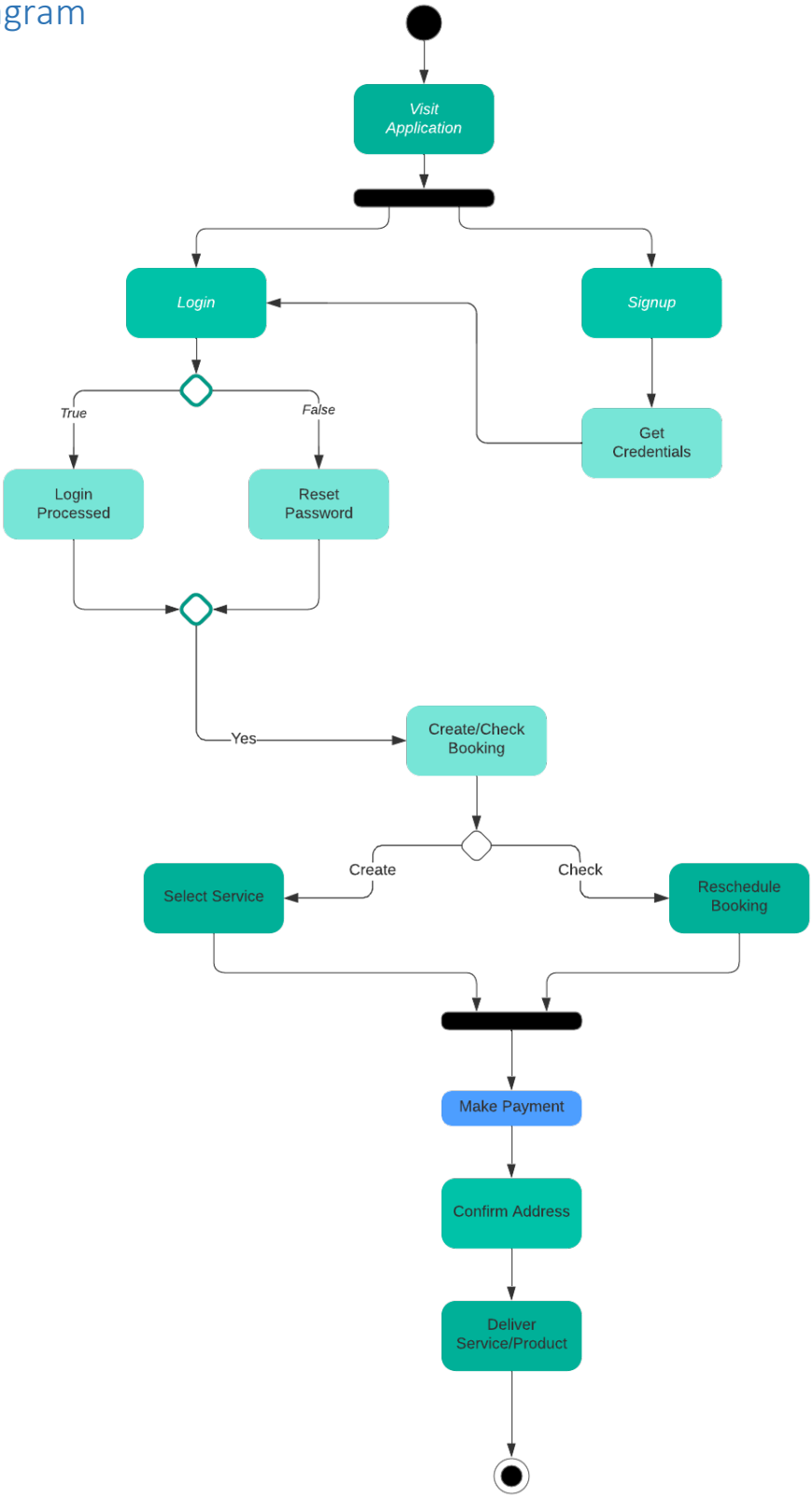


DATA DICTIONARY

Table	Column	Data Type	References	Required	Key	Description
bookingInfo	ID	int		Y	PK	Unique number
	First_Name	nvarchar(50)		Y		Client's first name
	Last_Name	nvarchar(50)		Y		Client's last name
	Email_Address	nvarchar(50)		Y		Client's email address
	Telephone	nvarchar(50)		Y		Client's tel#
	Card_Number	nvarchar(50)		Y		Client's card number
	Card_TypeID	int	cardType	Y		Type card
	CSV_Number	int		Y		Card security number
	Expiration_Date	Date		Y		Card expiration date
	Package_TypeID	int	packageType	Y	FK	Package type ID
	Shoot_Date	Date		Y		Selected date for shoot
	Shoot_TimeID	int	shootTime	Y	FK	Shoot time ID
	Shoot_Location	nvarchar(50)		Y		Where shoot will be
	Unit_CostID	int	packageType	Y	FK	Package cost ID
	Deposit	Decimal		Y		Amount paid down
	Total	Decimal		Y		Package cost
cardType	ID	int		Y		Primary Key
	Card_Name	nvarchar(50)		Y		Debit/Credit
userRegistration	ID	int		Y	PK	Primary key
	First_Name	nvarchar(50)		Y		Client's first name

	Last_Name	nvarchar(50)		Y		Client's surname
	Email_Address	nvarchar(50)		Y		Client email
	Telephone	nvarchar(50)		Y		User tel#
	Username	nvarchar(50)		Y		User name
	Pass	nvarchar(50)		Y		User password
	Card_Number	nvarchar(50)		Y		Card number
	Card_TypeID	int	cardType	Y		Credit/debit
	CSV_Number	int		Y		??????
	Expiration_Date	date		Y		When card expire
packageType	ID	int		Y	PK	Primary key
	Package_Name	nvarchar(50)		Y		Package selected
	Unit_Cost	decimal		Y		Cost of package
shootTime	ID	int		Y	PK	Primary key
	Shoot_Time	nvarchar(50)		Y		Shoot time set

Use Case Diagram



Activity Diagram