Faculty of Computing, Online Examinations 2021

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MODULE LECTURER	Mrs. Chalani Oruthotaarachchi	DATE SUBMITTED	10 – Sep – 2021

For office purpose only:

GRADE/MARK	
COMMENTS	

Declaration

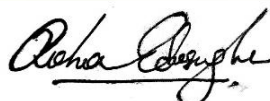**PLEASE TICK TO INDICATE THAT YOU HAVE SATISFIED THESE REQUIREMENTS**

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☐ I understand what plagiarism is and I am aware of the University's policy in this regard.

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☐ I have not used work previously produced by another student(s) or any other person to hand in as my own.

☐ I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as his or her own work.

☐ I hereby certify that the individual detail information given (name, index number and module details) in the cover page are thoroughly checked and are true and accurate.

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Question 1

1. Samson's brother Mike his friend started developing this website. They made it by breaking the steps according to the SDLC model. First, they started planning the project by identifying all the activities of the website. Then they had time to analyze the needs with Samson and understand all the system requirements, user needs and business needs.

   After all the requirements and scope are well defined the website is divided into three categories of post order orders, payment status and order tracking.

   Here placing orders and making payments was considered as one iteration and creating order status tracker was considered as another iteration.
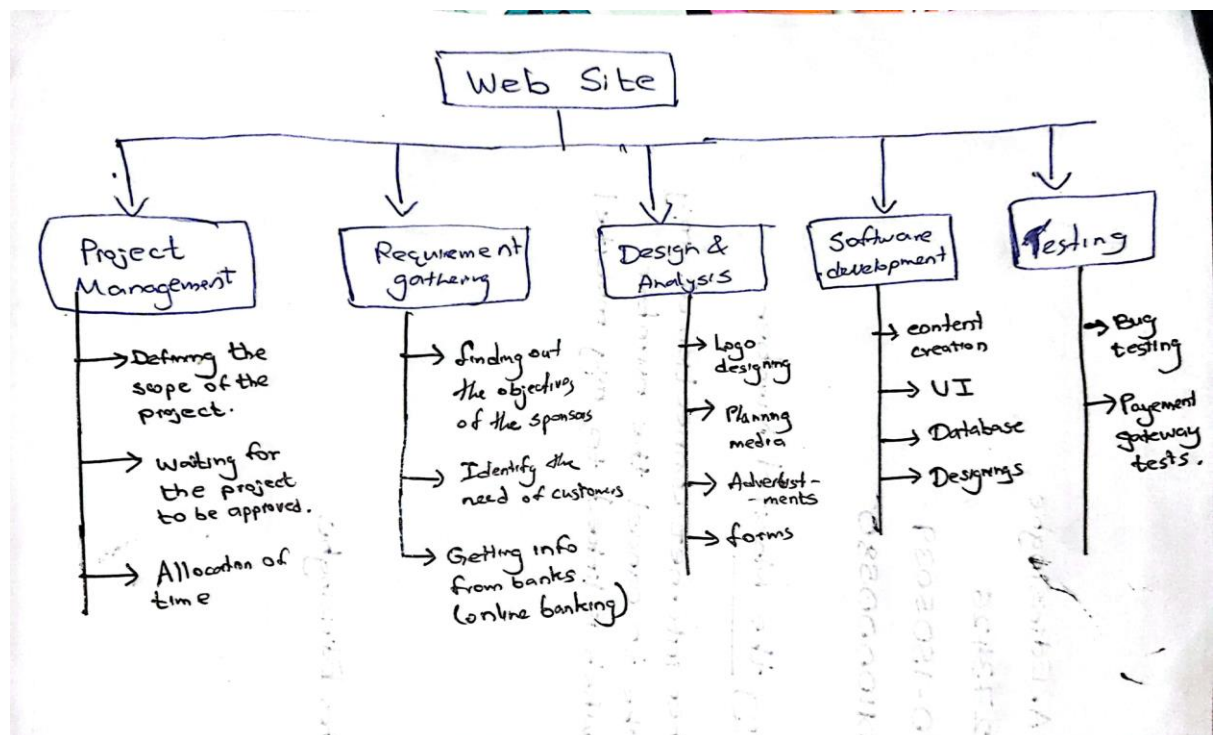
   After all the necessary planning and testing, the design and implementation are the most important stages. When we think about ordering and paying for iteration mike and his friend for the first time, they find that having a database is a key point to repeat this. Here all customer details and posts should be kept on those websites. When a customer visits this website, they first have a home page which has a text box to enter the tracking number of an already placed order to track its live location. When a customer searches for his/her order on the home page redirects to another link where all customer details, receiver's details and live location is displayed. And when the customer decides to create an account in this page, he can select create an account button. Here, the form is designed to use any language to improve the web and connect the database to it. Here the database has a table with the customer's name where all the customer details are recorded when the form is successfully submitted. And then if you want to place a delivery order, you can go to "Deliver your goods" tab and enter the given details and then click "proceed to payment". After submitting the customer information form this web page is redirected to another page where there is a payment gateway. Here, it is also linked to a database where payment information is recorded.

   Payment options have payment options for their children such as cash on delivery and credit card payments. After the order is approved by the seller the money will be placed on the customer table in the database. This is considered to be the design of the first iteration. After selecting the appropriate programming language, you will have to do all the design work by linking them to all the details.

   Negotiating the next iteration is about following the order status. After the order has been placed by the customer by the address the estimated address will be entered into the database and will be

displayed when the order is placed. After the order is placed the customer will receive a message on the mobile number containing a link to track the order status. Here AI will be used to measure delivery time. after the order is completed in stock or delivered by post, we would send an automatic message to the customer stating the exact time and date of delivery and if it is the delivery cost the amount to be considered. Here is the use of the AI system to generate messages based on customer delivery details and estimated time. After all this design is done, the program is developed using programming language and is implemented.

2.

Question 2

1.

- **Delivery Person –** Order Management System, Customer Details,
- **Warehouse manager –** Warehouse Management System, Order Management System
- **Samson(owner) –** Order Management system, Customer Details Management System, Profit Management, system, Employee Management System
- **Customers –** Order Management System, Information Management System, Billing System

- **Samson (Owner)**

   Samson is the owner of the Express Deliver Courier Service. He had the observation for the need of delivering local packages on the same day as it is given to the delivery service. As a result, he created the Express Delivery Courier Service.

2.
- What is the worst thing that could happen if you failed in providing your service to the customers ?
- How will you personally be happy or talk about success of this service ?
- Who are your biggest competitors ? Should they worry you ?
- How did you come to this level in your business ? how did you succeed ?
- If you lose orders for delivery, what should be the probable reasons for that loss ?

Question 3

1. Functional requirements define a basic code of conduct. In fact, it is what the system does or should not do, and it can be considered how the system reacts to inputs. Functional requirements often define whether / where it behaves and include accounting, data entry, and business processes.

   We can mainly identify local delivery services like KAPRUKA.lk, darazmail, GRASSHOPPER.lk, DOMEX.lk . According to my personal experience I mostly prefer to use DARAZMAIL. It's because they have fast & safe delivery and they values customer. In grasshopper delivery service, they do not even respond to calls on time and not even for the mails. And also their poor delivery service that takes a lot of time for delivering products.

   In addition, this isolation layer also protects the integrity of the site by preventing users from taking action other than the system designed to handle them. Because of this design pattern, it is important to calculate exactly which functions the user will present, and these functions are described below, summarized in part.

   First thing we must consider is the user interface. We cannot target all the users/customers to be very well rich in IT education. So we have to consider a user friendly, understandable and simple UI.

The user/customer should be provided with a functionality as below.

- Create an account
- Manage the account
- Login to account
- Navigate the main menu
- Select what type of products needs to be delivered
- Specifically describe the product and how it should be delivered
- Add special remarks
- Enter pickup location
- Enter Delivery Location
- Provide payment details
- Place the delivery
- Receive confirmation in the form of an order/delivery number.

Homepage

The homepage contains the main menu on the top and about delivery service in the right side. In the main menu in the top navigation bar, there are options as Home, about us, Our services, Create an account, Login To your account and Deliver your goods. And in the lest side it has a text box to enter the order/delivery number provided. By entering the order/delivery number you are again redirected to a page with the tracking information.

Tracking Information Page

In the tracking information page, all the details about the delivery are displayed. The date of delivery, the date that the product is expected to be received, type of product, special remarks, order owner info and his contact details. And also, in the right side there is a special map to show the live tracking of the package and it shows the exact location where the product is.

Create Account Page

In the create account page, the user/customer can create an account entering all his/her details such as, first name, last name, email address, personal address, telephone number and ID number. Then there's a button named "create account". After that when it is clicked the personal account is created and user can login to it.

Place an item to be delivered Page

Here, there are fields to enter the item sender's information. He can manually enter his information. And if not, if he is already registered to the account, there's an option to auto refill information. Then he

can enter all the delivery information as what type of products to be delivered, describe the product, special remarks, pickup location, delivery location and payment details. Then there's a button to proceed payment and when the payments are completed, the user can successfully proceed the item to deliver.

About Us Page

In the about us page, it contains information about the owner of the company and few photos of the company. And under that, there's a customer feedback form. When the customer feedback is written and submitted from the submitted button, that feedback is directly delivered to the company email as an email.

2. Non-Functional requirements define system attributes such as security, reliability, performance, maintenance, efficiency, and usability. They serve as obstacles or barriers to program construction in all different backlogs and ensures the implementation and operation of the entire system.

Because the design patterns of the Online Order System are at a very high level of web application, the non-functional requirements of the system are very straightforward. Although written using Google Web Toolkit, the program is integrated into HTML and JavaScript, as well as a PHP backend, all supported by any well-maintained web server, though I recommend Apache2, especially the free XAMPP distribution.

All application data is stored in the PostgreSQL database, so the PostgreSQL server must also be hosted on the Host computer. As with Apache2, this software is freely available and can be installed and operated under most operating systems. Server Hardware can be any computer that can use both web servers and data and handle the expected traffic. In a delivery system where you don't expect to see a lot of web traffic, or possibly do only limited testing, the average person's computer may fit. Once the site starts to produce more hits, however, it will need to be upgraded to a dedicated host to ensure proper operation. Direct cutoffs will need to be determined by a complete system compression test.

In fact, the system may be fully operational without the use of a database and proper use of Shell, assuming that all users have SQL knowledge and are happy to use it to order and ship products. While this will be extreme, it points to the fact that one part of the system will remain static in a database. On the other hand, be aware that you have somehow moved the menu management and ordered retrieval systems on the web, or even mobile, apps as well, as some users would like to use them as well.

3.   A study of various factors, such as the expected budget and speed required, is used to make decisions regarding hardware requirements. However, because computer technology has become obsolete faster than other organizational technologies, the wide range of readily available materials makes hardware selection very difficult. Computer hardware is a real device used by a computer program to perform installation, processing, extraction, and storage. The following hardware components are used by us,

- OS: Windows 7 or higher (64bit)
- Processor: Intel Core 2 Duo or higher (1.6 GHz or faster)
- Memory: 2 GB RAM or higher
- Storage: 1 GB of minimum available space.

Question 4

1.

- **Data Flow Diagram**
  The Data Flow (DFD) diagram is a clear demonstration of the "flow" of data through an information system, modeling its process processes. Frequency is the first step used to create a whole system view that can be defined later. DFDs can also be used to identify information processing (structured formats) and to indicate exactly what information will be included in and out of the system, where the information will appear and go, and where the information will be stored. It does not show details about the timing of processes or details that the processes will work in sequence or parallel.

  According to our system, the system is divided into three sections such as placing orders, making payments and tracking deliveries. In DFDs it describes the relationship between processing and data flow. It also defines data stores as the basis of system information. Describes the flow of data from the database to the process and how the foreign business is related to the process. When processing the form in the system the user must participate and complete the form. Then fill out the process form and the user is a foreign business. After filling out the form, the data is stored directly in a data store marked with arrows called data flow. The user does not have a database connection to the system but has direct access to the processor waiting for user input. This is just the flow of the system.

- **Use Case Diagrams**
  A usage case diagram can summarize the details of your system users (also known as actors) and their interactions with the system. To create one, you will use a set of special symbols and connectors. Active application diagram can help your team discuss and represent the contexts in which your system or application meets with people, organizations, or external systems, the objectives of your system or application that help those organizations (known as actors) achieve, Your scope system, representative objectives for user interaction, Defining and editing system requirements, clarifying context and program requirements, modeling the basic flow of events in a user environment and so on.

  According to our system, we can have actors, the system, and goals. Primary actors are the customers, and the secondary actors are Samson, credit payment services, bank, delivery recruiters and so on. System contains what actions are performed inside the system like showing delivery information, login to the account, creating an account, proceed to checkout and so on. The goal of this is to manage all the orders and provide effective service.

- **ER Diagram**
  The Enterprise Relationship (ERD) diagram shows the relationships of business sets stored in the database. A business in this context is an object, part of the data. A business set is a group of similar businesses. These businesses may have signs that describe their properties. By describing the organizations, their attributes, and showing the relationships between them, the ER diagram shows the logical structure of the data. The E diagrams are used to draw the structure of the database. A business set is a group of similar businesses, and these businesses can be branded. According to the DBMS, an entity is a table or table attribute in a database, so by showing the relationship between tables and their symbols, the ER diagram shows the complete logical structure of the database.

  According to our system, we can have attributes, relationships, entities, cardinalities, and so on. Here as an instance if we take the instance of creating an account,
- There's an attribute named "user".
- User has an action named "create".
- Then it is connected to an attribute named "account".

- Account has sub entities as Firstname, Lastname, ID, etc.
- In this instance, there's a Many to One (M:1) relationship. It is because the user can create only one account in the system, but the system can have many users and many accounts.

2.

About Us

EXPRESS DELIVERY
courier service

About Us

Photo | Photo | Photo | Photo

Provide feedback.

Submit feedback

Express Delivery
Courier Service.

Tracking Information
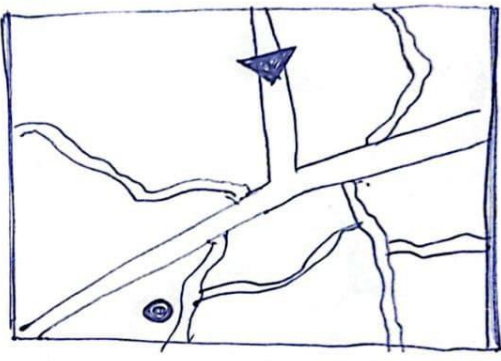
Sender

First name : XXXXX
Last name : XXXXX
ID card : XXXXXX
Date of delivery : XXXXXX
Special remarks : XXXXXXX
contact no : XXYYXXX
Address : XXXXXXXX

Receiver

Name : XXXXXXXXXXX
Address : XXXXXXXXXX
Contact No! XXXXXXXX

Current Order status:

● ✓ arrived to warehouse
● ✓ handed to delivery person
○ 🛵 Delivering