Faculty of Computers & Artificial Intelligence | **Benha University**
2nd Term (2019-2020) Final Exam | **Final Date**: 7 / 6 /2020
Information Security and Digital Forensics Program | **Total Marks:** Pass / Fail
Course Code: FIS231 **Level:** 2nd level | **Examiner(s):** Dr. Khaled M. Fouad
Course name: Systems Analysis and Design

Research submission: From 31 May to 7 June 2020

a) Write a research project in ONE of the following topics:

Topic No. 1

Online Diagnostic Lab Reporting System

The system is a web-based diagnostic lab manager application that brings up various diagnoses working online. Here patients are first allowed to register on the site and also login using registered details. Once registered with their address and contact details, the patients may now see a variety of tests conducted by the lab along with their costs. The system allows for CBC, Blood Glucose, KFT, LFT tests to be booked by the patient. The tests also consist of parameters like Hemoglobin, WBC, etc. Now the system allows users to book any test needed. After a successful booking system calculates costs and allows users to pay online, after payment, the patient test is booked, and the lab may now collect samples from the patient's registered address. After successful testing, the user now gets a notification of test result through an email. The system allows admin to attach a copy of the report into the system and automatically email it to the intended patient.

Topic No. 2

Automated Attendance System

An automated attendance system that consists of a web system for an entire organization to record attendance. Each Classroom or department has its login. On login, the class faculty can see a list of students or members registered under it. The faculty may take attendance and mark the present students using the checkbox provided in front of every student's name. This attendance sheet is stored and sent to the central administrator of the organization and stored there. The system has an admin login. The admin may check all attendance data, press a button to see defaulter list, search for particular student attendance by name, search class attendance, and generate excel reports.

Topic No. 3

Blood Bank

This project acts as an essential role in saving the lives of human beings and which is also its primary aim. The project Android Blood Bank system is developed so that users can view the information about registered blood donors such as name, address, and other such personal information along with their details of blood group and additional medical information of the donor. The project also has a login page wherein the user is required to register and only then can view the availability of blood and May also register to donate blood if he/she wishes to. This project requires internet access, and thus there is a disadvantage of internet failure. Therefore this application helps to select the right donor online instantly using medical details along with the blood group. The main aim of developing this application is to reduce the time to a great extent that is spent in searching for the right donor and the availability of blood

required. Thus this application provides the required information in no time and also helps in quicker decision making.

Topic No. 4

Airport Network Flight Scheduler

It has happened so many times that you have been waiting at the airport for someone to arrive and you don't have any exact information about flight timing and other stuff. So here we present to you a project on the flight scheduler system. Using this system, users can get information about flight timing, and it is on time or not, and other information. In this system, there is an admin module that enters the detail about flights and its timing, and these details pass through an internet server and are fetched by the system on other airports, and there is another system that shows flight information to the viewers on the airport. The second system will get all the information on all flights but will automatically select the data that refers to a particular airport and shows that information on a screen. For example, if an admin at Mumbai airport enters information about the Delhi flight Chennai airport system will not be affected. Still, the Delhi airport system will show the information about the flight. This system works like – when the flight is departed late from an airport, an admin will enter details about departure and its time, and this information goes in real-time on the internet server and retrieved on another system through internet server and shows the details on screen. This second system is installed on various locations on the airport for viewers to view the information. Admin will add information like add flight left from the airport, expected arrival at the destination, delay in the flight schedule, etc. This project publishes real-time flight schedule events to subscribing to multiple client applications.

Topic No. 5

Local Train Ticketing

A local train ticketing system for local trains allows users to book local train tickets and get ticket receipts online. This local train project provides login rights for normal users and admin. A normal user may log in and get a ticket online, print it, and travel by train. The ticketing process consists of a ticket booking form. The form allows the user to choose his source and destination. The source is the station from where the user will be boarding the train. The target is the station he needs to get down at. The system also consists of an option to select whether a ticket is a single journey or a return ticket, and the journey will be commenced in first-class or a second class. It also consists of an admin account. The admin may recharge the user account balance and check for various journey tickets processed in the system.

Topic No. 6

Sentiment Based Movie Rating System

We usually come across movie rating websites where users are allowed to rate ad comments on movies online. These ratings are provided as input to the website rating system. The admin then checks reviews, critic's ratings and displays an online score for every movie. Here we propose an online system that automatically allows users to post reviews and stores them to rate movies based on user sentiments. The system now analyzes this data to check for user sentiments associated with each comment. Our system consists of a sentiment library designed for English. The system breaks user comments to check for sentimental keywords and predicts user sentiment associated with it. Once the keywords are found, it associates the comment with a sentiment rank. The system now gathers all comments for a particular movie and then calculates an average ranting to score it. This score is generated for every movie in the

system. The system also sorts and displays top rating movies as per analysis and calculates a top ten list automatically. This provides an automated movie rating system based on sentiment analysis.

Topic No. 7

Automated College Timetable Generator

Most colleges have several different courses, and each course has several subjects. Now there are limited faculties, each faculty teaching more than one subject. So now, the time table needed to schedule the faculty at provided time slots in such a way that their timings do not overlap, and the time table schedule makes the best use of all faculty subject demands. We use a genetic algorithm for this purpose. In our Timetable Generation algorithm, we propose to utilize a timetable object. This object comprises of Classroom objects and the timetable for every them, likewise a fitness score for the timetable. The fitness score relates to the number of crashes the timetable has regarding alternate calendars for different classes. Classroom objects comprise of week objects. Week objects comprise of Days. Also, Days comprises of Timeslots. Timeslot has an address in which a subject, student gathering going to the address and educator showing the subject is related. Also, further on discussing the imperatives, we have utilized composite configuration design, which makes it well extendable to include or uproot as numerous obligations. In every obligation class, the condition, as determined in our inquiry, is now checked between two timetable objects. On the off chance that requirement is fulfilled, i.e., there is a crash available, then the score is augmented by one.

Topic No. 8

Furniture Shopping

The furniture shopping system is an android application that allows users to check out for various furniture available in the store and can even purchase them online. The system provides a categorized list of furniture products of different styles and models. Users have to log in to the system for browsing each product and can then add them to their cart. After selecting the products, users can make secure online payments via a credit card. Thus the online furniture shopping project brings an entire furniture shop online and makes it easy for both buyer and seller to make furniture deals.Sql serves as a backend to store furniture lists and inventory data. Thus the online furniture shopping project brings an entire furniture shop online and makes it easy for both buyers and sellers to make furniture deals.

Topic No. 9

Visual Product Identification For The Blind.

This project is developed to make the life of blind people easy. This is a camera-based system to scan the barcode behind the image and read the description of the product with the help of Id stored in the barcode. This is very beneficial in case of finding out the description of packaged goods to the blind people and thus helping them in deciding to purchase a product or not primarily, which are packaged. This is because it becomes complicated for blind people to distinguish between the packaged goods. To use this system, all the user needs to do is capture the image on the product in the mobile phone, which then resolves the barcode, which means it scans the image to find out the Id stored. Thus, this application benefits blind and visually impaired people and thus doing their work of identifying products easy. This is very easy to use and affordable, as it requires a scanner to scan the barcode and a camera phone to take a picture of the image containing the barcode. This is now easy to implement as most of the mobile

phones today have the required resolution to scan the barcode to identify the Id stored in it and read out the product description. This project can be implemented in any shopping mall, supermarket, Bookstores, Medical stores, etc.

Topic No. 10

Online Election System

Online Election System would have Candidate registration, document verification, auto-generated User ID, and pass for candidate and Voters. Admin Login, which will be handled by Election Commission. Candidate Login, which will be handled By Candidate, Voters will get Unique ID and Password, Using which they can vote for a Candidate only once per Election. The project is beneficial for Election Commission, Voters, as they can get to know the candidate background and choose wisely, and even for the candidate. The software system allows the candidate to login to their profiles and uploads all their details, including their previous milestone onto the system. The admin can check each Candidate details and verify the documents, only after verifying the candidate's ID and Password will be generated and can remove faulty accounts. The software system allows Voters to view a list of Candidates in their area. The admin has overall rights over the system and can moderate and delete any details not pertaining to Election Rules.

b) <u>Notes: please, your project must contain the following elements:</u>

1. **Project Basic Data**
2. **Project Overview**
   - **2.1** Project description
   - **2.2** Project Scope
   - **2.3** Assumptions
   - **2.4** Constraints
3. **Project planning**
   - **3.1** Project life cycle
   - **3.2** Methods, Tools, and techniques.
   - **3.3** Schedule allocation
   - **3.4** Resource allocation
   - **3.5** Budget allocation
   - **3.6** Risk management
4. **System analysis**
   - **4.1** Determining system requirement
   - **4.2** Structuring system requirement
     - Process Modeling (Data flow diagram and decision table)
     - Data Modeling

5. **System design**
    - **5.1** Designing the human interface
        - Designing forms and reports
        - Designing interfaces and dialogues
6. **Conclusion**
7. **Reference**

GOOD LUCK,

Examiner(s)	**Program Coordinator**
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