



THE STATE UNIVERSITY OF ZANZIBAR
SCHOOL OF COMPUTER, COMMUNICATION AND MEDIA STUDIES
DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY
FINAL EXAMINATION
SEMISTER II - 2021/2022
CS/INF 2216 - Principles of Computer and Network Security

Date: 22 July, 2022

Time: 02:00 pm - 05:00 pm

1. This paper consists of Two Section, Section A and Section B. Answer ALL question from Section A and any 3 questions from section B.
2. Sections A and B carries 24 marks and 36 marks, respectively.
3. Cellular phones and any other unauthorized materials are NOT allowed in the examination room
4. Make sure that the points you make are not repetitive within your answer. Also, each question addresses a different issue. If you find yourself repeating the same information as you answer different questions, you may be on the wrong track.
5. Answer each question in separate page. Any attempt to answer more than questions required will not be entertained
6. This exam consists of printed 5 pages, including cover page.

Answer all questions in this section.

This Section carries 24 marks.

Question One: Choose a correct answer from multiple answers by writing a letter to the corresponding question. (12 marks, each 1)

- I. Ally is the physical security official for a data centre hosting organization. While entering the building this morning, he noticed that one employee used his badge to enter the building and then held the door open for two other employees. Which one of the following situations occurred?
 - A. Dumpster diving
 - B. Piggybacking
 - C. Impersonation
 - D. Shoulder surfing
- II. What **best** describes two-factor authentication?
 - A. Something you know
 - B. Something you have
 - C. Something you are
 - D. A combination of two listed above
- III. Email spoofing:
 - A. obscures the true email sender
 - B. copies email messages sent from a specific user
 - C. modifies email routing logs
 - D. forwards email messages to all contacts
- IV. What are two attributes that an email message may contain that should cause a user to question whether the message is a phishing attempt? (**Choose two.**)
 - A. An image contained in the message
 - B. Spelling and grammar errors
 - C. Threats of losing service
 - D. Use of bold and italics
- V. The name of a particular wireless LAN that is broadcast on a network is referred to as a:
 - A. MAC address
 - B. Basis Service Set (BSS)
 - C. Wireless Access Point (WAP)
 - D. Service Set Identifier (SSID)
- VI. What are two examples of physical site security? (**Choose two.**)
 - A. enforcing multi-factor authentication
 - B. sending backups to a remote location
 - C. keeping machines in locked offices
 - D. using BitLocker encryption on drives

- VII. The reason for implementing Service Set IDentifier (SSID) masking is to:
- hide a network share from unauthorized users
 - hide a wireless network name from unknown computers
 - enforce a more secure password policy
 - disable auto logon
- VIII. You need to grant a set of users write access to a file on a network share. You should add the users to:
- The Everyone group
 - A security groups
 - A distribution groups
 - The Authenticated Users group
- IX. When an attacker is able to **eavesdrop** on network traffic and identify the MAC address of a computer with network privileges. Which type of Wireless network threat would you classify this under?
- Identity Theft.
 - Man in the middle attack
 - Network Injection
 - Accidental Association
- X. Which of these is not a valid Signal-Hiding Technique for Wireless networks?
- Reducing the signal strength to the lowest level such that it still provides requisite coverage
 - Using directional antennas and signal shielding techniques
 - Installing the wireless access point away from exteriors of the building
 - None of the mentioned
- XI. Which of the following principle of cyber security restricts how privileges are initiated whenever any object or subject is created?
- Least privilege
 - Open-Design
 - Fail-safe Defaults
 - None of the above
- XII. Which one of the following statements is correct about Email security in the network security methods?
- One has to deploy hardware, software, and security procedures to lock those apps down.
 - One should know about what the normal behavior of a network look likes so that he/she can spot any changes, breaches in the behavior of the network.
 - Phishing is one of the most commonly used methods that are used by hackers to gain access to the network
 - All of the above

Question Two (6 marks)

- a) Use Caesar's Cipher (substitution cipher) to decipher the following cipher text HQFTLBSWTIG WHAW, using the below cipher pattern (3 marks)

a b c d e f g h i j k l m n o p q r s t u v w x y z
E D F G H I J K L M N O P Q R S T U V W X Y Z A B C

- b) Highlight three features which are required for the successful implementation of cryptanalysis (1.5 marks)
c) Briefly explain the difference between asymmetric and symmetric encryption. (1.5 marks)

Question Three (6 marks)

- a) Malicious code is the term used to describe any code in any part of a software system or script that is intended to cause undesired effects, security breaches or damage to a system. Outline 5 software/application components in which malicious code could be formed. (2.5 marks)
b) Briefly explain the capabilities of malicious code once entering inside of someone environment (i.e., inside network drives) (2.5 marks)
c) Briefly describe the motivation of a backdoor as far as malicious code is concerned (1 mark)

Section B: Answer any THREE (3) questions.

This Section consists of 36 marks, each question carries equal mark.

Question Four (12 marks)

- a) Briefly describe why the management of cryptographic keys is such an important issue? (2 marks)
b) There are three main key categories, (i) symmetric secret keys, (ii) asymmetric keys and (iii) asymmetric private keys. Briefly describe which type of security protection such as confidentiality, integrity and authenticity that is/are required for each key category. (6 marks)
c) With the help of block diagram differentiate between Stream cipher and Block cipher of modern symmetric cryptographic keys (2 marks)
d) With example, briefly describe the term transposition cipher as far as symmetric cryptographic key is concerned. (2 marks)

following cipher text

X Y Z A B C

implementation of

tion. (1.5 marks)

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ed (1 mark)

Question Five (12 marks)

- a) Briefly describe two types of code-based vulnerability exhibit during the development of web applications. (3 marks)
- b) Outline 5 password policy components that are designed to enhance computer security by requiring users to deploy and preserve a strong password. (2.5 marks)
- c) Define privilege escalation as far as network attacks is concerned (1.5 marks)
- d) Briefly describe two types of privilege escalation attacks (3 marks)
- e) Differentiate between permission and right for privilege management procedures (2 marks)

Question Six (12 marks)

- a) Hardening is the process of reducing vulnerabilities in the operating system. Briefly describe 3 methods which are used to harden each of the following:
 - i. Operating system. (3 marks)
 - ii. Network devices (3 marks)
- b) With example, define the term 'attack surface'. Why it's important to reduce attack surface during hardening of operating system (3 marks)
- c) What are the motivations of operating system's users to require operating system updates as a part of hardening process (1.5 marks)
- d) Briefly describe the difference between 'security patches' and 'critical updates' as far as software updates is concerned (1.5 marks)

Question Seven (12 marks)

- a) What problems associated with active scanning influence the attacker to use passive scanning during the war driving process. (3 marks)
- b) When we say that a network interface is operating in the promiscuous mode/rfmode, what do we mean? (3 marks)
- c) A Virtual Private Network has been recommended to be used against war driving. What possible features do VPN possess which made it suitable to be used to protect against war driving? (3 marks)
- d) Briefly describe why de-authentication works when implemented during the war driving? (3 marks)

Question Eight (12 marks)

- a) Describe the advantages of Intrusion Detection System (IDS) against firewall systems (3 marks)
- b) Define Host based IDS. What are the four features does Host based IDS uses to monitor when deployed in the host-based environment. (3 marks)
- c) Differentiate between the following terms frequently used in Intrusion Detection System
 - i. Signature-based and Anomaly-based IDS (3 marks)
 - ii. Passive and Active IDS (3 marks)

STATE UNIVERSITY OF ZANZIBAR (SUZA)



DEPARTMENT OF COMPUTER SCIENCE AND IT

END OF SEMESTER EXAMINATION - 2022

BACHELOR OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

PROGRAMME	BITA&CS&IT 2 nd Year	SEMESTER	II	ACADEMIC YEAR	2021/2022
COURSE CODE:	CS2215/ INF2215/ WT822	COURSE TITTLE	Web Technologies/ Advanced Web Programming		
DATE	Friday 15 th July, 2022		TIME ALLOWED: 2 HOURS 09:00 AM - 11:00PM		

INSTRUCTIONS TO STUDENT

1. This paper consists of **TWO (2)** sections **A** and **B** which carries 24 marks and 16 marks respectively.
2. Answer **ALL** questions from sections **A**, and **ONLY ONE (1)** questions from section **B**.
3. Cellular **PHONES** and any other **UNAUTHORIZED** materials are **NOT allowed** in the examination room.
4. Don not write anything in this paper.
5. **START TO ATTEMPT EACH QUESTION IN A NEW PAGE.**
6. This examination consists of six **(4)** printed pages, including cover page

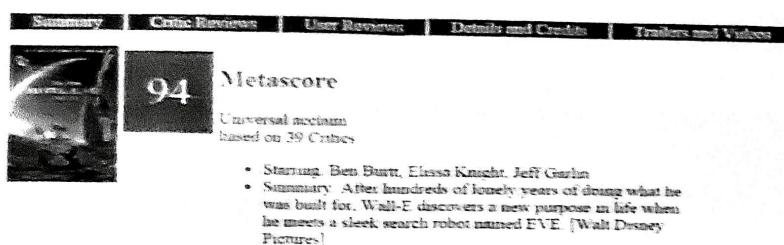
SECTION A (24 marks)

Answer all questions in this section

1. Write the HTML and CSS code necessary to recreate the following appearance onscreen, exactly as shown. (6 marks)

WALL-E

Walt Disney Studios Motion Pictures Release date: Jun 27, 2008



The menu items (Summary to Trailers and Videos) are white text on a black background. There is 20px space between the words and the right and left sides of their black boxes. There is 3px of blank space to the right of each. The score information should be 50% wide. The movie rating has a green background and white text. The number is in 30pt font. There is 20px space between the number and the edges of the green background. There is 5px blank space around the green background. The background color of the page is gray but the background color of the area containing everything is white. The white area is 80% wide and centered. There is 20px of space between the edge of the white background and everything inside it.

2. a Assume you have been given the following HTML code, write a JavaScript function which change the color based on the color selected from the button. (NB. Use querySelector object in defining your results) (3 marks)

```
<!DOCTYPE html>
<html lang="en">
<body>
    <h1 id="hello">Hello</h1>
    <button data-color="red">Red</button>
    <button data-color="blue">Blue</button>
    <button data-color="green">Green</button>
</body>
</html>
```

- b The following HTML Code display the form for Currency Converter, the API for exchange rate is <https://api.exchangeratesapi.io/latest?base=USD>.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Currency Exchange</title>
    <script src="currency.js"></script>
</head>
<body>
    <form>
        <input id="currency" placeholder="Currency" type="text">
        <input type="submit" value="Convert">
    </form>
    <div id="result"></div>
</body>
</html>
```

- i. You are required to write a JavaScript/AJAX response code which will fetch the currency conversion based on the input from a form, check for errors if invalid input is passed. (3 marks)

- ii. Store your result of exchange in local storage (3 marks)
3. a Browsers and web servers communicate using the HTTP protocol. Even though all HTTP communication follows a request-response pattern, information can be viewed as either being passed from the browser to the web server or passed from the web server to the browser. For example, the Angular/React photo sharing application you built in your project and your webServer.js pass back and forth all the major components of the application including: HTML templates, CSS style sheets, JavaScript libraries, model data, and controllers. For each of these components state which direction (browser to web server or web server to browser) and which HTTP method/verb is used for the transfer. Note some the components are transferred in both directions so list both directions and HTTP methods. (5 marks)
- i. Angular HTML templates ↗ ↘
 - ii. CSS style sheets ↗ ↘
 - iii. JavaScript libraries ↗ ↘
 - iv. Model data ↗ ↘
 - v. Angular controllers ↗ ↘ ↘
- b Describe two different ways information such as parameters can be sent from the browser to a web server using a HTTP POST request. (1 mark)
- c Describe how a browser decides how long it can cache a web page it fetched with a HTTP GET request. (1 mark)

part b

SECTION B (16 marks)

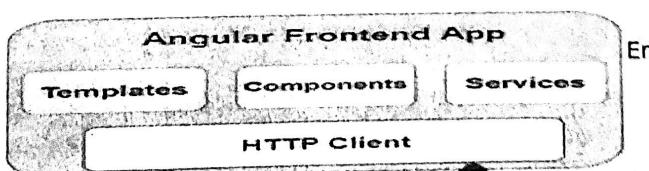
Answer ONLY ONE(1) question from this section

- 4 Employee Management System is portal which hold the employee data such as employee number as unique, first name, last name and email as unique. You are required to write a code for a web services that outputs JSON data. The structure for web services should follow the structure of building the spring boot services as follow. [16 marks]

- a. Create Spring Boot Project
Write a step to create a project using spring initializer or using maven commands
- b. Maven Dependencies
Create pom.xml file which you will add the basic spring boot services includes MySQL/PostgreSQL database
- c. Configure MySQL/PostgreSQL Database
Using application.properties or application.yml file for database connectivity, create a properties file.
- d. Create Models
Write a code for employee model
- e. Employee Repository
Write a code for employee repository
- f. Services Layer
Write a code for employee service layer
- g. Controller Layer
Write a code for GET,POST,DELETE,PUT and GET by ID
- h. Create an Employee Application class which will be used as Main Class.
- i. Show how you can test your API using API client.

5.

[16 marks]



Employee

Management System is portal which hold the employee data such as employee number as unique, first name, last name and email as unique. You are required to write a code for a web services that outputs JSON data. Assume the Spring REST Controller is already developed for HTTP Methods such as POST,GET,PUT and DELETE, you are required to implement the following CRUD application.

- a. Write a command which will install latest angular CLI (**1 mark**)
- b. Using Angular CLI create a project of employee (**1 mark**)
- c. Identify at least 1 Components, Services and Modules you are thinking is feasible based on the above scenario. (**2 marks**)
- d. Using Angular CLI, create a component and services class (**1 mark**)
- e. Create a model for employee class (**3 marks**)
- f. Create a employee services (REST Client), this services should be able to implement HTTP Client methods such as POST,PUT,DELETE and GET. Assume the base URL is private baseURL = "http://localhost:8080/api/v1/employees"; (**8 marks**)



THE STATE UNIVERSITY OF ZANZIBAR

SCHOOL OF COMPUTING, COMMUNICATION AND MEDIA STUDIES

DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

FINAL EXAMINATION

SEMESTER II 2021/2022

CS 2212 / INF 2212: IT INNOVATION AND ENTREPRENEURSHIP

Date: 13-07-2022

Time: 02:00 am - 5:00 pm

INSTRUCTIONS

1. This paper consists of **TWO** sections, A and B, which carries 24 and 36 marks respectively.
 2. Answer all questions from section A, and any **THREE** questions from section B. Answer more questions other than directed shall not be marked.
 3. Cellular phones and any other unauthorized materials are NOT allowed in the examination room.
- 4. ANSWER EACH QUESTION ON SEPERATE SHEET**
5. This exam consist of three (3) printed pages, including cover page

SECTION A. Answer all questions (24 marks)

1. Differentiate between the terms [6 marks]
 - a) Sales and marketing
 - b) Creativity and innovation
 - c) Balance sheet and Profit & Loss statements
2. Short answers [10 marks]
 - a) Name the market type suited for start-ups?
 - b) What is effectuation?
 - c) What is positioning?
 - d) What is design thinking?
 - e) What is startup cost?
 - f) Name two techniques entrepreneur can use to develop solution from identify problem worth solving?
 - g) Define a break even point?
 - h) What is the purpose of solution demo interview?
 - i) What does the Tax collected from entrepreneur do to the Nation?
 - j) What is segmentation?
3. Why Business plan is not preferred to start-ups? [4 marks]
4. Describe at least three types of form of business structures owned by entrepreneurs [4 marks]

SECTION B (36 marks)

Answer any THREE questions, each question carries 12 marks.

5. Briefly explain with help of diagram the lean canvas [12 marks]
6. a) How to identify problem worth solving? [6 marks]
b) Briefly explain the concept learned from entrepreneurship module [6 marks] will help you as individual.
7. a) Why shared leadership style is best suited for start-ups [6 marks]
b) Briefly explain, how to identify co-founder for practice venture [6 marks]
8. a) Briefly explain the core concepts of Blue Ocean Strategy as a tool to develop Minimum viable product? [8 marks]
b) Briefly explain how to check the profitability of business idea [4 marks]

The State University of Zanzibar

Department of Computer Science & Information Technology

CS 2219 Mobile Applications Design and Development – Mid Term Exam

Degree Second Year, Second Semester – 2021/2022

This test carries 15% of your assessment

Time: 75 minutes

Tuesday, May 31, 2022

Q1. (a) What do you understand by the following Mobile Programming terms. [3 Marks]

- | | | |
|-------------|--------------|-------------|
| i. Manifest | ii. Emulator | iii. Widget |
| iv. Service | v. Fragment | vi. Layout |

(b) Differentiate between Analog and Digital Communication systems? [2 Marks]

Q2. (a) What is the difference between implicit and explicit Intent? [1 Mark]

(b) Draw a diagram for Android activity life cycle and explain it. [3 Marks]

Q3. Carefully look at the given login form. Then answer the following questions.

(a) Use android XML code to design the user interface components as shown in the given screen. Assume that a background of the screen is HA12C3. [3 Marks]

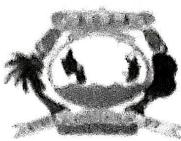
(b) Write sample Java code to activate Login button. When the user enters correct email and password a toast message “Welcome to the System” should be triggered and when the user enters wrong credentials a toast message “Wrong email or password, please try again!” should be triggered. [3 Marks]

Login

Email

Password

Login



THE STATE UNIVERSITY OF ZANZIBAR

SCHOOL OF NATURAL AND SOCIAL SCIENCES

DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

FINAL EXAMINATION 2021/2022

SEMISTER II

MOBILE APPLICATIONS DESIGN AND DEVELOPMENT – CS 2219

Date: 25-07-2022

Time: 2:00 PM – 5:00 PM

INSTRUCTIONS

1. This paper consists of TWO sections, A and B, which carries 24 and 36 marks respectively.
2. Answer all questions from section A, and any THREE questions from section B.
3. Cellular phones and any other unauthorized materials are NOT allowed in the examination room.
4. Answer each question on separate sheet.
5. This exam consists of four (4) printed pages, including cover page.

SECTION A [24 Marks]

Answer all questions in this Section

- Q1. Choose the correct answer for each of the following multiple-choice list questions and [24 marks] write a corresponding number.
- i. One of the following is not an advantage of digital communication system
 - A. Can merge different data
 - B. Inexpensive digital circuits
 - C. It require large bandwidth
 - D. Data encryption
 - ii. Which of the layer is below the topmost layer of android architecture?
 - A. System Libraries and Android Runtime
 - B. Linux Kernel
 - C. Applications
 - D. Applications Framework
 - iii. Which of the following android component displays the part of an activity on screen?
 - A. View
 - B. Manifest
 - C. Intent
 - D. Fragment
 - iv. Which of the following virtual machine is used by the Android operating system?
 - A. JVM
 - B. Dalvik virtual machine
 - C. Simple virtual machine
 - D. None of the above
 - v. What does API stand for?
 - A. Application Programming Interface
 - B. Android Programming Interface
 - C. Android Page Interface
 - D. Application Page Interface
 - vi. How can we stop the services in android?
 - A. By using the stopSelf() and stopService() method
 - B. By using the finish() method
 - C. By using system.exit() method
 - D. None of the above
 - vii. On which of the following, developers can test the application, during developing the android applications?
 - A. Third-party emulators

- 24 marks]
- B. Emulator included in Android SDK
C. Physical android phone
D. All of the above
- viii. Which of the following is the first callback method that is invoked by the system during an activity life-cycle?
A. onClick() method
B. onCreate() method
C. onStart() method
D. onRestart() method
- ix. Which of the following is not an activity lifecycle callback method?
A. onClick() method
B. onCreate() method
C. onStart() method
D. onBackPressed() method
- x. What is the use of content provider in Android?
A. For storing the data in the database
B. For sharing the data between applications
C. For sending the data from an application to another application
D. None of the above
- xi. In which state the activity is, if it is not in focus, but still visible on the screen?
A. Stopped state
B. Destroyed state
C. Paused state
D. Running state
- xii. All layout classes are the subclasses of...?
A. android.view.View
B. android.view.ViewGroup
C. android.widget
D. None of the above

SECTION B [36 Marks]

Answer any THREE questions from this Section, each question carries 12 marks.

- Q2. *Ans* (a) With aid of drawing differentiate between Analog and Progress dialog. [2 marks]
(b) Describe the difference of any two types of menu. [2 marks]
(c) Create three dots menu that contains the following items: Monday, Tuesday, Wednesday, and Thursday. After that use onOptionsItemSelected method using case statement to write Java code that responds to the stored menu item. Once a list menu is clicked, a toast message should pop-up with the same name of a particular selected item, such as "Monday is Selected". [8 marks]

- Q3. (a) Design a simple registration form as shown in Figure 1 using xml. The form background color is #12AB00. [6 marks]

Figure 1: Registration Form

- (b) Create an activity JAVA class to activate a "REGISTER" button. Once the user clicks the button all entered information should be captured and displayed to a toast message. [6 marks]

- Q4. (a) Define a Service in android? With aid of flow chart diagrams, differentiate between Bounded and UnBounded services. [5 marks]
- (b) Create a service applications that contain two button called SMS and Phone Call. When the SMS button is clicked it prompt user to send a short message to "+255773000001" and if the Phone Call button is clicked it prompt user to make a phone call to "+255773000002". [7 marks]

- Q5. (a) Differentiate between Shared Preferences and SQLite Database? [4 marks]
- (b) Create SQLite database with the following two tables.
Tunguu(campusId, location, address, phone_no and date_of_establish)
Student(studentId, name, address, phone_no and date_of_birth) [8 marks]

Then write the followings SQL statement:-

- i) insert three rows of information into each table.
- ii) retrieve one row information from Student and two rows information from Tunguu table.
- iii) view all information from Student table.
- iv) delete two information Tunguu table.



THE STATE UNIVERSITY OF ZANZIBAR

SCHOOL OF COMPUTING, COMMUNICATION AND MEDIA STUDIES

DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

FINAL EXAMINATION

SEMESTER II

FINANCIAL INFORMATION SYSTEM AND TECHNOLOGIES - INF 2201

Max. Marks: 60

Date: Wednesday, 20/07/2022

Time: 9:00AM-

12:00PM

INSTRUCTIONS

1. This paper consists of **TWO** sections, A and B, which carry 24 and 36 marks respectively.
2. Answer all questions from section A and any three (3) from section B.
3. Cellular phones and any other unauthorized materials are **NOT** allowed in the examination room.
4. **ANSWER EACH QUESTION ON A SEPARATE SHEET.**
5. This exam consists of **THREE** (3) printed pages, including the cover page.
6. Write your examination number on every page of your answer booklet.
7. Do not write anything on this question paper.

SECTION A (24 MARKS)

- 1 a. What Is Enterprise Computing? [1 Mark]
- b. What is Financial Transaction? [1 Mark]
- c. What Are Differences Between Manual and Computerized Accounting? [2 Marks]
- d. Why ERP financial is the first module to be implemented in many ERP packages. [3 Marks]
- e. Write a short note about Data Flow Diagram (DFD). [5 Marks]
- 2 a. Describe and list the types of technologies used throughout an enterprise. [4 Marks]
- b. How E-commerce is extended? [4 Marks]
- c. Write down any four (4) challenges and benefits of E-commerce. [4 Marks]

SECTION B (36 MARKS)

Answer any three (3) questions, each question carries 12 marks

- 3.
- a. Explain revenue cycles as well as expenditure cycles. [4 Marks]
 - b. Mention any four (4) common documentation techniques. [4 Marks]
 - c. Differentiate between cloud computing and enterprise computing. [4 Marks]
- 4.
- a. Describe The Process -Based Structure with examples. [4 Marks]
 - b. Draw a 0-level to level 1 DFD financial scenario. [4 Marks]
 - c. List general purpose and integrated information systems used throughout an enterprise. [4 Marks]
- 5.
- a. Why Financial Re-engineering. [4 Marks]
 - b. Explain three (3) Goals of Financial Re-engineering. [4 Marks]
 - c. Differentiate between program system and documenting in financial system [4 Marks]
- 6
- a. Describe at least four (4) Functions of Financial Software. [6 MARKS]
 - b. Describe the key dimension of e-commerce security? [4 MARKS]
 - c. What is the Accountant's role in FIS project management [2 MARKS]