

**Computer Science Department**  
**University of Computer & Emerging Sciences (FAST-NU)**

HOME WORK ASSIGNMENT COVER SHEET

COURSE TITLE: DATABASE SYSTEMS

COURSE CODE: CS2009

INSTRUCTOR: Teaching Team.

TYPE: Individual/ **Group**

ASSIGNMENT NO: HW-1 (Class)

ASSIGNMENT: Entity Relationship Diagram- Case studies

HAND OUT DATE 06-Oct-2021 DUE DATE 17-OCT-2021 (11:50PM)

ASSESSMENT CRITERIA (or attached)	% Mark
<p>This HW includes the following tasks</p> <p>Scenario</p> <p>Submission: Only soft copy in pdf is required.</p> <p><b>Group of max 2 students is allowed, individual work is acceptable in extreme situations and with <u>prior written (by email) permission of theory course teacher</u>. Such permission should be sought at least <u>5 days before the deadline of the assignment</u>.</b></p> <p><b>Any type of plagiarism will lead to 0% marks of both/all parties.</b></p> <p><b>Cross Section Groups are not allowed. Late submission will result in zero marks.</b></p>	

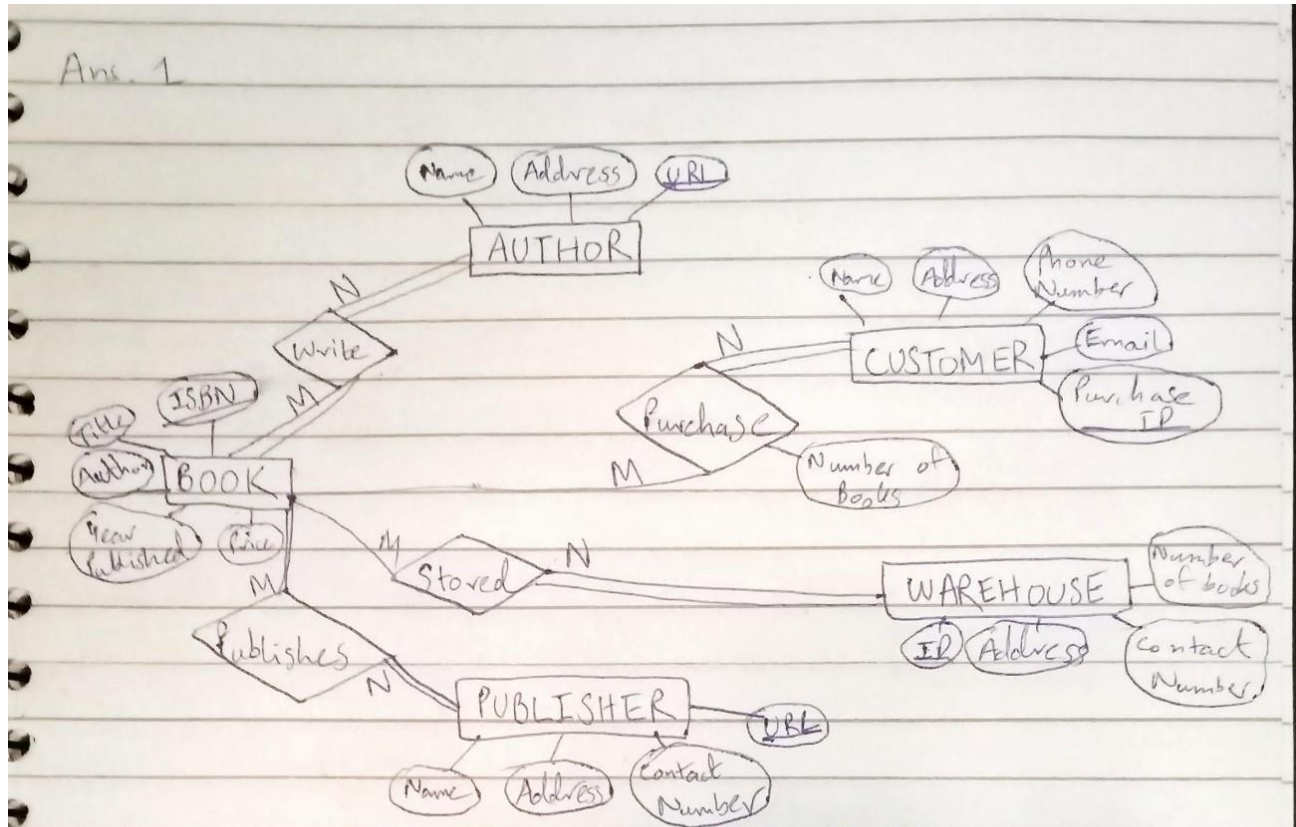
TO BE COMPLETED BY STUDENT (TEAM LEAD) GROUP MEMBERS ID	
NAME Abdullah Faisal	<div>Group Members ID</div> <div>ID 19I-1911      Sec# C</div> <div>ID 19I-1771      Sec# C</div>
ID NO 19I-1911 <u>Section#</u> C	
Time Taken: 2 days	
DECLARATION: I/We declare that this Coursework is my/our group's own work	
SIGNATURES (All members)	
Abdullah Faisal / Jiyad Khan	

GRADE/ MARK AWARDED COMMENTS

INSTRUCTOR'S SIGNATURE DATE

## Question 1: Online Book Store [20 Points]

In an Online bookstore, many authors write many books. Each author has a name, address, and URL. Each book has its ISBN, title, author name, year published and price. Each publisher publishes more than one book. Publishers have their own name, address, contact number, URL. Each customer can purchase more than one book. Each customer has a name, address, phone number, Email and purchase ID. The Number of books purchased are tracked during purchase. Many Books are stocked in many warehouses. Each warehouse has its own ID, Address, contact number, number of books.



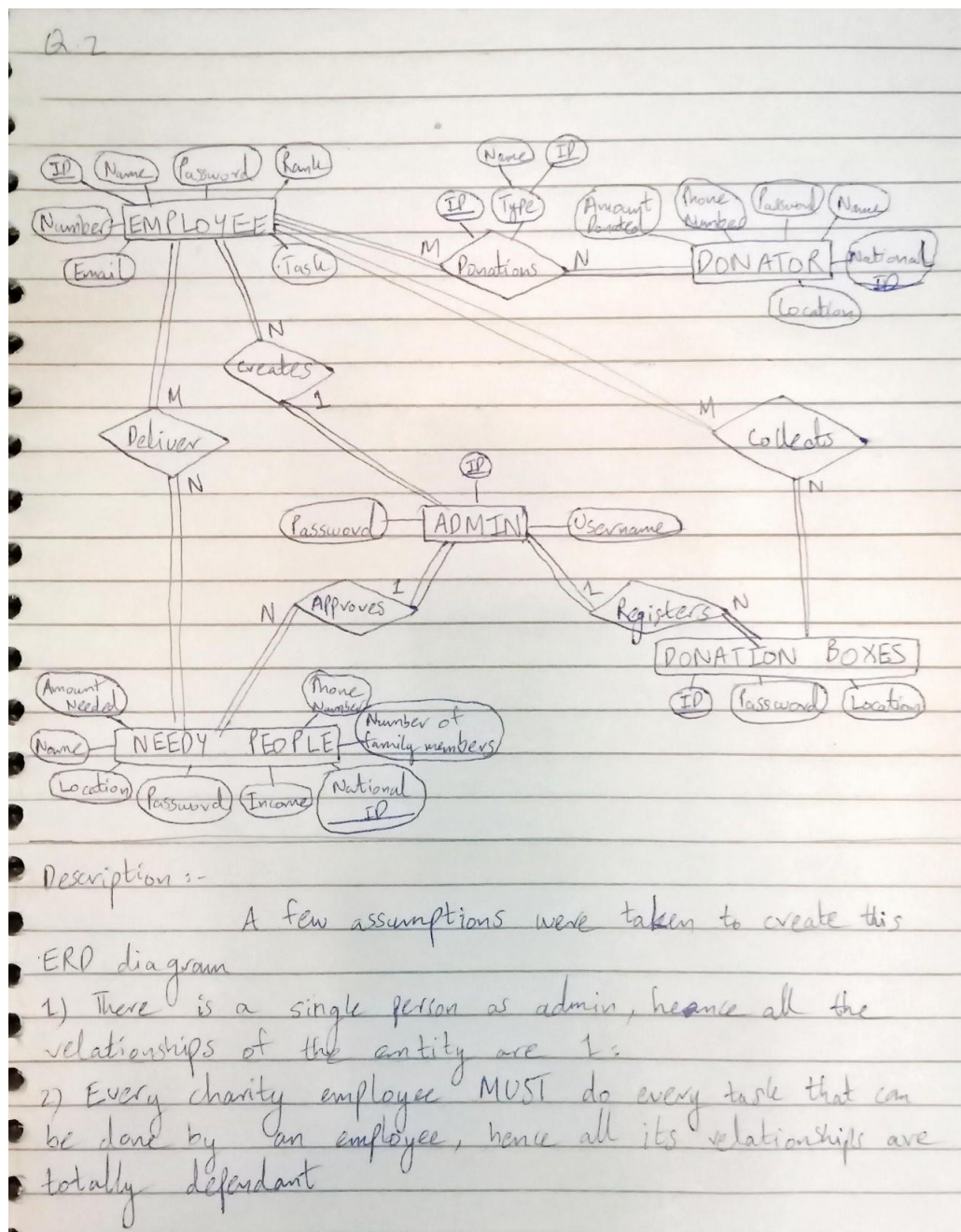
Description:-

A couple of assumptions were made to solve this question

- 1) The question said "Many Books are stocked in warehouses". We assumed that not all books are stocked in warehouses hence it is partially dependant
- 2) We also took the assumption that not every book is bound to be purchased by a customer.

## Question 2: Charity Foundation [30 Points]

In a charity foundation, there is an admin who creates an account of every employee that is employed in the foundation. An admin has an ID, a username, password whereas a charity employee has an ID, name, password, rank/status, phone number, Email, task. There are needy people who approach admin for any help. Admin approves many needy people. Needy people need to provide information about their national ID, name, password, phone number, income, total number of family members, location and amount needed to the foundation. Each charity employee can deliver donations to many needy people who approach the foundation. Admin also registers many donation boxes and each charity employee collects money from those donation boxes. These donation boxes have their ID, password and location. In this foundation the donator can make many donations. In order to make a donation, the donator has to provide information about his/her national ID, name, password, phone number, location, amount donated. Each donation has its ID and type. A charity employee receives multiple donations. Many donations have many types of items. Each type has its own ID and name. The items only have the total type of items in it.



### Question 3: Starbucks Coffee [50 Points]

The economy in trouble, the stock market tanking it is important to start your day with a good cup of coffee to take on these challenges. Can Starbucks sustain its business model and place in the market? The paper examines Starbucks business and its respective practices.

In 1971, the original Starbucks opened in Pike Place Market in Seattle, Washington by three partners named Jerry Baldwin, Zev Siegel, and Gordon Bowker. Their focus was to sell coffee beans and equipment. They purchased green coffee beans from Peet's, a specialty coffee roaster and retailer, during their first year of operation. Later, they began buying coffee beans directly from the growers. In 1983, an entrepreneur by the name of Howard Schultz joined the company; Schultz felt that the company should sell coffee and espresso drinks as well as coffee beans. The partners felt that selling coffee and espresso drinks would take away from their primary focus of selling coffee beans. Since the idea did not work, Schultz started his own company called Il Giornale coffee bar chain in 1985. In 1987, the original owners of Starbucks sold their chain to Schultz's Il Giornale. Schultz changed Il Giornale outlets to Starbucks chains and quickly began to expand.

Starbucks coffee has grown into the largest coffeehouse company in the world with 16,120 stores in 94 countries such as in Australia, Canada, China, Puerto Rico, etc. Starbucks has thirty blends and single origin coffee. Starbucks brand coffee can also be purchased in local stores to brew at home. Starbucks employs over 140,000 employees worldwide with over five million customers a week. At one point they had typical customers coming in on an average of six times a month while loyal customers come in on an average of eighteen times a month spending averaging \$50. Starbucks is one of *Fortune* magazine's 100 Best Companies to work for in 2008 and is *Business Ethics* 100 Best Corporate Citizens for the fourth year.

Starbucks product line has grown to include fresh brewed coffee, hot and iced espresso beverages, coffee and non coffee blended beverages, Tazo tea, baked pastries, sandwiches, and salads. Starbucks paraphernalia includes coffee grinders, espresso machines, coffee brewers, music CD's, books, movies and gift cards. The global consumer products include bottled Frappuccino, iced coffee, and espresso drinks, whole bean coffee, tea, coffee liqueurs and premium ice cream.

Some of the Company's trademarks, including Starbucks, the Starbucks logo, Frappuccino, Seattle's Best coffee and Tazo are all of great value to the Company. Starbucks owns numerous copyrights for items such as product packaging, promotional materials, in-store graphics, and training materials. In addition, the company also holds patents on certain products, systems, and designs and has registered and maintains numerous Internet domain names, including "Starbucks.com" and "Starbucks.net."

Starbucks retail stores can generally be found in extremely busy, accessible locations including being located directly off exit ramps to serve a wider range of customers and promote brand awareness. The stores can also be found in downtown and suburban retail settings, shopping malls, within office buildings and can even be found on university campuses. Drive Thru stores continue to develop to reach non-pedestrian customers.

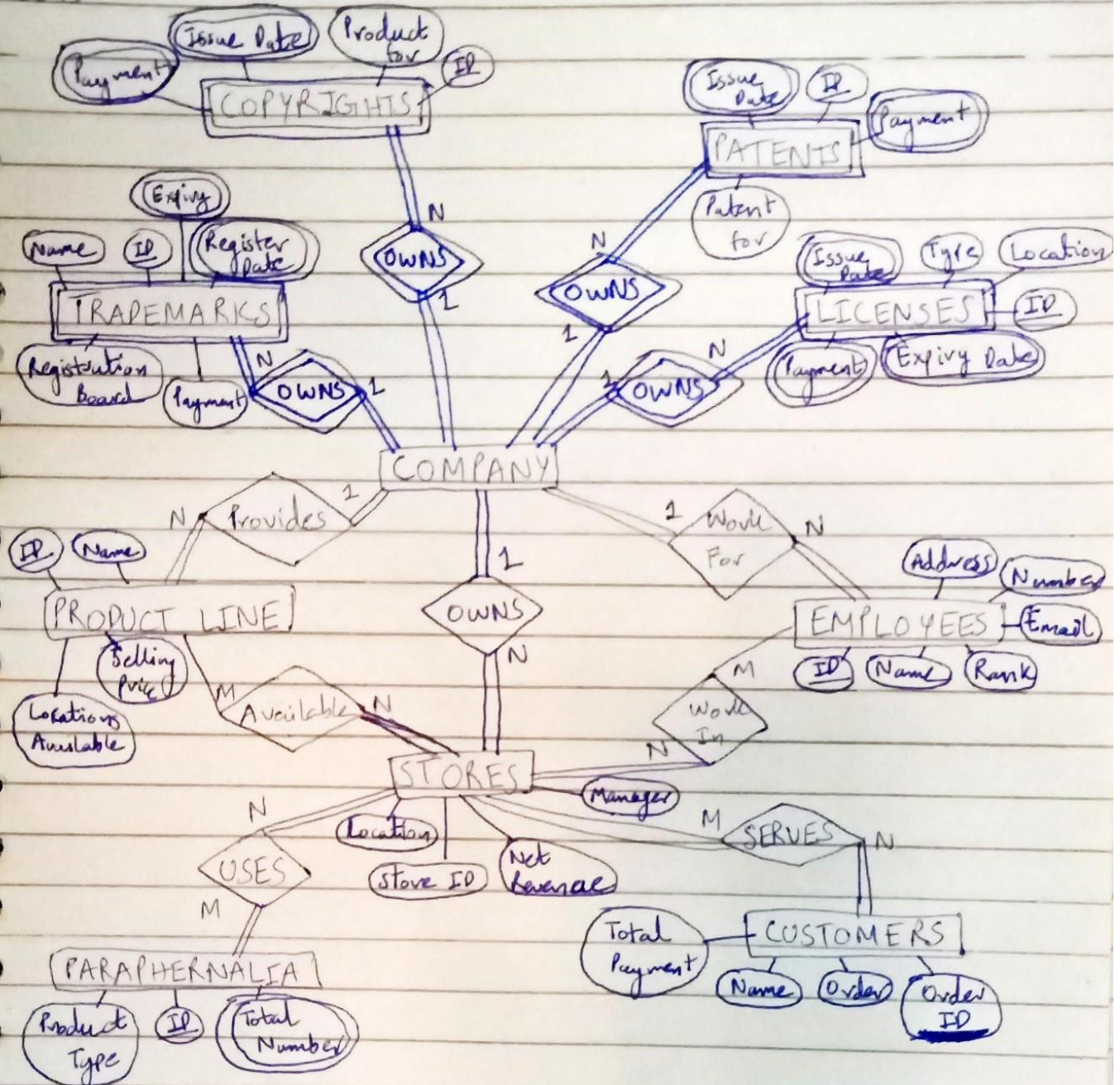
Starbucks relies a great deal on information technology systems in the operations of its supply chain, point of-sale processing, and many other business transactions. The management of these transactions greatly affects the production, distribution, and sale of its products. Any technical failure within these systems can cause delays in sales and decrease efficiency.

Starbucks utilized its Human Resources to its full capacity. Employees are required to follow Starbucks comprehensive store operating procedures and attend training classes. Starbucks realizes that its growth depends considerably on the knowledge, skills, and abilities of key executives and other employees and its ability to recruit and retain those employees.

Government policy exists to manage entry into an industry with licensing requirements regulations. Opening a coffee shop or restaurant will require obtaining certain licenses, i.e., business licenses, and tax id's, among other possible licenses.



Q.3



Description:-

- Most of this ERP diagram is based on assumptions since there is very hard fact in the statement
- 1) There is a central entity company, which is at the root of this ERP diagram
  - 2) All attributes of all entities are assumed, since there were no specifics in the question statement.
  - 3) Limited employees from the company work in a particular store and limited products are available per store

## **Deliverables:**

Submit your work that should include:

- ERD: Complete ER diagrams of all the case studies.
- Documentation: Paragraphs explaining details about the design regarding following aspects
  - What diagramming software is used and any comments on the software. You can also submit handwritten diagrams. But it should be easy to read and understandable.
  - Any clarifications about your ERD which are not evident in the model itself.
  - Any assumptions you had to make with respect to the requirements.
  - Any constraints (business rules) apparent from the requirements that you are unable to model via your ERD.