**KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY (KIIT)**

**(**Deemed to be University)

**SCHOOL OF COMPUTER ENGINEERING**

**Spring Semester, 2020-21**

**Lab Activity: Mini Project**

**Project Title: Crazy Films DVD Rental Library**

Crazy Films videos, (CFV), is a popular video rental organization and has multiple branches spread across various cities like Mumbai, Delhi, Kolkata and Bhubaneswar. Branch address made up of street, city, state, and pin code, and the phone number are recorded for every branch. CFV thinks that there has to be a unique identifier for each branch but leaves the decision to the discretion of the developer. CFV purchases DVDs from different vendors across the cities. Every vendor is given a unique number, name and address. Every branch is allocated staffs, which includes a Manager. The Manager is in-charge of the everyday running of a branch. The organization maintains its staff information such as name, aadhar number, designation, salary, mobile number, date of joining.

Every branch maintains an individual stock book which notes the information regarding the available stock of DVDs in that branch. The DVDs are placed in the racks based on their categories. The rack numbers should be used to effectively search for a required DVD, in general a rack has a number, location id, category of DVDs placed in that rack. The information held on a DVD is the movie catalogue number, DVD copy number, title, category (Action, Children, Drama, Horror, or Scientific), daily rental, cost, rental status, wear-out status and the names of the main actors, and the director. A master movie catalogue is maintained which records the information about the catalogue number, movie title, and number of copies of a movie. Since it is a large organization it maintains more copies of every DVD at a branch.

Before leasing a DVD from the organization, a customer should first register as a member from a local branch. The information held on a member is, first and last name, address, phone number, email and the date on which the member registered themselves at a branch. Every member is given a member number, which is unique throughout all branches of the organization. Once registered, a member is allowed to rent a maximum of 10 DVDs at a time. A penalty of Rs. 2 per day per DVD is collected for any delayed returns of a DVD. The information held on every DVD leased is the rental number, and the date the DVD is leased and expected return date. The DVD number is unique all through the organization. The customer acquires points either if he/she is frequently taking DVDs for lease or If a new member is introduced to the organization. By using these points customer can take DVDs for lease. Every customer is categorized into platinum, gold and silver according to the frequency of leased DVD. If the customer takes 10 DVDs for lease every month he/she is given a platinum badge. If the customer takes 5 DVDs for lease every month he/she is given a gold badge. If the customer takes 2 DVDs for lease every month he/she is given a silver badge. If the customer wants to own a leased DVD, CFVRO will take a decision whether to sell DVD or not. If the organization wants to sell a DVD, the customer category is considered for finalizing the price.

**What Student should do after reading the description?**

1) Identify the major data requirements and consider the default aspects of the domain.

2) Identify the Entities in the description.

3) Identify the attributes to each of the Entities.

4) Identify the Relationship between the entities as mentioned in the description.

5) Develop ER models as part of conceptual design.

6) Realize the ER models into schemas as part of logical design

7) Apply normalization techniques to decompose the above schemas where ever necessary.

8) Create tables with constraints to the identified schemas as part of logical design.

9) Insert relevant data into the tables.

**Note: It is suggested to go through the queries first and add relevant data.**

**Write SQL queries for the following:**

a) List all the employee details having salary greater than 10000.

b) List all customer names registered in the branch.

c) List all the movie names and mobile numbers leased by the customer in the year 2016.

d) List all the comedy movies in each branch.

e) Find the highest, lowest and average salary of the staff working in each branch.

f) List all the customer names, mobile numbers and mail address who got penalty.

g) List all the staff names, mobile numbers and movie titles leased by the staff based on each category.

h) List all the vendor names and phone numbers who saled their movies to the customers.

i) List all the customer names, address and saled price of the customer that got the movies saled by vendors.

j) List all the customer details, lease date, return date and rental price who have leased the movie ‘Bahubali‘.

k) List all the platinum customers of march 2015.

l) List the available copies in stock at a branch.