DBMS Assignment-2 k. Harshe Varmon HUZUSENO309339 ER Dragnams, Database Design

Name the math steps the database design which skep it the Exmodel is mainly widing to the database design process can be divided in the steps. The Extrodel is mainly used in the database design process can be divided the database design process, can be chiraled the database design process, can be chiraled that steps. The Extradel is most relevant that six steps. The Extradel is most relevant to first three steps

le Requirement Analysist

the very first step is designing a database application is to understand what database application is to be stored in the database, what applications must be built on top of it, and what operations are most frequent and subject to performance are most frequent and subject to performance requirements,

e Conceptual database de sijht

The knownation gathered on the requirements andysis stop is used to develop a in

a high-level description of the date to be stoved in the database, along with the constrainty known to hold over this data. This step is carried out with Ekmander.

3 Logical Database desemp

our doubase design, and convert the concepts our doubase design, and convert the concepts database ochema in the database schema in the database schema in the database choosen PBMS of the remains there steps of doubasare design are:

h. Schema Refinements

fourth step is to analyze the collection of relation on our relational database schemes to ordentify pokential problems to refine it

c. Physical Database Designs

En this step we knyoke building problemes on some tables and clusterthy some tables, or it may known a substantial redesign of parts of database schema

obtained from the earlier design steps 6. Application and Security designs Any software project that thrower a DBMS mout consider aspects of the application that so beyond the database Pholp. we must identify entities and process throwed in the application e) Define the following terms @ Entity, Entity set, Attribute, Key, do main 6 Relationship, relationship set, descriptive attribute One to one relationship one to many relatives many to many relatives ship Entity's an entity Pr an object reather real cooled that is destinguished from other objects.

Sentisty set! A collection of similar entities is called an entity set.

Attributes: An entity is described wing a set. Crow of Crops a set of altributes

* keys An key is a minimal set of attributed chose values uniquely Polentity on entity the the set

an entity set with a possible values

Collect domain

* Relationships A relationship is an associated among two of more entities

* Relationship sets A collection of a similar relationship set.

It Descriptive Attributes, Descriptive altributes on eyed do heled Penformation about the selectionship

* one to many relationships. A key constraint that in dicates that one entity can be associated with many of another entity.

It Many to many relationships a key constraint that Productes that many of one ontify can be associated with many of another entity

if a celliflute

one to one relationships a key constraint that Andicates that one entity can be associated with one of another entity A university database contains information about the profesions teach courses, each of the followry situations concerns the teaches relationship set, foreach situation draw on ER diagram that describes Pt. @ proffesors can teach the same course th several semestes, and each offering mentbe seconded.

Semid (SSN) Mas 169 Semestas volle (Course Pel) Professors Jeaches Courses Course name) Professors can teach the same court on several semestres and only the most recent such offeners needs to be seconded. (Sem ich) Coursel (NS8) EN Course Teaches Professor -Course name

O Every professor must teach some ause SIN Semester Courseid Holesar Course Teacher Courserance @ Every projessor feaches exactly one cour Professor Traches (Ced) Course Chame @ Every professor teaches? en actly one by some professor by some professor of Jin smoz so (Semestar) was (Crd) Professor Teaches Course Chame Course (Silvery) Jan Kel

D Suppose that Certain Louises can be faught by attorn of professors Jornty, but It es possible that no one proffesor. in a team conteach the course, Model this situation, Retroducty additional entity sets, and relationship sets of he ccessary. (SN) members & coop Group Profesion feaches semester. Ar calvora Courk . Chame A company doctabase needs to stope Reformation about employees Cidentified by empID, salary, phone no. as celtributy), & children of employees, (with name & age as attributes). Employees work in department each. department to managed by an employer. a child must be Petentified unequely by name when the powert Could 15 an employed 18 know the wild once the employee heaves the company

Draw an ER diagram that captures 35.
The Reformation. Lever Hoold the Stephon, Refroducting idelicand and gib, and relationship set if Luca 200 (Employees planeyes Department works th Mornation about employees albitudes hame agent, (with the see of control in , i butis). Employees work on empartment there openions we are morely on embrades while must be releasified energies grave the parad (who is an employed of lease are not reterested to si fermation about

O braduate students have, ID, have, age,
degree program

Bach project is managed by one or more profess

Chemony as projects (o-threstigator)

1 froffesors com manage and (or work on

multiple projects some or more of seach project's worked on by one or more graduate students (known as project's research

assistants)

But yraduate students work on aproject, a

proffesor ment supervise their work on the project

proffesor ment supervise their work on multiple

graduate students can work on multiple

graduate students can work on multiple

projects, in which case they will have to

supervise for each project.

O departments hade ed, name, main office O depart ments have proffesor, Chairman hey head B Professors work in one of more departments arel for each department that they work

on a time percentage is associated with that job O graduate students have one major department my which they are working on their degree 6 each graduate student has conother more en graduate student, achoson; lake, Destign on ER diagram floot Caphres the Reformation about the consideration. Use only basic ER modely 400000 Millioni , each biolick is cooked on plane as man graduate students (keeper as project s research (2) vosti 220 when graduate students work on appropriet, or professor winds (Mounts (rest work on fee bretan graducite strater o com work on munepla projects i'm which case they will have the supervise for each project departments had e ich nome main office Chairmon, how of deposit much be brook profferior, 3.50.8 profession works to one of more exercist transport show here

t Garage 233 dres professor tank specialist works Th Downow Superussa moy or 255 Project spouser other to don Sood Servior 255