1.   Introduction

The database enterprise used in the sample deliverables and implementation is the COMPANY example database from:

Fundamentals of Database Systems, 4th edition
R. Elmasri and S. Navathe
Benjamin/Cummings Publishing, 2004

2.   Requirements and Description of the Enterprise

ASU Marketplace is a large retail organisation of more than 200 employees and various customers. Each USER (Employee) is assigned a unique Id and depending on their role they are logged into the system.

• Details of each employee such as first name, last name, address, gender, marital status, no. of children, education, branch, date of joining, date of birth etc., are stored. Also the employee salary details are stored with salary breakup as basic, DA, bonus, HRA. Each employee is entitled to a loan scheme initiated by the organisation. Details of loan, if any, taken by the employee need to be tracked which include the loan date, employee reference, amount of loan, number of installments to repay the loan, interest rate applicable and status of the loan.

• Each customer is assigned a customer Id and has particular details like Name, Address, telephone number etc. Every customer is assigned with an account to a particular branch. Each account can be designated to an account type (say Premium or General) and has a date of opening.

• The whole organisation is divided into multiple branches spread across locations. Each branch consists of details like branch Id, branch name, address, telephone number, fax, date of opening etc. A branch can finance advertisements to enhance their sales and promotions. Each advertisement may be aimed at different media types like TV/ Radio/ Banners/ Internet/ Paper etc., and has a cost, start date and end date associated with it.

• The organisation maintains a repository of all inventories i.e. the items present. Details of items like item name, category, brand name etc., are recorded. Items will be available in branches where the branch may assign a particular cost to an item and can also have an advertisement to promote the sales of the item. Any customer can order a particular item from a branch either online or on spot.

1. *Uncaptured Constraints in the ER Diagram*

- Employee.employeeID will be a 10 digit numeric ID.
- Employee.maritialStatus is a set of 3 classifications: Single, Married, Widowed
- Employee.Education is a set of 5 classifications: None, Highschool, Bachelors, Masters, PhD
- salaryBreakdown.[Basic, DA, Bonus, HRA] are all dollar amounts given in USD
- LoanScheme.loanSchemeID is a 10 digit numeric ID
- Loan.loadDate is a date field
- Branch.branchID is a 10 digit numeric ID.
- Advertisement.mediaType is a set of 5 classifications: TV, Poster, Radio, Billboard, Sign Flipper Employee
- Advertisement.advertisementID is a 10 digit numeric ID
- Item.category is a set of classifications that are specified in a typical retail store
- Customer.customerID is a 10 digit numeric ID
- Item.itemID is a 10 digit numeric ID
- The database will store up to 20 different loan schemes
- An employee may only take one loan at a time
- The database will must be updated by at least one administrator and up to 5 administrators
- The database will store up to 20 branches

2.   Processing Needs

➢ **Forms**

Form Name	Description
Loan	
Update Loan Information	The admin can update the loan information whenever there is a written request to him/her by the employee, preferably by email.
Loan Scheme	
Removal of Loan	Whenever a loan is terminated, the admin will delete the record from the loan table.
Update Loan Information	The admin can update the loan information whenever there is a written request to him/her by the employee, preferably by email.
Employee	
Removal of Employee	An admin can remove an employee so long as they do not have any outstanding loans
Addition of Employee	An admin can add an employee with an employeeID and salary
Branch	
Add Advertisement	A branch manager can create a new advertisement and specify the ad type
Remove Advertisement	A branch manager can remove a advertisement
Update Branch Information	A branch manager can update the information of a branch
Advertisement	
Update Cost	A branch manager can update the cost of an advertisement in the case that the ad is renewed or the cost changes (ie. salary

	changes of sign flipper)
Update Media Type	A branch manager can update, expand, or contract the media types that apply to a given advertisement provided the proper materials exist to do so
Update Ad Dates	A branch manager can update the dates that an ad is set to run in case of renewal, this may accompany changes in media type and cost
Item	
Update Item Cost	A branch manager can update the cost of an item
Remove Item	A branch manager can remove an item being sold
Add Item	A branch manager can add a new item being sold
Customer	
Update Customer Information	Customers can update their own contact information such as name, address, and phone number at any time.

➢ **Reports**

Report Name	Description
Reports	
Loan Update	A report will be generated that details each loan that has been given to an employeeID, their payment history on that loan, and the start and end dates of that loan.
Branch Report	A report will be generated that details each branch, the branches contact information (Phone, FAX, Address), and any advertisements run by that branch
Consumer Report	A report will be generated that details all customers of the establishment and their order histories.
Advertisement Report	A report will be generated that details each advertisement run by the company, the branch it was run for, and relevant information

| | about the advertisement (mediaType, startDate, endDate, Cost). |

➢ **Queries**

Query Name	Description
Employee	
Employee Pos	Employees can have one of three positions: store manager, cashier, courtesy clerk. Returns the position of the employee
Employee Marital Status	Returns marital status of employee, can choose one of the following: married, single, widowed
Employee Contact	Returns the first name, last name, and address of employee
Employee Salary	Returns the salary of the employee
Employee ID	Returns the employee ID number
Employee Education	Returns the education level of the employee, can choose one of the following: None, Highschool, Bachelors, Masters, PhD
Loan Queries	
Loan Installments	Returns information about loan installments: how many monthly installments, and amount per installments.
Loan Date	Returns the date the loan was approved
LoanScheme Interest Rate	Returns the interest rate of the loan scheme
LoanScheme Loan Amount	Returns the loan amount

Branch Queries	
Branch Contact	Returns the main contact of the branch
Advertisement Queries	
Advertisement Media Type	Returns the media type of the advertisement
Advertisement Dates	Returns the dates of the advertisement used
Advertisement Cost	Returns the cost of the advertisement
Advertisement BranchID	Returns the branch ID of the advertisement
Item Queries	
Item Category	Returns the category of the item
Item Brand Name	Returns the brand name of the item
Item BranchID	Returns the branch ID of the item
Item Name	Returns the name of the item
Order Order Method	Returns the method of order
Customer Contact	Returns the customer's phone number and address
Customer Name	Returns the customer's name