Savitribai Phule Pune University

A

Project Report

On

"UML Diagrams for Bank Management application"

Submitted by

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UNDER THE GUIDANCE BY

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CERTIFICATE

This is to certify that **Swapnil Rajendra Take** has successfully completed his Report on "**UML Diagrams for Bank Management application**" at **Vishwabharti Academy's College of Engineering**, Ahmednagar in the partial fulfillment of the Graduate Degree course in B.E. at the Department of Computer Engineering, in the academic Year 2022-2023

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Prof. Sapike N.S.	Prof. Joshi S.G.	Prof. Dhongde V.S.
Project Guide	Head of Department	Principal

Date:
Place: Ahmednagar

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We would also like to express our gratitude to Prof. Dhongade V.S. for his constant source of encouragement and friendly guidance throughout the project work And at the end we would like to express our gratitude to all staff member who have directly or indirectly contributed in their own way and all my friends Computer Department for their suggestions and constructive criticism.

Mr. Swapnil Rajendra Take

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Bank Management System UML Diagrams

BANK MANAGEMENT SYSTEM UML DIAGRAMS are diagrams formed by the Unified Modeling Languages that acts as the blueprint for the project development. It shows the needed diagrams based in UML to guide you in building your Bank Management System. These UML Diagrams is composed of Use Cases, Activity Diagrams, Class, Sequences and many more.

Bank Management system should have these UML Diagrams, What are UML Diagrams, How to form them and how they actually work. In this article you will also know the bonus diagrams that will help you in understanding how the Bank Management System works. Each of these UML Diagrams comes with complete explanation to let you understand its contribution to the Bank Management system.

What are UML Diagrams?

UML diagram is a diagram based on the UML (Unified Modeling Language) that is used to visually describe a system, including its major actors, roles, actions, artifacts, or classes, in order to better understand, edit, maintain, or document system information.

Software engineers use the UML modeling language to create diagrams and provide ready-to-use, expressive modeling examples to users (programmers). Some UML tools create code in a programming language. The UML Diagrams are categorized into two types: the structural diagrams and the behavioral diagrams.

UML diagrams are the visual designs or the blueprint of the system structure and behavior. Structural diagrams helps in building the structure of Bank

Management System while the behavioral diagrams in UML helps in determining its behavior towards the user, data inputs and producing an output. All of the UML diagrams works in sync and relatively to achieve a well-engineered project.
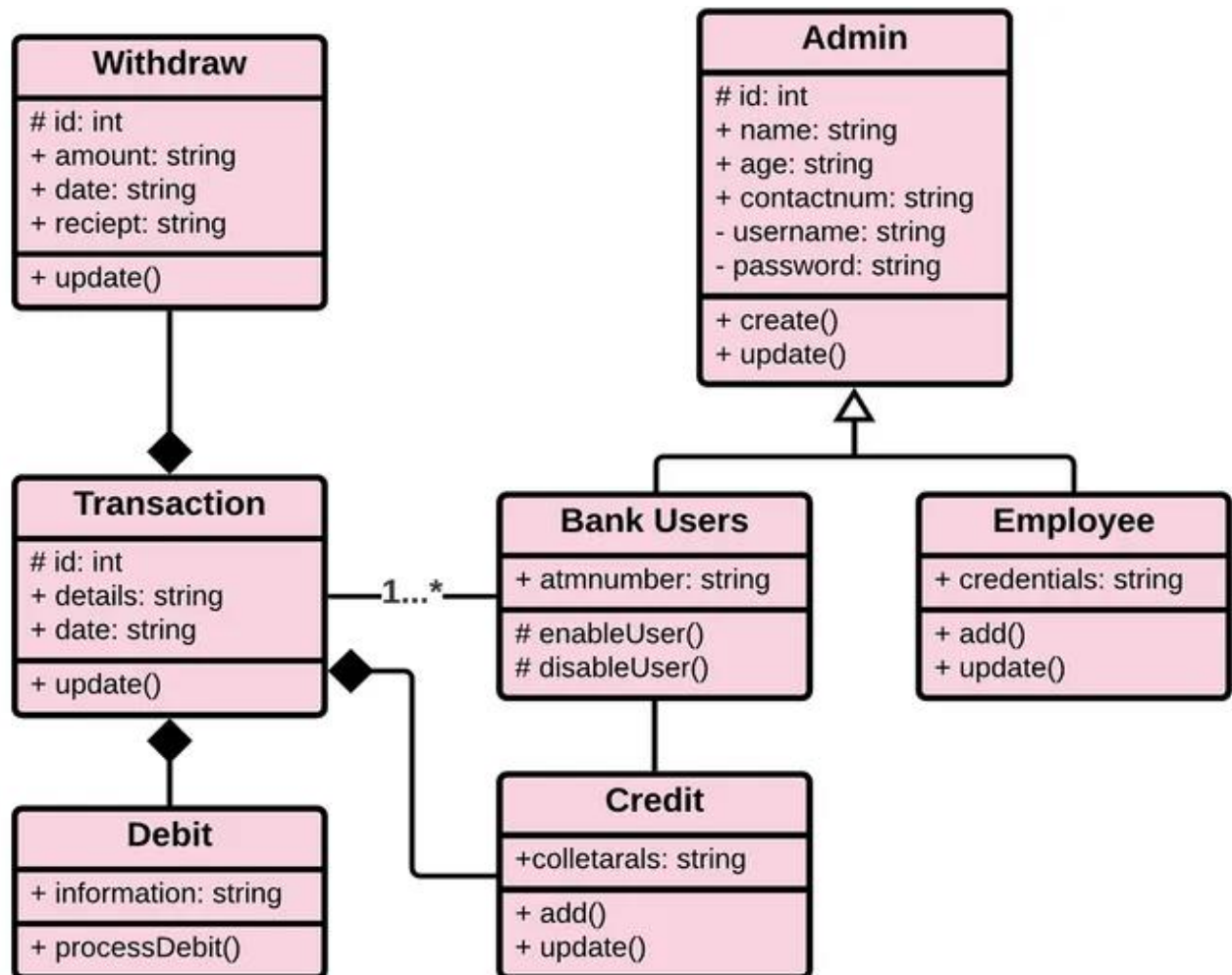
Building an Bank Management System UML Diagram :

The first thing that you must do before building UML Diagrams for the System is to collect as much Bank Management data as you can. You'll need to know how they manage bank information, processing bank transactions and distribution of information. You must complete all the necessary information in order to provide a quality system for them. Then you'll apply the data gathered in designing the UML diagrams.

The purpose of building the system is to provide the Bank employees and owners the easier and efficient way of doing their tasks. And in order to do that, you have to complete the needed diagrams to perfectly furnish your project. Build your project completely using UML Diagrams to help you and keep you from repeating its development.

Here are the UML Diagrams that composes a Bank Management System. Each of the UML Diagrams has a major role in achieving a well-developed and functional Bank Management System.

Class Diagram :

The Class diagram for Bank Management System shows the structures of information or data that will be handled in the system. These data or information will be represented by classes. Each of the classes will have their attributes in accord to the methods they will use. So the UML Class diagram was illustrated by a box with 3 partitions and the upper part was the name of the class, the middles are the attributes and the bottom is for the methods. The arrows on them represents their relationships in each other.
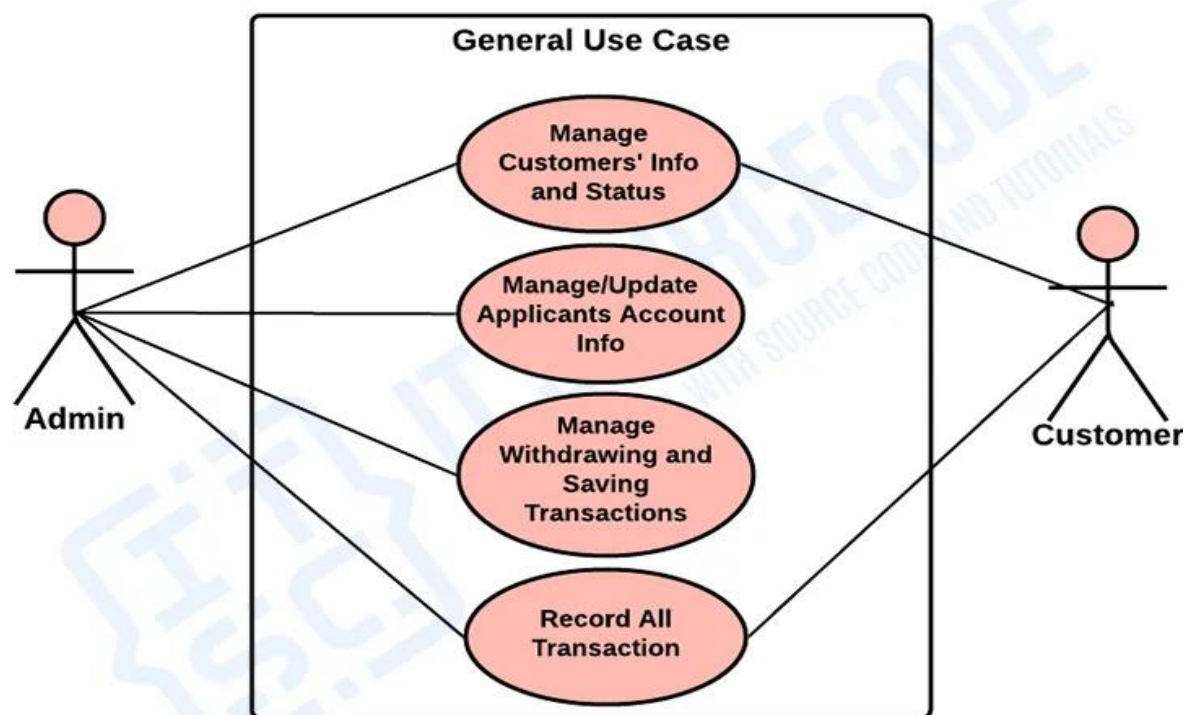
Withdraw
id: int
+ amount: string
+ date: string
+ reciept: string

+ update()

Admin
id: int
+ name: string
+ age: string
+ contactnum: string
- username: string
- password: string

+ create()
+ update()

Transaction
id: int
+ details: string
+ date: string

+ update()

1...*

Bank Users
+ atmnumber: string

enableUser()
disableUser()

Employee
+ credentials: string

+ add()
+ update()

Debit
+ information: string

+ processDebit()

Credit
+colletarals: string

+ add()
+ update()

So the classes that must be made in a Bank are   the **admin**, **users**, **member registration**, and **transaction**. The mentioned classes were just general. If you want more complex or wider scope of your Bank management system, then you can add your desired classes. You must also include the database on your Class Diagram for your system.

Use Case Diagram :

The use cases in the diagram represents the main processes in Bank Management System. Then they will be broken down into more specific use cases depending on the included processes of the main use case. Each of these use cases explains how the system handles the actions or scenarios requested by the user.

BANK MANAGEMENT SYSTEM

USE CASE DIAGRAM
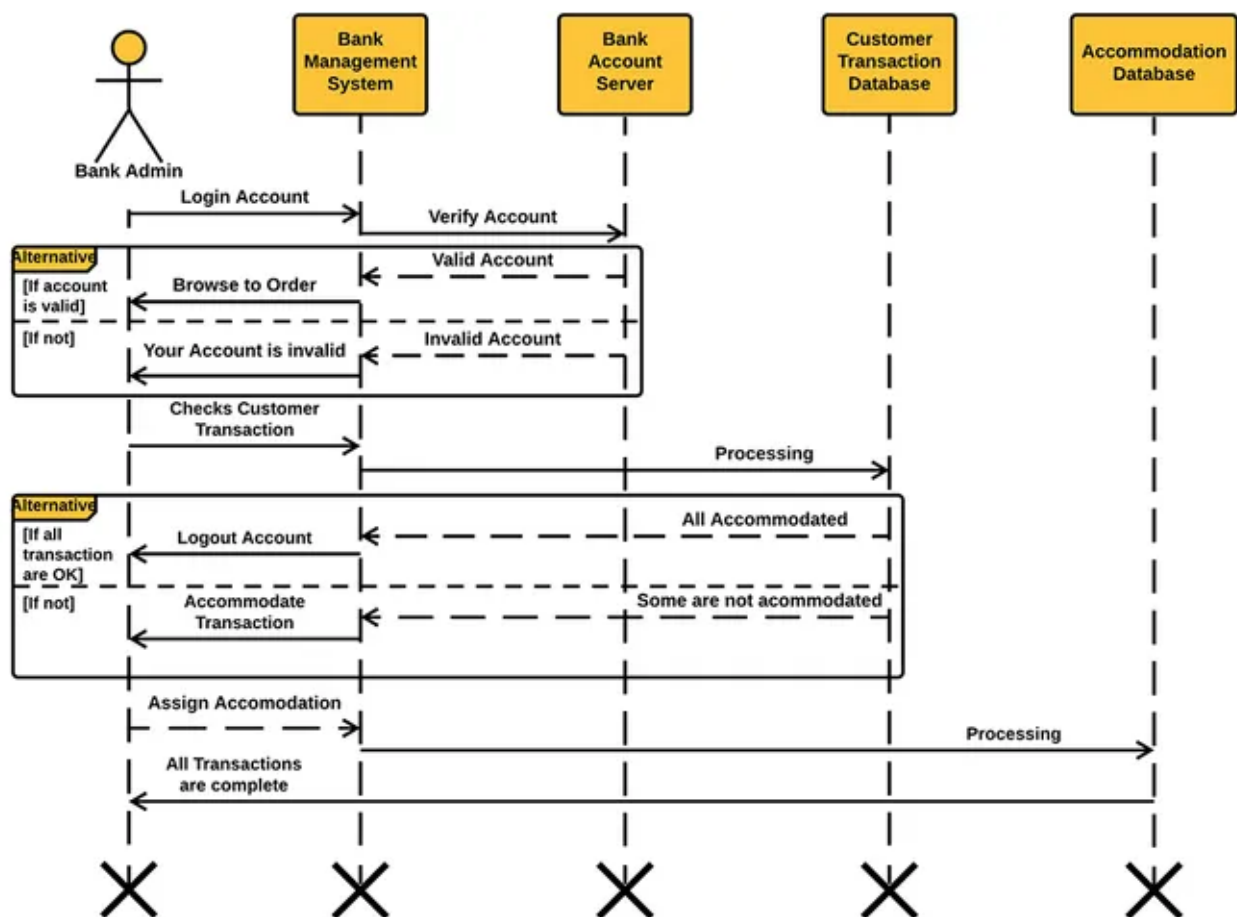
The UML Use Case Diagram is a design used as one of the Methodology on Bank Management System development. It represents the main functions or processes of the system as well as the specific processes included. They

were also labelled properly to guide programmers and users about the structure of Bank Management System.
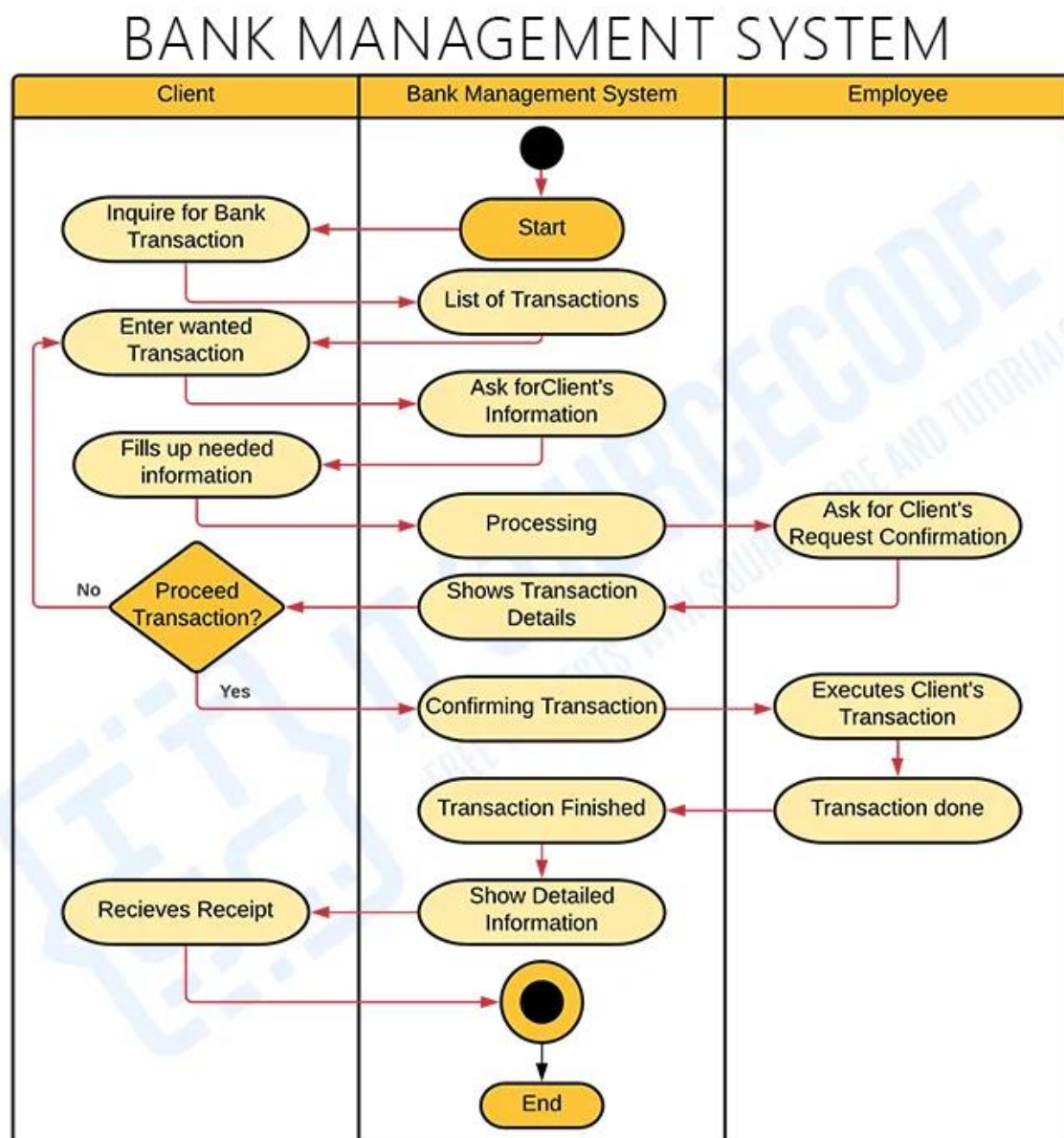
Sequence Diagram :

The designed sequence diagram illustrates the series of events that occurs in Bank Management System. In this illustration, the actors are represented by a stick man and the transactions or classes are represented by objects. It will give you clear explanation about the behavior of an Bank Management System in terms of processing the flow of instructions.

This designed sequence diagram is able to show programmers and readers about the sequence of messages between the actor and the objects.

Activity Diagram :

Here's the UML activity diagram design of Bank Management System that you can use for your own Final year Project. The UML activity Diagram is used to show the interaction of the user and the system. By creating it, you'll be able to see the flaws of the system and you may avoid it once you apply it to the project development. So it is important to have your diagrams designed first before jumping into its development.
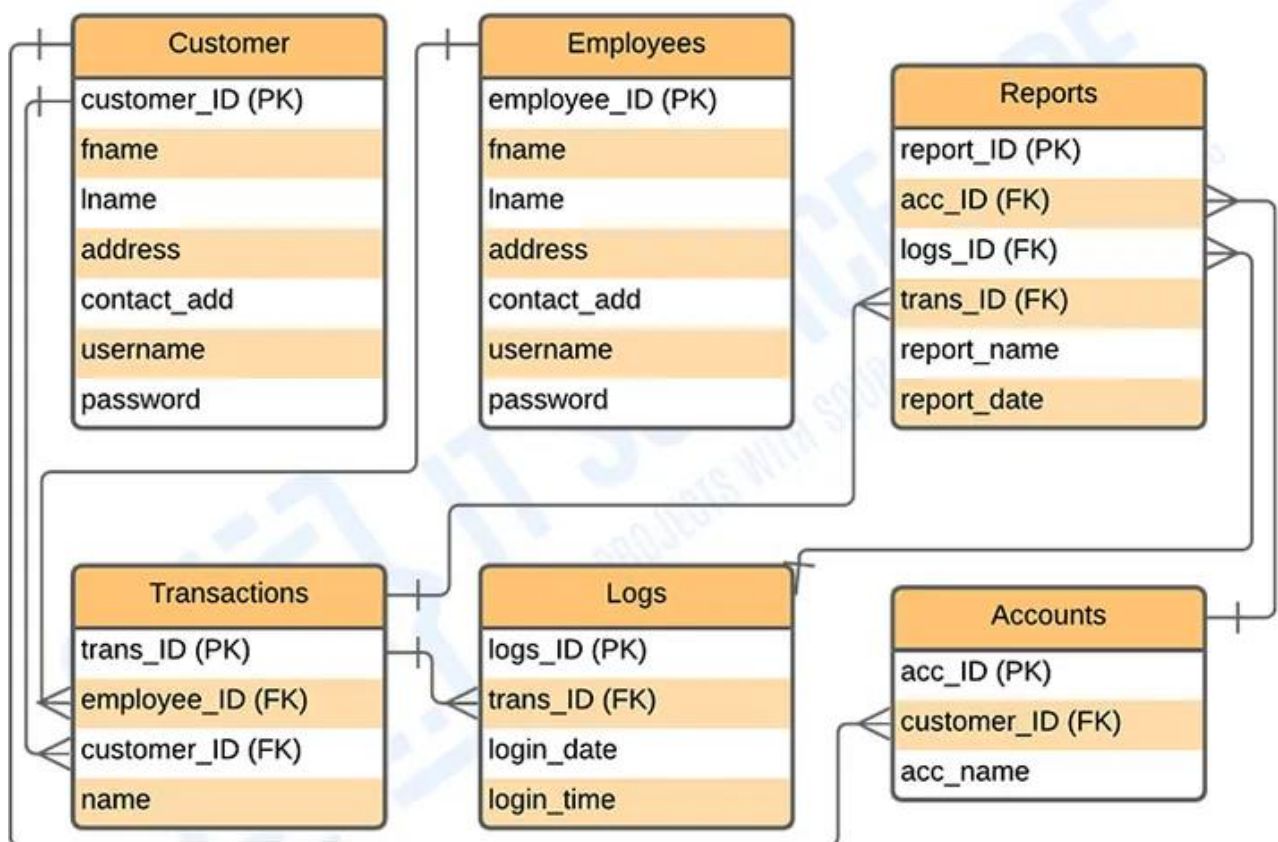

BANK MANAGEMENT SYSTEM

ACTIVITY DIAGRAM

ER Diagram :

This diagram shows the design of the system's database. This design could be applied at the back end of the system development. It also serves as the design for the data storage that the system needs. It secures all the essential data in the system and preserves them for important task or when needed.
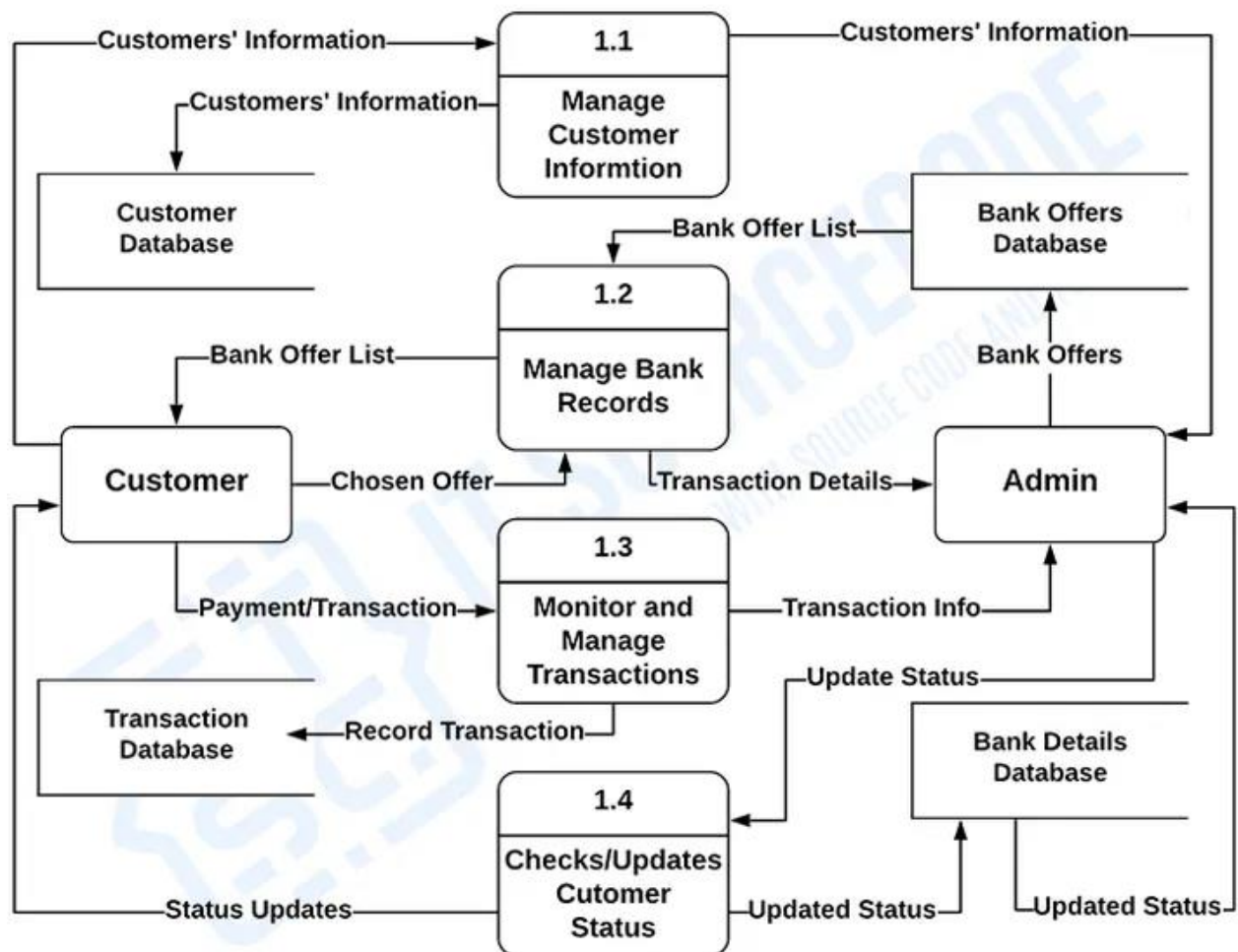

BANK MANAGEMENT SYSTEM

ENTITY RELATIONSHIP DIAGRAM

Data Flow Diagrams Level :

As addition to the diagrams that will be a big help in doing your Project is the Dataflow Diagram. It does not belong to the UML diagrams but it also helps in knowing more about the Bank Management System. So the DFD serves as an illustration of the systems data handling. As you can see, this DFD design is in level 2, it has levels 0,1 and 2 but the most complex and wider among the 3 is the level 2. So here you will see the main processes included. You may relate these processes from your use case Diagram.

BANK MANAGEMENT SYSTEM

DATA FLOW DIAGRAM LEVEL 2

Tools Used for draw UML Diagrams :

To design your UML diagram, you may use platforms and editing tools online. These tools are helpful since they already have the needed symbols to illustrate your diagrams. You just have to plot the included symbols, arrows and labels. The platforms or online tools that you may use are:

- Lucidchart
- Creately
- Smartdraw
- Edrawmax
- Canva

Conclusion:

As a whole, the UML Diagrams works together to achieve the most desired functions of the Bank Management System Project. All of these were designed to guide programmers and beginners about the behavior and structure of Bank Management System.