20BCS019-QUIZ-1-DBMS
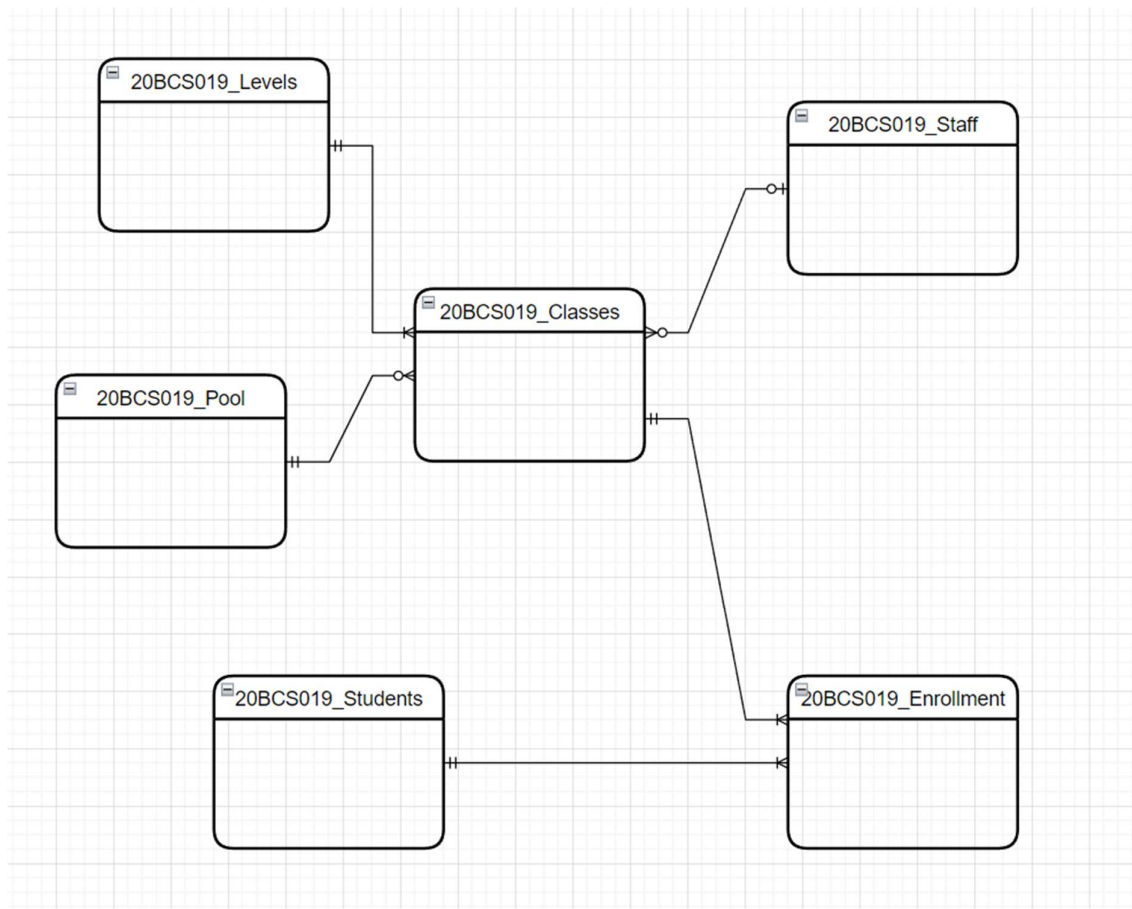
Name – Annamaneni Rohit
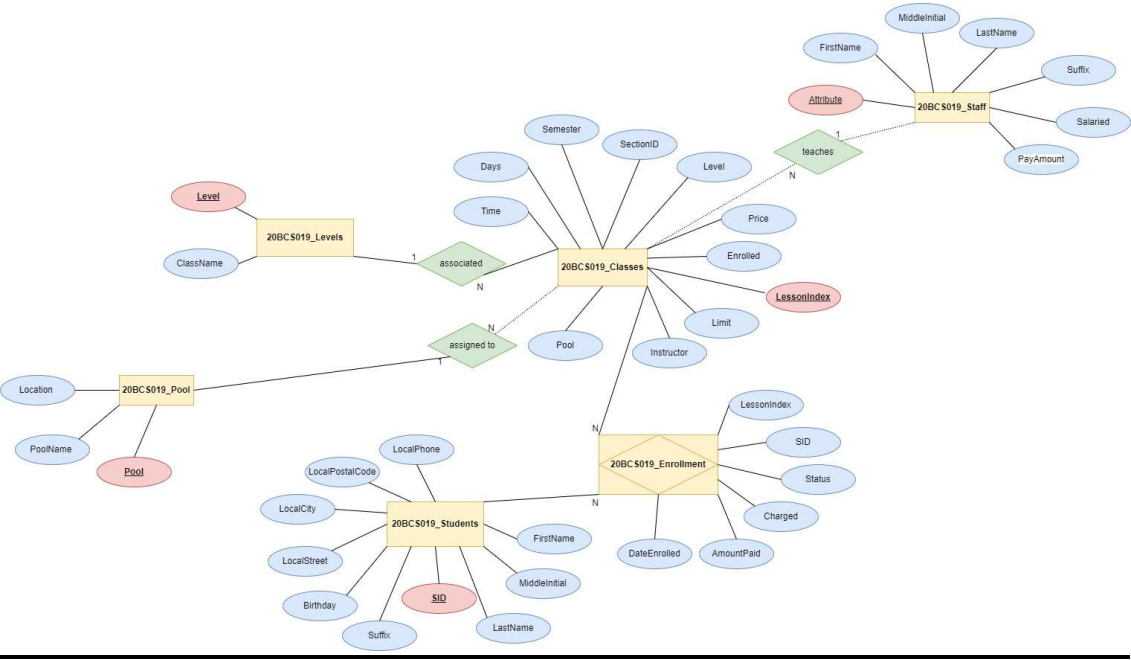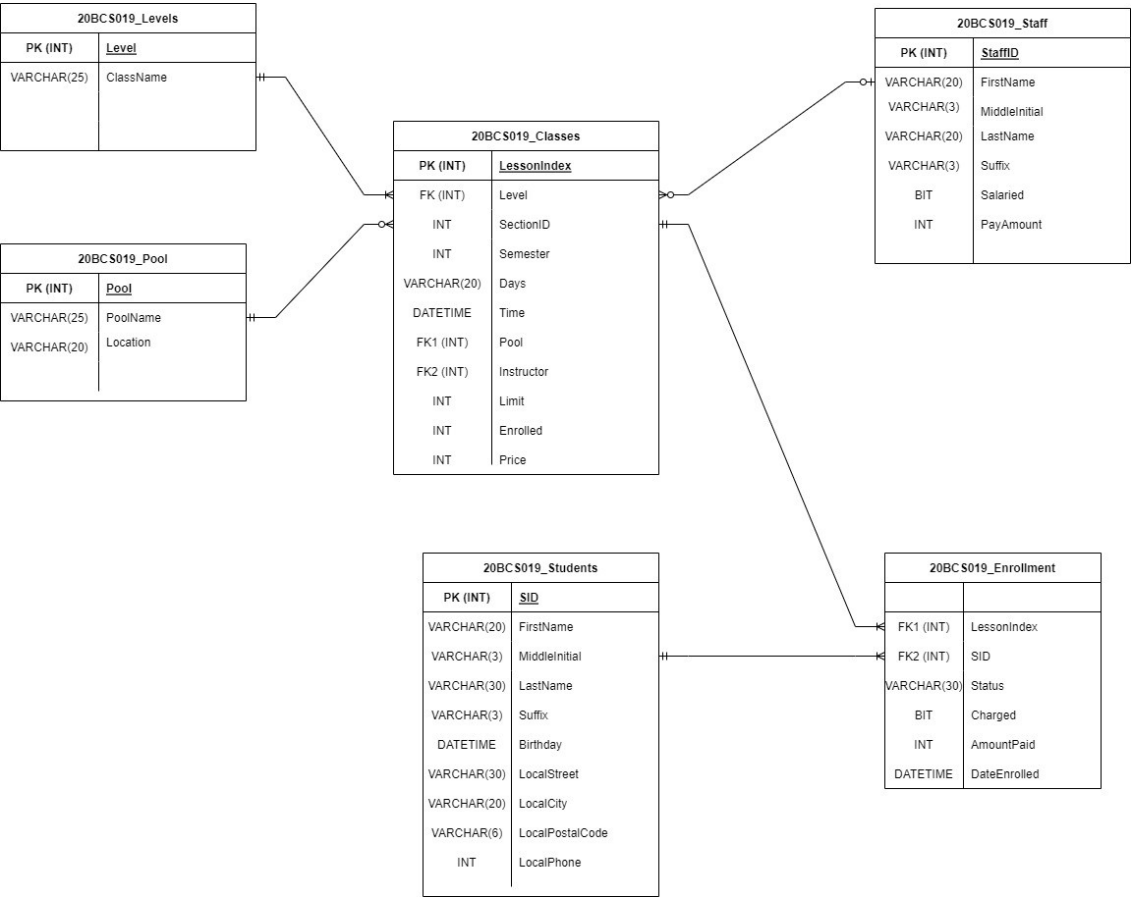
Roll Number – 20BCS019

2)

CONEPTUAL DIAGRAM

PHYSICAL DIAGRAM (ERD)

20BCS019_Levels

PK (INT)	Level
VARCHAR(25)	ClassName

20BCS019_Pool

PK (INT)	Pool
VARCHAR(25)	PoolName
VARCHAR(20)	Location

20BCS019_Classes

PK (INT)	LessonIndex
FK (INT)	Level
INT	SectionID
INT	Semester
VARCHAR(20)	Days
DATETIME	Time
FK1 (INT)	Pool
FK2 (INT)	Instructor
INT	Limit
INT	Enrolled
INT	Price

20BCS019_Staff

PK (INT)	StaffID
VARCHAR(20)	FirstName
VARCHAR(3)	MiddleInitial
VARCHAR(20)	LastName
VARCHAR(3)	Suffix
BIT	Salaried
INT	PayAmount

20BCS019_Students

PK (INT)	SID
VARCHAR(20)	FirstName
VARCHAR(3)	MiddleInitial
VARCHAR(30)	LastName
VARCHAR(3)	Suffix
DATETIME	Birthday
VARCHAR(30)	LocalStreet
VARCHAR(20)	LocalCity
VARCHAR(6)	LocalPostalCode
INT	LocalPhone

20BCS019_Enrollment

FK1 (INT)	LessonIndex
FK2 (INT)	SID
VARCHAR(30)	Status
BIT	Charged
INT	AmountPaid
DATETIME	DateEnrolled

2)

Schema

20BCS019_Levels (<u>Level</u>, ClassName **)**

20BCS019_Pool (<u>Pool,</u> PoolName, Location **)**

20BCS019_Classes(<u>LessonIndex</u>, Level, SectionID, , Semester, Days, Time, Pool, Instructor, Limit, Enrolled, Price)

20BCS019_Staff(<u>StaffID,</u> FirstName, MiddleInitial, LastName, Suffix, Salaried, PayAmount)

20BCS019_Enrollment(LessonIndex, SID, Status, Charged, AmountPaid, DateEnrolled)

20BCS019_Students(<u>SID,</u> FirstName, MiddleInitial, LastName, Suffix, Birthday, LocalStreet, LocalCity, LocalPostalCode, LocalPhone)

Cardinality

20BCS019_Staff – 20BCS019_Classes => **optional one to optional many**

20BCS019_levels – 20BCS019_Classes => **Mandatory one to mandatory many**

20BCS019_classes – 20BCS019_pools => **optional many to mandatory one**

20BCS019_Enrollment – 20BCS019_Students = > **mandatory many to mandatory one**

20BCS019_Enrollment – 20BCS019_Classes => **mandatory one to mandatory many**

4) 20BCS019_Enrollment is a weak entity because it needs the foreign keys from its parents (20BCS019_Classes, 20BCS019_Students) to identify its instances. Another primary key cannot be added to this entity to make it strong as it can have NULL foreign keys without the existence of its parent instances and can violate data integrity.

5) In this ER Diagram, there is no visible data redundancies as the only duplicate attributes present are foreign keys.