Group Members:

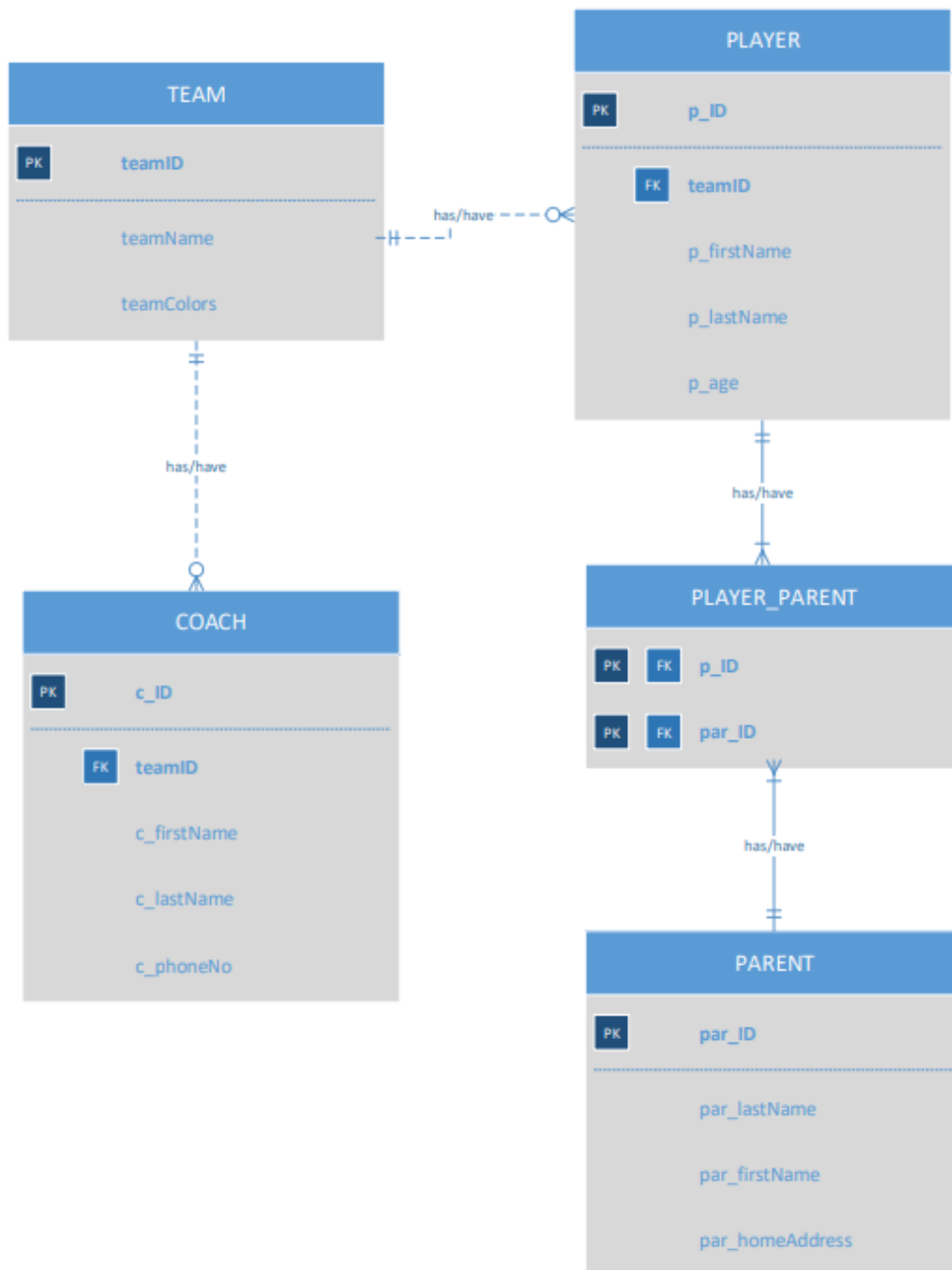Muhammad Izham Bin Norhamadi, B032020039, BITZ, S2G1

Ahmad Sha Herizam Bin Tahir, B032020009, BITZ, S2G1

Affendy Elyas Bin Azhari Sharidan, B032020024, BITZ, S2G1

Muhamad Nur Haziq Bin Ainorazahar, B032020034, BITC, S2G1

Question 1

Entity	Relationship	Connectivity	Entity
TEAM	Has/have	0:M	PLAYER
PLAYER	Has/have	1:1	TEAM
TEAM	Has/have	0:M	COACH
COAH	Has/have	1:1	TEAM
PLAYER	Has/have	M:N	PARENT

TEAM

PK	**teamID**
	teamName
	teamColors

PLAYER

PK	**p_ID**
FK	**teamID**
	p_firstName
	p_lastName
	p_age

has/have

COACH

PK	**c_ID**
FK	**teamID**
	c_firstName
	c_lastName
	c_phoneNo

has/have

PLAYER_PARENT

PK	FK	**p_ID**
PK	FK	**par_ID**

has/have

PARENT

PK	**par_ID**
	par_lastName
	par_firstName
	par_homeAddress

Question 2

Entity	Relationship	Connectivity	Entity
PUBLISHER	Publish	0:M	BOOK
BOOK	Published by	1:1	PUBLISHER
BOOK	Written by	M:N	AUTHOR

AUTHOR_BOOK
PK FK AuthorNumber
PK FK ISBN

Written by

Writes

AUTHOR
PK AuthorNumber
Name
DateOfBirth

BOOK
PK ISBN
FK PublisherID
Title
Price
DateOfPublication

Publish

PUBLISHER
PK PublisherID
Name

Question 3

Entity	Relationship	Connectivity	Entity
PAINTER	paint	1:M	PAINTING
PAINTING	painted by	1:1	PAINTER
PAINTING	exhibit	0:1	GALLERY
GALLERY	exhibit by	1:M	PAINTING

PAINTER

PK	painter_No
	painter_FName
	painter_LName
	painter_AreaCode
	painter_PhoneNo

paint/painted by

PAINTING

PK	painting_No
	painting_Title
	painting_Price
FK	painter_No
FK	gallery_No

exhibit/exhibited by

GALLERY

PK	gallery_No
	gallery_Owner
	gallery_AreaCode
	gallery_PhoneNo
	gallery_Rate
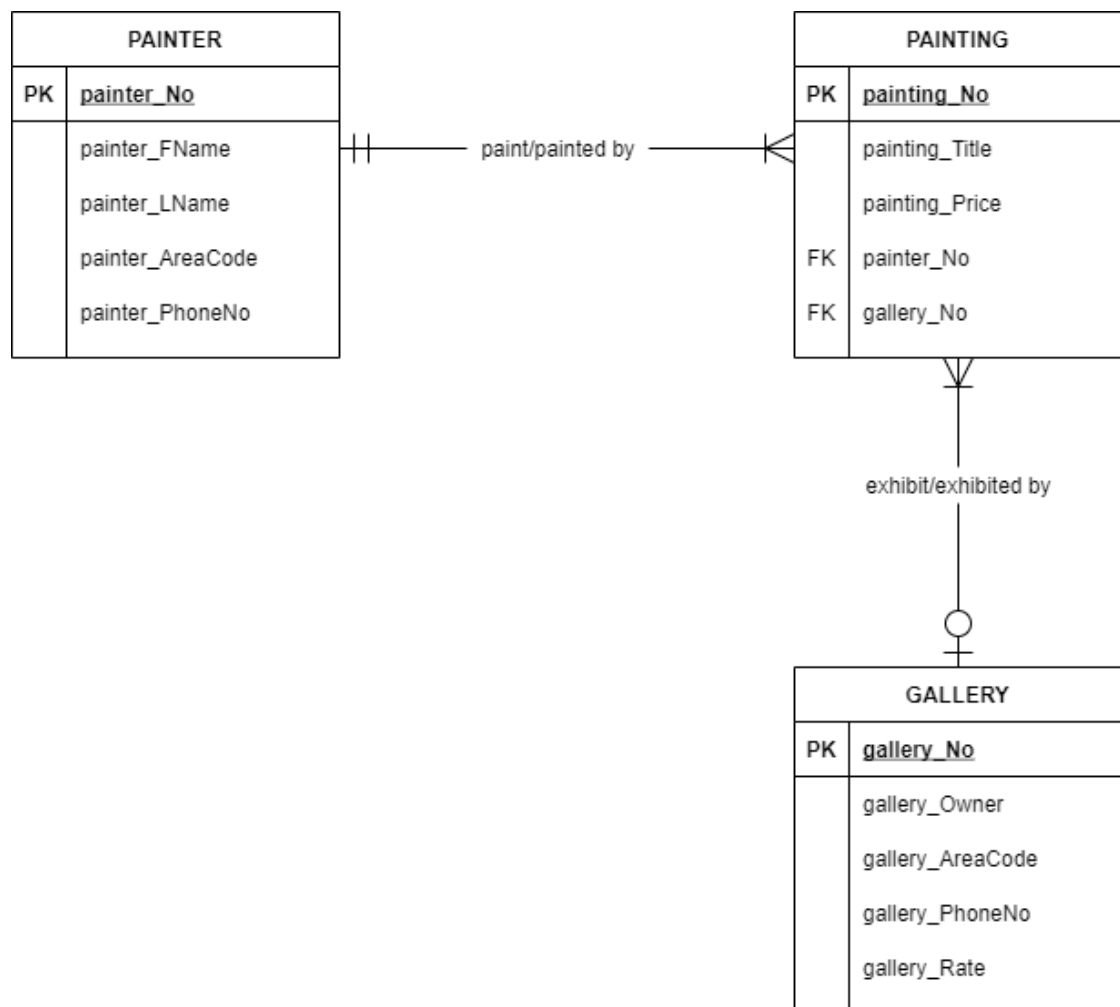
Question 4

Entity	Relationship	Connectivity	Entity
SUBJECT	Taught by	1:M	LECTURER
LECTURER	teaches	1:M	SUBJECT
LECTURER	Belong to	1:1	DEPARTMENT
DEPARTMENT	have	1:M	LECTURER

LECTURER_SUBJECT

PK FK Lecturer_Number

PK FK Subject_Code

— teaches — **LECTURER**

PK Lecturer_Number

Lecturer_Name

Lecturer_Grade

FK Department_Code

teached

SUBJECT

PK Subject_Code

Subject_Name

Subject_Category

belong/have

DEPARTMENT

PK Department_Code

Department_Name
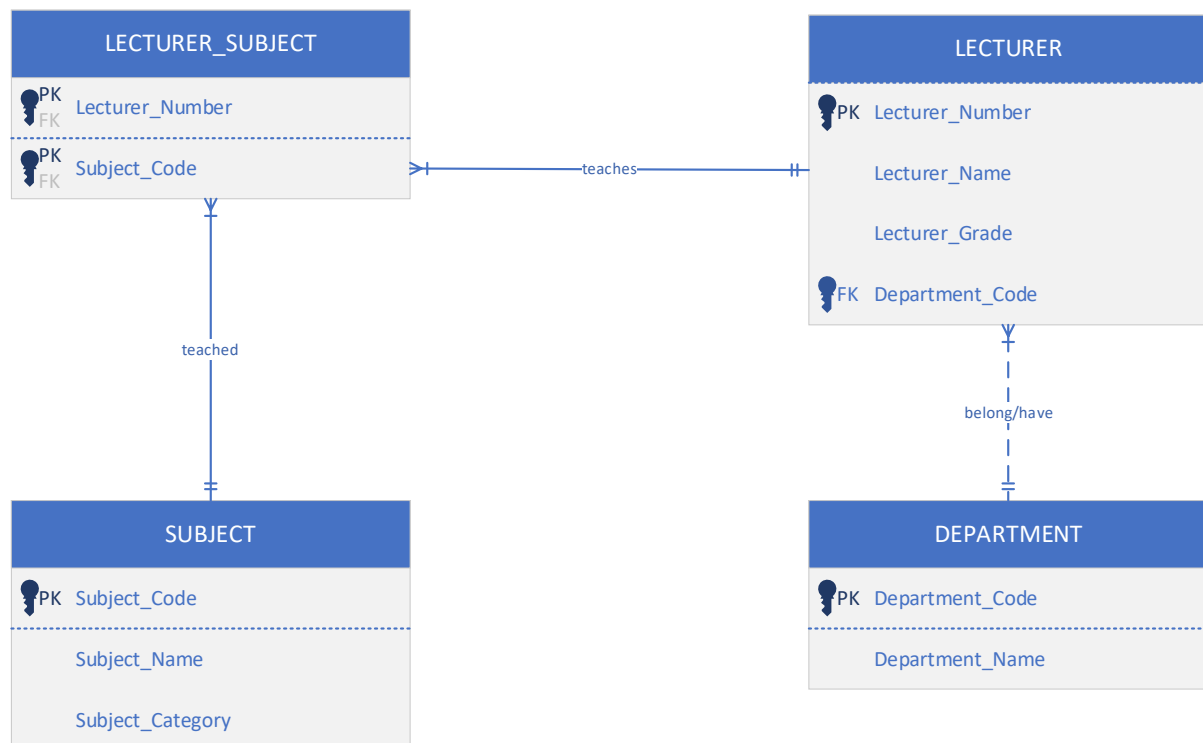
Question 5

Entity	Relationship	Connectivity	Entity
COURSE	generate	0:M	CLASS
CLASS	generated by	1:1	COURSE
INSTRUCTOR	teach	0:M	CLASS
CLASS	teached by	1:1	INSTRUCTOR
INSTRUCTOR	handle	0:M	TRAINEE
TRAINEE	handled by	1:1	INSTRUCTOR
TRAINEE	take	0:M	CLASS
CLASS	taken by	1:1	TRAINEE
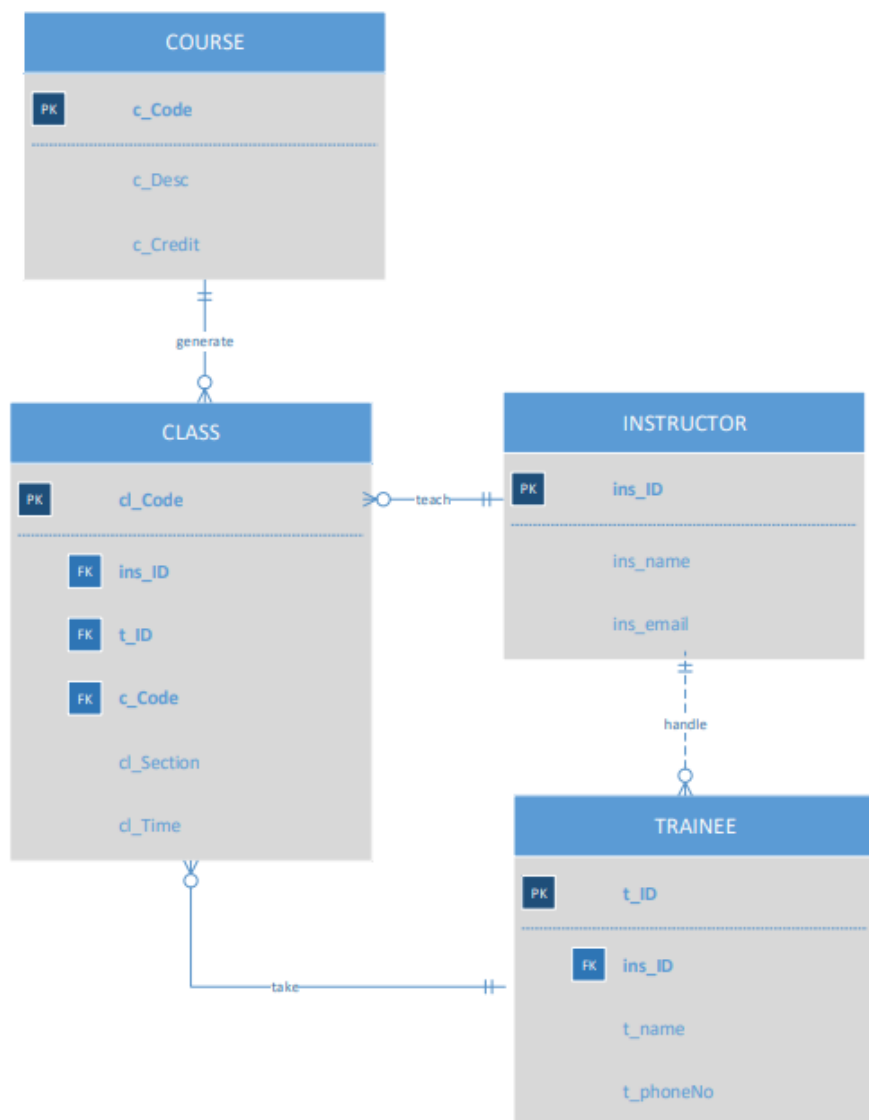
Describe the relationship between instructor and course in terms of connectivity, cardinality, and existence dependence.

Each course can generate several classes which is one class can be taught by one instructor only and instructor can teach up to two classes or assigned to do research. Yes, it is has existence dependence. Instructor entity cannot exist if course entity is not exist too and vice versa because class that instructor teach is being generated by the course entity.

Question 6

Entity	Relationship	Connectivity	Entity
ENTREE	Serves	1:M	DINNER
DINNER	Served with	1:1	ENTREE
DINNER	Attended by	M:N	GUEST
GUEST	Invited by	M:N	INVITATION

GUEST_DINNER
- PK FK Guest_ID
- PK FK Dinner_ID
- AttendTime

DINNER
- PK Dinner_ID
- Name
- Date

ENTREE
- PK Entree_ID
- Name

Attended by

Serves

Attends

GUEST
- PK Guest_ID
- Name
- PhoneNumber

GUEST_INVITATION
- PK FK Guest_ID
- PK FK Invite_ID

INVITATION
- PK Invite_ID
- Title
- InviterName

Invited by

Invites
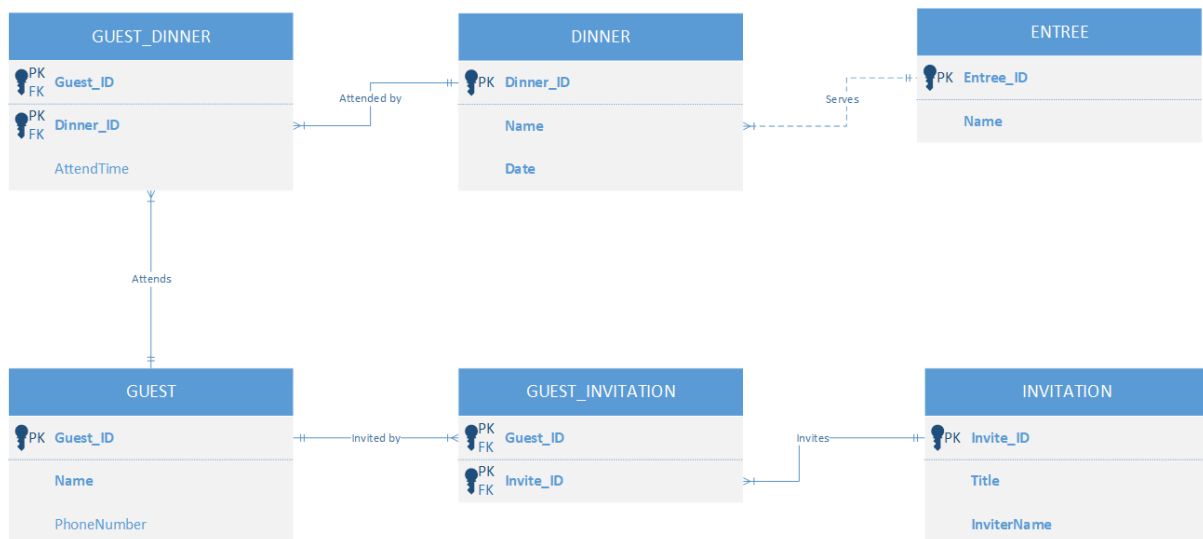
Question 7

Entity	Relationship	Connectivity	Entity
PROJECT	assigned by	M:N	EMPLOYEE
EMPLOYEE	assign	M:N	PROJECT
EMPLOYEE	employed by	1:1	DEPARTMENT
EMPLOYEE	run	1:1	DIVISION
EMPLOYEE	have	0:M	DEPENDENT
DEPARTMENT	employed by	0:M	EMPLOYEE
DEPARTMENT	Operated by	1:1	DIVISION
DIVISION	operate	1:M	DEPARTMENT
DIVISION	Run by	1:1	EMPLOYEE
DEPENDENT	Belong to	1:1	EMPLOYEE

PROJECT

PK	project_No
	project_Name

EMPLOYEE_PROJECT

PK,FK1	employee_Id
PK,FK2	project_No

assigned by

assign

DEPARTMENT

PK	department_No
	department_Name
FK	division_No

employ/employed by

EMPLOYEE

PK	employee_Id
	employee_Name
	employee_DOB
	employee_PhoneNo
FK	department_No
FK	division_No

operate/operated by

run/run by

have/belong to

DIVISION

PK	division_No
	division_Name

DEPENDENT

PK	dependent_Id
	dependent_Name
	dependent_PhoneNo
FK	employee_Id

Question 8

Entity	Relationship	Connectivity	Entity
BRANCH	register/registered by	1:M	CUSTOMER
CUSTOMER	register/registered by	1:M	BRANCH
BRANCH	Has/have	1:M	STAFF
STAFF	HAS/HAVE	1:M	BRANCH
BRANCH	HAS/HAVE	M:M	VIDEO
VIDEO	HAS/HAVE	M:M	BRANCH
VIDEO	MANAGED BY	M:M	STAFF
STAFF	MANAGE	M:M	VIDEO
CUSTOMER	RENTS/RENTED BY	0:M	RENTAL

BRANCH

PK	Branch_Number
	Branch_Address
	Branch_TelephoneNumber
FK	Copy_Number

STAFF

PK	Staff_Number
	Staff_Name
	Staff_Position
	Staff_Salary
FK	Branch_Number

COPY

PK	Copy_Number
	Copy_Category
FK	Video_Number
FK	Branch_Number

CUSTOMER

PK	Customer_MemberNumber
	Customer_FirstName
	Customer_LastName
	Customer_Address
	Customer_Date
FK	Branch_Number

VIDEO

PK	Video_Number
	Video_Title
	Video_Category
	Video_DailyRental
	Video_Cost
	Video_Status
	Video_MainActors
	Video_Director
	Video_Category
	Video_Status

RENTAL

PK	Rental_Number
	Full_Name
	Number_Of_Member
	Daily_Rental
	Rental_Date
	Video_Title
	Rental_Return
FK	Video_Number
FK	Customer_MemberNumber
FK	Staff_Number

has/have

register/registered by

has/have

has/have

manage

rents [0,10]

managed by