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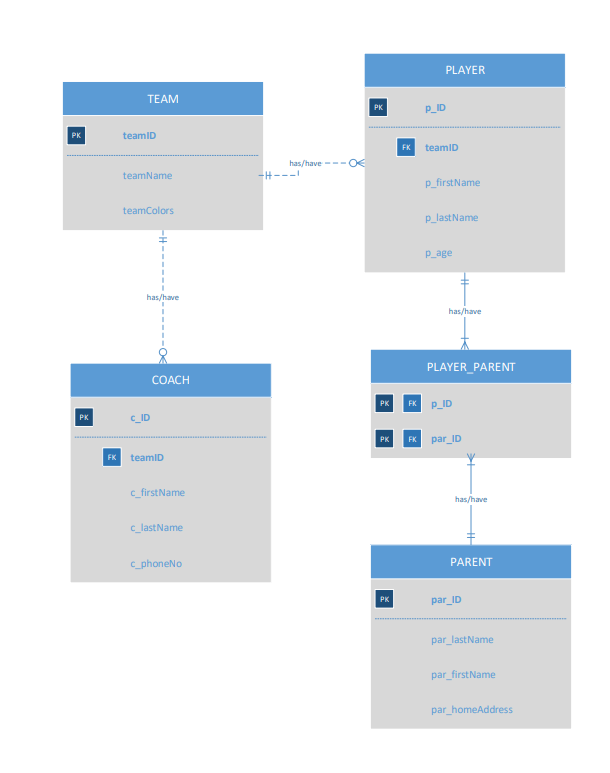
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### Question 1

|  |  |  |  |
| --- | --- | --- | --- |
| 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 |



### Question 2

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

Graphical user interface, application, Teams

Description automatically generated

### 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 |

Diagram

Description automatically generated

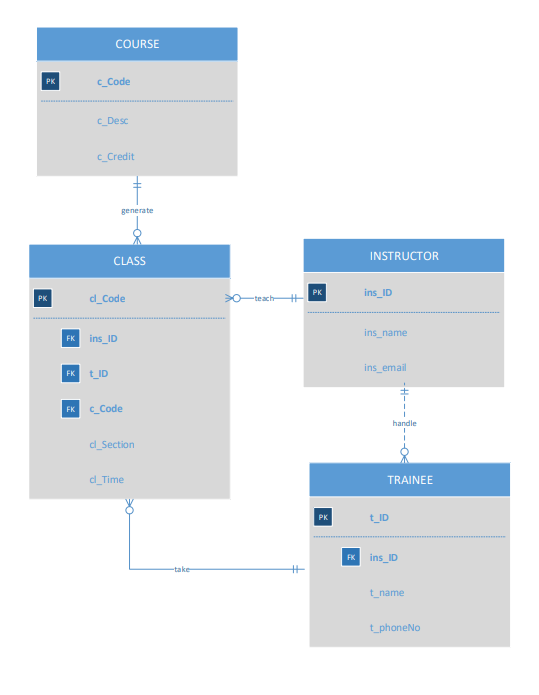
### Question 4

|  |  |  |  |
| --- | --- | --- | --- |
| 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 |



### 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 |

Graphical user interface

Description automatically generated

### 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 |

Diagram

Description automatically generated

### 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 |

