Employee

|  |  |  |
| --- | --- | --- |
| Attribute | Data type | Justification |
| Emp\_id | Integer | Numbers only and smallint won’t work in the long term. |
| Emp\_fname | Varchar(20) | First names generally aren’t longer than 20 characters |
| Emp\_lname | Varchar(20) | Last names generally aren’t longer than 20 characters |
| Emp\_bdate | Date | It’s a date |
| Emp\_address | Varchar(100) | Includes street address and suburb |
| Gender | Char(1) | It’s a one-character variable (M, F or U) |
| Dept\_id | Integer | Numbers only. Don’t know how many departments there are. |
| Super\_id | Integer | Emp\_id of superior.  Can be null. The boss doesn’t have a superior? |

Department

|  |  |  |
| --- | --- | --- |
| Attribute | Data type | Justification |
| Dept\_id | Integer | Numbers only. Don’t know how many departments there are. |
| Dept\_name | Varchar(100) | Department names can be long. Department of Environment, Land, Water and Planning has 51 characters. |
| Mgr\_id | Integer | Numbers only. Don’t know how many departments there are. |
| Mgr\_start\_date | Date | It’s a date |

Project

|  |  |  |
| --- | --- | --- |
| Attribute | Data type | Justification |
| Proj\_id | Integer | Numbers only. Don’t know how many projects there are are. |
| Proj\_name | Varchar(20) | Project names shouldn’t be too long. |
| Proj\_loc | Varchar(100) | Either include street address and suburb or just the city. |
| Dept\_id | Integer | Numbers only. Don’t know how many departments there are. |

Works\_on

|  |  |  |
| --- | --- | --- |
| Attribute | Data type | Justification |
| Proj\_id | Integer | Numbers only. Don’t know how many projects there are. |
| Emp\_id | Integer | Numbers only and smallint won’t work in the long term. |
| Role | Varchar(20) | Name of the role |
| Comment | Varchar(255) | A brief description on their role and responsibilities.  Can be null. |
| Hours | Smallint | Hours spent on a project shouldn’t exceed smallint unless it’s a lifetime project. |
| Salary\_factor | Decimal(5,2) | Percentage of additional remuneration for working in their role.  Check constraint (0.00% to 100.00%)  Se the default to 0.00% |

Salary

|  |  |  |
| --- | --- | --- |
| Attribute | Data type | Justification |
| Emp\_id | Integer | Numbers only and smallint won’t work in the long term. |
| Salary | Decimal(10,2) | Don’t think anyone has an eight-figure annual salary. |
| Start\_date | Date | It’s a date |

|  |  |
| --- | --- |
| Relation | Primary key |
| Employee | Emp\_id |
| Department | Dept\_id |
| Project | Proj\_id |
| Works\_on | Proj\_id, emp\_id |
| Salary | Emp\_id |

|  |  |  |
| --- | --- | --- |
| Relation | Foreign Key | References |
| Employee | Dept\_id | Department.dept\_id |
| Works\_on | Proj\_id, emp\_id | Project.proj\_id, Employee.emp\_id |
| Salary | Emp\_id | Employee.emp\_id |

CREATE DATABASE test;

USE test;

CREATE TABLE Department

(

dept\_id INT unsigned not null,

dept\_name VARCHAR(100) not null,

mgr\_id INT unsigned not null,

mgr\_start\_date DATE not null,

PRIMARY KEY(dept\_id)

);

CREATE TABLE Employee

(

emp\_id INT unsigned not null,

emp\_fname VARCHAR(20) not null,

emp\_lname VARCHAR(20) not null,

emp\_bdate DATE not null,

emp\_address VARCHAR(100) not null,

gender CHAR(1) CHECK(gender='M' OR gender='F' OR gender='U'),

dept\_id INT unsigned not null,

super\_id INT unsigned,

PRIMARY KEY(emp\_id),

FOREIGN KEY(dept\_id) REFERENCES Department(dept\_id)

);

CREATE TABLE Project

(

proj\_id INT unsigned not null,

proj\_name VARCHAR(20) not null,

proj\_loc VARCHAR(100) not null,

dept\_id INT unsigned not null,

PRIMARY KEY(proj\_id)

);

CREATE TABLE Works\_on

(

proj\_id INT unsigned not null,

emp\_id INT unsigned not null,

role VARCHAR(20) not null,

comment VARCHAR(255),

hours SMALLINT unsigned not null,

salary\_factor DECIMAL(5,2) DEFAULT 0.00 CHECK (salary\_factor>=0.00 AND salary\_factor<=100.00),

PRIMARY KEY(proj\_id, emp\_id),

FOREIGN KEY(proj\_id) REFERENCES Project(proj\_id),

FOREIGN KEY(emp\_id) REFERENCES Employee(emp\_id)

);

CREATE TABLE Salary

(

emp\_id INT unsigned not null,

salary DECIMAL(10,2) unsigned not null,

start\_date DATE not null,

PRIMARY KEY(emp\_id),

FOREIGN KEY(emp\_id) REFERENCES Employee(emp\_id)

);