**ProKarma Boot Camp – Data Bases**

Day3 - Instructions and Assignments

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**E-R Diagram:**

[\*] Document the E-R Diagram in a word doc explaining each table and its relationship with other tables in the database. Your document should explain the entire database architecture in a precise manner.

Timeline

Description automatically generated

**Database architecture:**

The database named ‘dbo’ consists on 13 tables, named as following: (mysql> SHOW TABLES;)

[\*] Tables\_in\_dbo:

[1] **course\_data\_external**

[2] **examschedule**

[3] **tblcentremaster**

[4] **tbldesignations**

[5] **tblemployees**

[6] **tblemployeetypes**

[7] **tbllocations**

[8] **tblpayemployeeparamdetails**

[9] **tblpayemployees**

[10] **tblpaymaster**

[11] **tblservicestatus**

[12] **tblservicetypes**

[13] **tblstatemaster**

**Detailed table description:**

[1] **course\_data\_external:** 12 fieldscontaining information related to external course institution participant related data. Among its fields, they can be found:

|  |  |  |
| --- | --- | --- |
| Field name | Data type and Definition | Description |
| Institution | varchar(20) DEFAULT NULL | Institution identifier |
| Course\_Number | varchar(20) DEFAULT NULL | Course identifier |
| LaunchDate | date DEFAULT NULL | Course launch date |
| CourseTitle | varchar(50) DEFAULT NULL | Course title |
| Instructors | varchar(20) DEFAULT NULL | Designated instructors |
| Year | int DEFAULT NULL | Launch year |
| Participants | int DEFAULT NULL | Number of participants |
| Certified | int DEFAULT NULL | Certification number |
| TotalCourseHours | int DEFAULT NULL | Course duration |
| MedianAge | int DEFAULT NULL | Median age of participants |
| Male | int DEFAULT NULL | Number of males |
| Female | int DEFAULT NULL | Number of females |

ENGINE=InnoDB EFAULT CHARSET=utf8mb4 COLLATE=utf8mb4\_0900\_ai\_ci

No Primary Key or Foreign key definition (Relation with the other table(s) not established yet)

[2] **examschedule:** 3 fieldscontaining information related to external course number and initial and final dates. Among its fields, can be found:

|  |  |  |
| --- | --- | --- |
| Field name | Data type and Definition | Description |
| ClassNo | int DEFAULT NULL | Class identifier |
| DateFrom | datetime DEFAULT NULL | Class starting date |
| DateTo | datetime DEFAULT NULL | Class ending date |

ENGINE=InnoDB DEFAULT CHARSET=latin1;

No Primary Key or Foreign key definition (Relation with the other table(s) not established yet)

[3] **tblcentremaster:** 29 fieldscontaining information related to center master related data. Among its fields, they can be found:

|  |  |  |
| --- | --- | --- |
| Field name | Data type and Definition | Description |
| RefNoteNumber | char(25) DEFAULT NULL | Note Number |
| CentreCode | int NOT NULL | Center identifier |
| CentreName | varchar(50) DEFAULT NULL |  |
| StartDate | datetime NOT NULL |  |
| DistrictCode | smallint DEFAULT NULL |  |
| SectorCode | smallint DEFAULT NULL |  |
| ZoneCode | smallint NOT NULL |  |
| CentreCategory | smallint NOT NULL |  |
| CentreType | varchar(50) DEFAULT NULL |  |
| PFNumber | varchar(25) DEFAULT NULL |  |
| StorageCapacity | int DEFAULT NULL |  |
| LicenceNumber | varchar(25) DEFAULT NULL |  |
| IssueDate | datetime NOT NULL |  |
| AddressCode | smallint DEFAULT NULL |  |
| AgreementCode | varchar(15) DEFAULT NULL |  |
| CompanyCode | smallint NOT NULL |  |
| DivisionCode | tinyint unsigned NOT NULL |  |
| AreaCode | tinyint unsigned DEFAULT NULL |  |
| LeafAvailability | varchar(10) DEFAULT NULL |  |
| Accomodation | tinyint(1) DEFAULT NULL | Accomodation type |
| ESIApplicable | tinyint(1) DEFAULT NULL |  |
| IsOwnCentre | tinyint(1) DEFAULT NULL |  |
| ThumbAttendance | tinyint(1) DEFAULT NULL |  |
| Period | tinyint unsigned DEFAULT NULL |  |
| CentreSize | varchar(10) DEFAULT NULL |  |
| PackingType | char(1) DEFAULT NULL |  |
| RollerWiseBidiType | char(1) DEFAULT NULL |  |
| CentreClosed | tinyint unsigned DEFAULT NULL |  |

ENGINE=InnoDB DEFAULT CHARSET=latin1;

PRIMARY KEY (CentreCode)

FOREIGN KEYS (RefNoteNumber)

Relation with tables:

tblpaymaster(CentreCode(FK), NoteNumber(PK))

tblemployees(CentreCode(FK))

tblpayemployees(CentreCode(FK))

[4] **tbldesignations:** 7 fieldscontaining information related to employee designation related data. Among its fields, there can be found:

|  |  |  |
| --- | --- | --- |
| Field name | Data type and Definition | Description |
| KeyDesignationCode | smallint NOT NULL | Employee designation code |
| Description | varchar(100) DEFAULT NULL | Designation description |
| CategoryCode | tinyint unsigned NOT NULL | Category of the code |
| ServiceType | tinyint unsigned NOT NULL | Type of service |
| EmployeeType | tinyint unsigned NOT NULL | Type of Employee |
| HigherDesgnCode | smallint DEFAULT NULL | Code of Higher designation |
| AppraisalForm | tinyint unsigned NOT NULL | Appraisal form information |

ENGINE=InnoDB DEFAULT CHARSET=latin1;

PRIMARY KEY (DesignationCode)

FOREIGN KEYS(ServiceType, EmployeeType)

Relation with tables:

tblpayemployees(DesignationCode(FK))

tblemployeetypes(EmployeeType(PK))

tblservicetypes(ServiceType(PK))

tblemployees(DesignationCode (FK))

[5] **tblemployees:** 62 fieldscontaining information related to employee related data. Among its fields, they can be found:

|  |  |  |
| --- | --- | --- |
| Field name | Data type and Definition | Description |
| LetterNumber | varchar(25) DEFAULT NULL |  |
| LetterDate | datetime DEFAULT NULL |  |
| DOJ | datetime NOT NULL | Date Of Join |
| EmployeeNumber | int NOT NULL |  |
| CentreCode | int NOT NULL |  |
| BranchCode | int DEFAULT NULL |  |
| CategoryCode | tinyint unsigned NOT NULL |  |
| DepartmentCode | smallint DEFAULT NULL |  |
| SectionCode | smallint DEFAULT NULL |  |
| EmployeeType | tinyint unsigned NOT NULL |  |
| ServiceType | tinyint unsigned NOT NULL |  |
| ServiceStatus | tinyint unsigned NOT NULL |  |
| OfficiatingDesignationCode | smallint DEFAULT NULL |  |
| FatherName | varchar(30) DEFAULT NULL |  |
| DOB | datetime DEFAULT NULL |  |
| CertificateType | tinyint unsigned DEFAULT NULL |  |
| CertificateNo | varchar(25) DEFAULT NULL |  |
| CertificateDate | datetime DEFAULT NULL |  |
| Age | tinyint unsigned DEFAULT NULL |  |
| Sex | char(1) DEFAULT NULL | F/M |
| LicenceNumber | varchar(25) DEFAULT NULL |  |
| ExpiryDate | datetime DEFAULT NULL |  |
| Name | varchar(50) DEFAULT NULL |  |
| NickName | varchar(50) DEFAULT NULL |  |
| MaritalStatus | tinyint unsigned DEFAULT NULL |  |
| Religion | tinyint unsigned DEFAULT NULL |  |
| Nationality | tinyint unsigned DEFAULT NULL |  |
| ExtraCurricum | varchar(400) DEFAULT NULL |  |
| MotherLanguage | tinyint unsigned DEFAULT NULL |  |
| ApplicationNumber | int DEFAULT NULL |  |
| ApplicationDate | datetime DEFAULT NULL |  |
| LocationType | tinyint unsigned NOT NULL |  |
| LocationCode | int DEFAULT NULL |  |
| FunctionalDesignation | smallint NOT NULL |  |
| DesignationCode | smallint NOT NULL |  |
| IsActive | char(1) NOT NULL |  |
| IsFDActive | tinyint(1) DEFAULT NULL |  |
| ReportingToFD | smallint DEFAULT NULL |  |
| DeputationLocationType | smallint DEFAULT NULL |  |
| DeputationLocationCode | int DEFAULT NULL |  |
| ConfirmDate | datetime DEFAULT NULL |  |
| DivisionCode | tinyint unsigned NOT NULL |  |
| SectorCode | smallint NOT NULL |  |
| GodownCode | smallint DEFAULT NULL |  |
| AreaCode | tinyint unsigned NOT NULL |  |
| PANNumber | varchar(25) DEFAULT NULL |  |
| IssueDate | datetime DEFAULT NULL |  |
| JoiningBasic | decimal(12,2) DEFAULT NULL |  |
| PresentBasic | decimal(12,2) DEFAULT NULL |  |
| StatusCode | tinyint unsigned DEFAULT NULL |  |
| IsMPBuffer | tinyint(1) DEFAULT NULL |  |
| OwnResidence | tinyint(1) DEFAULT NULL |  |
| TerminationStatus | tinyint(1) DEFAULT NULL |  |
| IsSuspended | tinyint(1) DEFAULT NULL |  |
| RetirementDate | datetime DEFAULT NULL |  |
| SeqNo | int NOT NULL |  |
| BloodGroup | varchar(10) DEFAULT NULL |  |
| InActiveNNo | varchar(25) DEFAULT NULL |  |

ENGINE=InnoDB DEFAULT CHARSET=latin1;

PRIMARY KEY(-No-)

FOREIGN KEYS(CentreCode, EmployeeType, ServiceType, ServiceStatus, LocationType, LocationCode, DesignationCode)

Relation with tables:

tblcentermaster(CentreCode(PK))

tbllocations(LocationType(PK), LocationCode(PK))

tblemployeetypes(EmployeeType(PK))

tbldesignations(DesignationCode(PK))

tblservicetypes(ServiceType(PK))

[6] **tblemployeetypes:** 2 fieldscontaining information related to employee type related data. Among its fields, there can be found:

|  |  |  |
| --- | --- | --- |
| Field name | Data type and Definition | Description |
| Key EmployeeType | tinyint unsigned NOT NULL |  |
| Description | ` varchar(15) NOT NULL |  |

ENGINE=InnoDB DEFAULT CHARSET=latin1;

PRIMARY KEY (`EmployeeType`)

Relation with tables:

tblpayemployees(EmployeeType (FK))

tbldesignations(EmployeeType (FK))

tblpayemployees(EmployeeType(FK))

[7] **tbllocations:** 7 fieldscontaining information related to locations related data. Among its fields, there can be found:

|  |  |  |
| --- | --- | --- |
| Field name | Data type and Definition | Description |
| Key LocationType | tinyint unsigned NOT NULL |  |
| LocTypeName | varchar(100) NOT NULL |  |
| Key LocationCode | int NOT NULL |  |
| LocCodeName | varchar(100) NOT NULL |  |
| HeadCentre | int DEFAULT NULL |  |

ENGINE=InnoDB DEFAULT CHARSET=latin1;

PRIMARY KEY (`LocationType`,`LocationCode`)

Relation with tables:

tblpaymaster(LocationType (FK), LocationCode (FK))

tblpayemployees(LocationType (FK), LocationCode (FK))

tblemployees(LocationType (FK), LocationCode (FK))

[8] **tblpayemployeeparamdetails:** 13 fieldscontaining information related to employee details related data. Among its fields, there can be found:

|  |  |  |
| --- | --- | --- |
| Field name | Data type and Definition | Description |
| NoteNumber | varchar(25) NOT NULL |  |
| EmployeeNumber | int NOT NULL |  |
| ParamCode | varchar(6) NOT NULL |  |
| TransValue | smallint DEFAULT NULL |  |
| ActualAmount | decimal(12,2) DEFAULT NULL |  |
| Amount | decimal(12,2) DEFAULT NULL |  |
| EmployerShare | decimal(12,2) DEFAULT NULL |  |
| PayType | char(1) DEFAULT NULL |  |
| EffectiveFrom | datetime DEFAULT NULL |  |
| CalculatedOn | decimal(15,2) DEFAULT NULL |  |
| PersonServiceStatus | tinyint unsigned DEFAULT NULL |  |
| ParamCalculationRate | decimal(15,2) DEFAULT NULL |  |
| EarnedCalculatedOn | decimal(15,2) DEFAULT NULL |  |

ENGINE=InnoDB DEFAULT CHARSET=latin1;

UNIQUE KEY `U\_PayEmployeeparamDetails` (`NoteNumber`,`EmployeeNumber`,`ParamCode`,`EffectiveFrom`,`PersonServiceStatus`)

FOREIGN KEYS(ServiceType, EmployeeType)

Relation with tables:

tblpaymaster(NoteNumber(PK))

tblservicestatus(ServiceStatus(PK))

[9] **tblpayemployees:** 35 fieldscontaining information related to employee type related data. Among its fields, there can be found:

|  |  |  |
| --- | --- | --- |
| Field name | Data type and Definition | Description |
| NoteNumber | varchar(25) NOT NULL |  |
| EmployeeNumber | int NOT NULL |  |
| LocationType | tinyint unsigned DEFAULT NULL |  |
| LocationCode | int DEFAULT NULL |  |
| GrossPay | decimal(12,2) DEFAULT NULL |  |
| Deductions | decimal(12,2) DEFAULT NULL |  |
| NetPay | decimal(12,2) DEFAULT NULL |  |
| ActualGrossPay | decimal(12,2) DEFAULT NULL |  |
| DesignationCode | smallint DEFAULT NULL |  |
| Servicetype | tinyint unsigned DEFAULT NULL |  |
| EmployeeType | tinyint unsigned DEFAULT NULL |  |
| ServiceStatus | tinyint unsigned DEFAULT NULL |  |
| CentreCode | int DEFAULT NULL |  |
| TotalPaidDays | decimal(6,2) DEFAULT NULL |  |
| LastPayAbsentDays | decimal(6,2) DEFAULT NULL |  |
| TotalWorkedDays | decimal(6,2) DEFAULT NULL |  |
| isPaid | tinyint(1) DEFAULT NULL |  |
| ActualPaidDays | decimal(6,2) DEFAULT NULL |  |
| ActualNet | decimal(12,2) DEFAULT NULL |  |
| Arrers | decimal(10,2) DEFAULT NULL |  |
| ArrersPaid | tinyint(1) DEFAULT NULL |  |
| EffectiveFrom | datetime DEFAULT NULL |  |
| EmpDays | decimal(5,2) DEFAULT NULL |  |
| SPPEDays | decimal(5,2) DEFAULT NULL |  |
| SPPEPdays | decimal(5,2) DEFAULT NULL |  |
| WagePaymentNNO | varchar(25) DEFAULT NULL |  |
| WagePaymentNoteNo | datetime DEFAULT NULL |  |
| PaymentPeriodDays | decimal(6,2) DEFAULT NULL |  |
| DaysAbsent | decimal(6,2) DEFAULT NULL |  |
| DayString | varchar(200) DEFAULT NULL |  |
| RollerBidi | int DEFAULT NULL |  |
| PackerGoodBags | int DEFAULT NULL |  |
| packerGoodBidis | int DEFAULT NULL |  |
| PackerChatBags | int DEFAULT NULL |  |
| PackerChatBidis | int DEFAULT NULL |  |

ENGINE=InnoDB DEFAULT CHARSET=latin1;

UNIQUE KEY `U\_PayEmployees` (`NoteNumber`,`EmployeeNumber`,`EffectiveFrom`)

FOREIGN KEYS (NoteNumber, LocationType, LocationCode, DesignationCode, EmployeeType, ServiceStatus, CentreCode)

Relation with tables:

tblpaymaster(NoteNumber(PK))

tblcentremaster(CentreCode(PK))

tbllocations(LocationType(PK), LocationCode(PK))

tblemployeetypes(EmployeeType(PK))

tbldesignations(DesignationCode(PK))

tblservicestatus(ServiceStatus(PK))

[10] **tblpaymaster:** 12 fieldscontaining information related to master payment related data. Among its fields, there can be found:

|  |  |  |
| --- | --- | --- |
| Field name | Data type and Definition | Description |
| Key NoteNumber | varchar(25) NOT NULL |  |
| NoteDate | datetime DEFAULT NULL |  |
| CentreCode | int DEFAULT NULL |  |
| ParamCode | varchar(6) DEFAULT NULL |  |
| Fromdate | datetime DEFAULT NULL |  |
| ToDate | datetime DEFAULT NULL |  |
| PayedServiceType | smallint DEFAULT NULL |  |
| PayedEmployeeType | smallint DEFAULT NULL |  |
| PayedServiceStatus | smallint DEFAULT NULL |  |
| LocationType | tinyint unsigned DEFAULT NULL |  |
| LocatonCode | int DEFAULT NULL |  |
| StateCode | tinyint unsigned DEFAULT NULL |  |

ENGINE=InnoDB DEFAULT CHARSET=latin1;

PRIMARY KEY (`NoteNumber`)

FOREIGN KEYS(StateCode, LocationType, LocationCode, )

Relation with tables:

tblstatemaster(StateCode(PK))

tbllocations(LocationType(PK), LocationCode (PK))

tblcentremaster(CentreCode(PK), RefNoteNumber(FK))

tblpayemployees(NoteNumber(FK))

tblpayemployeeparamdetails(NoteNumber(FK))

[11] **tblservicestatus:** 2 fieldscontaining information related to service status related data. Among its fields, there can be found:

|  |  |  |
| --- | --- | --- |
| Field name | Data type and Definition | Description |
| Key ServiceStatus | tinyint unsigned NOT NULL |  |
| Description | varchar(15) NOT NULL |  |

ENGINE=InnoDB DEFAULT CHARSET=latin1;

PRIMARY KEY (`ServiceStatus`)

Relation with tables:

tblpayemployees(ServiceStatus(FK))

tblemployees(ServiceStatus(FK))

tblpayemployeeparamdetails(ServiceStatus(FK))

[12] **tblservicetypes:** 2 fieldscontaining information related to master payment related data. Among its fields, there can be found:

|  |  |  |
| --- | --- | --- |
| Field name | Data type and Definition | Description |
| Key ServiceType | tinyint unsigned NOT NULL |  |
| Description | varchar(15) NOT NULL |  |

ENGINE=InnoDB DEFAULT CHARSET=latin1;

PRIMARY KEY (`ServiceType`)

Relation with tables:

tblemployees(ServiceType(FK))

tbldesignations(ServiceType(FK))

[13] **tblstatemaster:** 2 fieldscontaining information related to master state related data. Among its fields, there can be found:

|  |  |  |
| --- | --- | --- |
| Field name | Data type and Definition | Description |
| Key StateCode | tinyint unsigned NOT NULL |  |
| StateName | varchar(50) DEFAULT NULL |  |

ENGINE=InnoDB DEFAULT CHARSET=latin1;

PRIMARY KEY (`StateCode`)

Relation with tables:

tblpaymaster(StateCode(FK))