A. Consider the relation called BookInfo that tracks books, the book's author(s), and the book’s publisher information.Book can be published by 1 publisher,

BookInfo (titleID, bookTitle, bookType, bookPrice, authorID, authorName, authorAddress, publisherID, publisherName, publisherAddress, authorNameOrder, royaltyShare)

The functional dependencies:

|  |
| --- |
| titleID |
| bookTitle |
| bookType |
| bookPrice |
| authorID |
| authorName |
| authorAddress |
| publisherID |
| Publishername |
| publisherAddress |
| authorNameOrder |
| royaltyShare |

titleID -> bookTitle,bookType,bookPrice,publisherID

authorID -> authorName,authorAddr

publisherID -> publisherName,publisherAddr

(authorID,titleID) ->AuthorNameOrder

(authorID,publisherID) -> royaltyShare

B. Consider a system that tracks projects in departments, the employees assigned to them, and the hours charged to the projects by each employee. In this company a department is managed by manager at each location (in other words the finance department in Saskatoon has a manager, as does the finance department in Regina). Projects are tied to a department and a department is identified in the system with a specific department number.

-Employee’s belong to a department, but work on projects for other departments

Project (projNumber, projName, projLocation, deptNumber, deptLocation, deptName,

deptManager, empName, empID, empBirthDate, empAddress, hours)

The functional dependencies:

|  |
| --- |
| projNumber |
| projName |
| projLocation |
| deptNumber |
| deptLocation |
| deptName |
| deptManager |
| empName |
| empID |
| empBirthDate |
| empAddress |
| hours |

ProjNum -> PName, PLoc, Dept#

Dept# -> Deptname

EmpID ->EmpName, BDay, EmpAddr, Dept#

(Proj#, EmpID)-> Hours

(Dept#, Loc)-> DeptManager

C. Consider the relation, CourseRegistration, which tracks students, courses and individual marks for each course. Like CST, the courses can be delivered to several sections on different days and times, but unlike CST each section only has that course once per week.

CourseRegistration( studentID, studentName, studentAddress, courseID, section, midtermMark, finalMark, courseName, credits, term, day, room, startTime, endTime )

The functional dependencies:

|  |
| --- |
| studentID |
| StudentName |
| studentAddr |
| courseID |
| Section |
| midtermMark |
| finalMark |
| courseName |
| Credits |
| Term |
| Day |
| Room |
| startTime |
| endTime |

stuID->stuName,stuAddr

courseID ->CourseName,credits

(stuID,courseID) -> midtermMark,finalMark

(courseID,section) -> Term,Day,Room,startTime,endTime