

CSE 414: Section 7 Solution

Problem 1. We are keeping a collection of people who use our astronomical services, to help predict your personality by your hobbies.

R(pid, name, address, hobby, horoscope, birthday, personality)

pid -> name, address, birthday

birthday -> horoscope

hobby -> personality

Solution:

first split on pid:

R1(pid, hobby, personality)

R2(pid, name, address, horoscope, birthday)

second split on hobby:

R1 becomes

R11(pid, hobby) -> primary key: pid, hobby

R12(hobby, personality) -> primary key: hobby

third split on birthday:

R2 becomes

R21(pid, name, address, birthday) -> primary key: pid

R22(birthday, horoscope) -> primary key: birthday

Problem 2. Every department store has departments. Each department has a name, a type, and an interior design. Each store also has (possibly multiple) floor levels, and each level has a theme (for example: children's, or shoes.)

R(level, theme, deptName, deptType, deptDesign)

level -> theme

deptName, deptType -> deptDesign

Solution:

first split on level:

R1(level, theme) -> primary key: level

R2(level, deptName, deptType, deptDesign)

second split on {deptName, deptType}:

R2 becomes

R21(level, deptName, deptType) -> primary key: level, deptName, deptType

R22(deptName, deptType, deptDesign) -> primary key: deptName, deptType