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| Obraz krętych dróg i drzew  Database Design and Implementation  HR Recruitment | Description  Report describing design and implementation stages of database system on example of Human Recourses Recruitment branch.  Adam Janowski  Database Systems |

1. Requirements Analysis

Requirements:

* + Companies where the person worked at.
  + Positions that the person had at company.
  + Skills that the person used at work,
  + Length of employment of the person at the company
  + Projects that the person worked on

Entities:

* Employee
* Company
* Position
* Project
* Skill

Employee

EmployeeID

LastName

FirstName

Project

ProjectID

ProjectType

ProjectName

Skill

SkillID

SkillName

Position

PositionID

PositionTitle

Company

CompanyID

Industry

CompanyName

1. Conceptual Design

Employee - Company

An employee could work for different companies, and the company could have many employees, thus those entities have a many-to-many relationship.

Employee - Position

Many employees can work on the same position, but also one employee could work on different positions within or in different companies. For those reasons the relationship between position and employee will be also many-to-many.

Employee – Project

Similarly, as above, many employees can work on the same project, as well as one employee could work on many projects. Therefore, this relationship as well will be many-to-many

Project-Skill

One project will require different set of skills, and one employee could use different skills in different projects. Then, the relationship between project and skill will be also many-to-many.

ER diagram with binary relationship

CompanyID

Worked\_For

Start Date

End Date

SkillName

SkillID

Skill

ProjectName

ProjectType

ProjectID

Project

Worked\_On

Start Date

End Date

PositionTitle

PositionID

CompanyName

Industry

N

M

N

N

M

N

M

Position

Required

Worked\_As

Start Date

End Date

Company

Employee

EmployeeID

LastName

FirstName

M

ER diagram with quaternary relationship representation

In above ER diagram using only binary degree relationship can be noticed that all three relationships (Worked\_In, Worked\_As, Worked\_On) are similar and have the same attributes. Therefore, it is worthy to represent those relationship in higher degree. It will not only create more readable diagram, but also will facilitate mapping process.

SkillName

SkillID

Skill

ProjectName

ProjectType

ProjectID

Project

PositionTitle

PositionID

N

M

Required

Position

CompanyName

Industry

CompanyID

Company

N

N

M

N

Worked

Start Date

End Date

Employee

EmployeeID

LastName

FirstName