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| Business Template  **Recruitment agency** |
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# Business Description

## Business background

WorkSource is a medium sized, rapidly growing recruitment agency. Their business operations include recruitment services and additional services for candidates to improve their job market prospects, such as interview coaching, resume writing and skill development courses.

## Problems. Current Situation

As a result of a succesful marketing campaign, the company gained several thousand new registrations and is about to sign on 3 big companies as customers. The company currently stores its data in suboptimally structured excel spreadsheets, which struggels to keep up with the ammount of data the organization has to manage, especially after these recent events.

## the Benefits of implementing a database. Project Vision

With a newly implemented database the company can deal with the huge ammount of new data it is about to receive. It can also manage its data far more easily and can create more value for the candidates and companies by making the recruitment process more effective with more accurate job-candidate matching.

# Model description

## Definitions & Acronyms

PK- primary key

* When several attributes have the PK constraint in a table, it means that together they form a composite primary key

FK – foreign key

UK – uniqe key

NN – non null constraint

DF – default constraint

CHECK – check constraint

AUTO\_INCREMENT – auto increment column attribute

## Logical Scheme

A screenshot of a computer screen

AI-generated content may be incorrect.

## Objects

Table Description

The **candidates** table contains basic data about job seekers who registered on the company’s website.

|  |  |  |  |
| --- | --- | --- | --- |
| Table name | Field name | Field Description | Data Type |
| candidates | candidate\_ID | PK AUTO\_INCREMENT | int |
| email | UK | varchar(100) |
| first\_name | NN | varchar(50) |
|  | last\_name | NN | varchar(50) |
|  | user\_password | NN | varchar(10) |
|  | registration\_date | NN | date |
|  | phone\_nr | UK NN | varchar(50) |
|  | city\_ID | FK | int |
|  | birthdate | NN; CHECK (birthdate >= 15.03.2007) | date |
|  | highest\_education <describes highest level of education> | NN CHECK (highest\_education IN (high school diploma, associate’s degree, bachelor’s degree, master’s degree, doctoral degree)) | varchar(50) |

This table has the following relationships:

Example with data

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **candidate\_ID** | **candidate\_email** | **candidate\_first\_name** | **candidate\_last\_name** | **user\_password** | **registration\_date** | **phone\_nr** | **city\_ID** | **birthdate** | **highest\_education** |
| 8234 | john.doe@example.com | John | Doe | Abc12345 | 2023-07-12 | +1 555-1234 | 3321 | 1984-05-21 | bachelor’s degree |
| 9112 | [sarah.smith@example.com](mailto:sarah.smith@example.com) | Sarah | Smith | Xyz98765 | 2021-09-05 | +1 555-5678 | 9235 | 1992-11-12 | master’s degree |

Table Description

The **job\_listings** table contains data about currently open jobs from partner companies.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| job\_listings | job\_ID | PK AUTO\_INCREMENT | int |
| role\_ID | FK | int |
|  | company\_ID | FK | char(8) |
|  | employment\_type | NN CHECK (employment\_type IN (full time, part time, internship)) | varchar(50) |
|  | contract\_type | NN CHECK (contract\_type IN (permanent, fixed term)) | varchar(50) |
|  | city\_ID | FK | int |
|  | upload\_date | NN | date |

Comments on table relationships

Example with data

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **job\_ID** | **role\_ID** | **company\_ID** | **employment\_type** | **contract\_type** | **city\_ID** | **upload\_date** |
| 123456 | 832 | C1234567 | full time | permanent | 3321 | 2025-03-01 |
| 789012 | 956 | C9876543 | part time | fixed term | 9235 | 2025-03-05 |

Table Description

The **job\_applications** table contains data about the applications of registered candidates for job listings posted by the partner companies.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| job\_applications | candidate\_ID | PK FK | int |
| job\_ID | PK FK | int |
|  | application\_date | NN | date |
|  | stage | DEFAULT ‘waiting for review’ | varchar(50) |

Comments on table relationships

Example with data

|  |  |  |  |
| --- | --- | --- | --- |
| **candidate\_ID** | **job\_ID** | **application\_date** | **stage** |
| 8206 | 123456 | 2025-03-12 | waiting for review |
| 9913 | 789012 | 2025-03-13 | waiting for review |

The **role** table contains basic data about roles referenced in job listings and experience.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| role | role\_ID | PK AUTO\_INCREMENT | int |
| role\_name | NN | varchar(50) |

Comments on table relationships

Example with data

|  |  |
| --- | --- |
| **role\_ID** | **role\_name** |
| 832 | Software Engineer |
| 956 | Data Analyst |

Table Description

The **companies** table contains basic data about partner companies.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| companies | company\_ID | PK AUTO\_INCREMENT | int |
| company\_name | NN | varchar(50) |
|  | legal\_form | NN CHECK (legal\_form IN (SP, GP, LP, LLC, Ltd, Inc, NPO, PLC, BO, JV) | varchar(10) |
|  | industry |  | varchar(50) |
|  | address\_ID | FK | int |

Comments on table relationships

Example with data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **company\_ID** | **company\_name** | **legal\_form** | **industry** | **address\_ID** |
| 12345678 | Tech Innovators | LLC | Technology | 81248 |
| 98765432 | Green Solutions | NPO | Environmental | 97158 |

Table Description

The **experience** table contains basic data about work experience.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| experience | exp\_ID | PK AUTO\_INCREMENT | int |
|  | role\_ID | FK | varchar(50) |
|  | duration\_months | NN <duration of experience in months> | int |

Comments on table relationships

Example with data

|  |  |  |
| --- | --- | --- |
| **exp\_ID** | **role\_ID** | **duration\_months** |
| 8710001 | 832 | 24 |
| 9810002 | 956 | 12 |

Table Description

The **skill** table contains basic data about work-related skills.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| skill | skill\_ID | PK AUTO\_INCREMENT | int |
| skill\_name | NN | varchar(50) |
|  | proficiency\_level | NN | varchar(50) |
|  | certified | NN | boolean |
|  | certif\_type |  | varchar(50) |

Comments on table relationships

Example with data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **skill\_ID** | **skill\_name** | **proficiency\_level** | **certified** | **certif\_type** |
| 8310034 | Python | Advanced | FALSE | NULL |
| 1290286 | Spanish | C1 | TRUE | IELTS certificate |

Table Description

The **candidate\_experience** table links candidates and their work experience.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| candidate\_experience | candidate\_ID | PK FK | int |
| experience\_ID | PK FK | int |

Comments on table relationships

Example with data

|  |  |
| --- | --- |
| **candidate\_ID** | **expereience\_ID** |
| 9013 | 9810002 |
| 1173 | 8710001 |

Table Description

The **job\_experience** table links jobs and their work experience requirement.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| job\_experience | job\_ID | PK FK | int |
| exp\_ID | PK FK | int |

Comments on table relationships

Example with data

|  |  |
| --- | --- |
| **job\_ID** | **expereience\_ID** |
| 789012 | 9810002 |
| 123895 | 8710001 |

Table Description

The **candidate\_skill** table links candidates and their work related skills.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| candidate\_skill | candidate\_ID | PK FK | int |
| skill\_ID | PK FK | int |

Comments on table relationships

Example with data

|  |  |
| --- | --- |
| **candidate\_ID** | **skill\_ID** |
| 9013 | 8310034 |
| 1173 | 1290286 |

Table Description

The **job\_skill** table links jobs and their required skills.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| job\_skill | job\_ID | PK FK | int |
| skill\_ID | PK FK | int |

Comments on table relationships

Example with data

|  |  |
| --- | --- |
| **job\_ID** | **skill\_ID** |
| 789012 | 8310034 |
| 123895 | 1290286 |

Table Description

The **interviews** table contains data about each scheduled or conducted interview.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| interviews | candidate\_ID | PK FK | int |
| job\_ID | PK FK | int |
|  | interview\_round | PK | int |
|  | interview\_date | NN | date |
|  | interviewer\_ID | FK NN | int |

Comments on table relationships

Example with data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **candidate\_ID** | **job\_ID** | **interview\_round** | **interview\_date** | **interviewer\_ID** |
| 9013 | 5297452 | 1 | 2025-03-10 | 106 |
| 1173 | 9926411 | 2 | 2025-03-20 | 218 |

Table Description

The **interviewers** table contains basic data about the agency’s or a partner company’s employees who conduct job interviews.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| interviewers | interviewer\_ID | PK AUTO\_INCREMENT | int |
| first\_name | NN | varchar(50) |
|  | last\_name | NN | varchar(50) |
|  | phone\_nr | UK | varchar(50) |

Comments on table relationships

Example with data

|  |  |  |  |
| --- | --- | --- | --- |
| **interviewer\_ID** | **first\_name** | **last\_name** | **phone\_nr** |
| 106 | Sarah | Johnson | +1-555-123-4567 |
| 218 | David | Smith | +1-555-987-6543 |

Table Description

The **additional services** table contains data about the agency’s services provided to the candidates to improve their job seeking prospects.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| additional\_services | service\_ID | PK AUTO\_INCREMENT | int |
| service\_name | NN | varchar(50) |
|  | service\_level | NN | varchar(50) |
|  | duration\_days | NN | int |
|  | trainer\_ID | FK NN | char(8) |
|  | price\_USD | NN | int |

Comments on table relationships

Example with data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **service\_ID** | **service\_name** | **service\_level** | **duration\_days** | **trainer\_ID** | **price\_USD** |
| 08 | Assertive Communications | Beginner | 30 | 31 | 200 |
| 13 | CV workshop | Expert | 5 | 09 | 350 |

Table Description

The **trainers** table contains basic data about the trainers who teach courses or provide other training for candidates.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| trainers | trainer\_ID | PK AUTO\_INCREMENT | int |
| first\_name | NN | varchar(50) |
|  | last\_name | NN | varchar(50) |
|  | area\_of\_expertise |  | varchar(50) |

Comments on table relationships

Example with data

|  |  |  |  |
| --- | --- | --- | --- |
| **trainer\_ID** | **first\_name** | **last\_name** | **area\_of\_expertise** |
| 31 | Sarah | Johnson | Communications |
| 09 | David | Smith | HR |

Table Description

The **service\_applications** table contains data about the applications for the additional services.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| service\_applications | service\_ID | PK FK | int |
| candidate\_ID | PK FK | int |
|  | date\_of\_application | NN | date |

Comments on table relationships

Example with data

|  |  |  |
| --- | --- | --- |
| **service\_ID** | **candidate\_ID** | **date\_of\_application** |
| 08 | 9329 | 2025-03-10 |
| 13 | 1106 | 2025-03-12 |

Table Description

The **city** table contains data about cities for the address, candidates and job\_listings tables.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| city | city\_ID | PK AUTO\_INCREMENT | int |
| city\_name | NN | varchar (50) |
|  | country\_ID | FK | int |

Comments on table relationships

Example with data

|  |  |  |
| --- | --- | --- |
| **city\_ID** | **city\_name** | **country\_id** |
| 3321 | Vancouver | 63 |
| 9235 | Budapest | 956 |

Table Description

The **country** table contains data about countries for the city table.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| country | country\_ID | PK AUTO\_INCREMENT | int |
| country\_name | NN | varchar (50) |

Comments on table relationships

Example with data

|  |  |
| --- | --- |
| **country\_ID** | **country\_name** |
| 63 | Canada |
| 956 | Hungary |

Table Description

The **address** table contains data about companies’ addresses.

|  |  |  |  |
| --- | --- | --- | --- |
| Table Name | Field name | Field Description | Data Type |
| address | address\_ID | PK AUTO\_INCREMENT | int |
| street | NN | varchar (100) |
|  | zip\_code |  | varchar(50) |
|  | house\_nr | NN | int |
|  | city\_ID | FK | int |

Comments on table relationships

Example with data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **address\_ID** | **street** | **zip\_code** | **house\_nr** | **city\_ID** |
| 5283 | Váci | 1052 | 6 | 3321 |
| 5035 | Alexander | BC V6A 1B5 | 148 | 9235 |