KINDERGARTEN DATABASE DESCRIPTION

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Contents

1. BUSINESS DISCRIPTION

1.1 BUSINESS BACKGROUND

There's a business idea of a customer to organize a new kindergarten in a small city surrounded by smaller cities/villages.
It is planning:

- to provide full day care for kids every working day since 7am till 7pm, including 4 times feeding, a day quiet/sleeping time, 2 times walking, lessons and activities;
- to accept kids aged 3 to 7 years;
- to organize groups up to 10 kids by levels:
- the youngest group level: kids aged 3-4 y.o.;
- the middle group level: kids aged 4-5 y.o.;
- the elder group level: kids aged 5-6 y.o.;
- the pre-school group level: kids aged 6-7 y.o.
According to situation there might be from 0 to few same-level groups.
- at the start to speak in the kindergarten a one same language.

1.2 PROBLEMS. CURRENT SITUATION

The customer needs to know what a structure to choose as a base for developing the project.

1.3 BENEFITS FROM IMPLEMENTING A DATABASE. PROJECT VISION

We suggest to develop the project based on a following model:

- to organize the personnel by services, say:
- childcare service: tutors and nursemaids;
- education service: music/theatre teacher(s), speech therapist(s), teacher(s), librarian;
- medical service: doctor(s), medical nurse(s);
- kitchen: cooks, dish-washers;
- maintenance: technical specialist, yard-keeper/janitor, cleaning workers;
- management: director, manager(s), accountant(s).
- to define a required number of employees of childcare and education services per a group level (for instance, it's needed more childcare specialists at once for the youngest group but no need for a speech therapist at this level).
- to define a default number of other services' specialists as 1 with following monitoring and adjustment.
- to organize every day work by 6-hour shifts for childcare service's employees and 8-hour working day for other services.
- to group kids by age as required, additionally considering factors of special diet's and/or speech therapy's necessity if needed.
- to keep info about every family member, participating in a kid's care, who's empowered to bring to or pick up the child from the kindergarten.

As the benefit the suggested model is served as a basic structure for discussion of the customer's idea and its further development:
- making calculations for a business plan in part of monthly expenses consisted of employees' wages;
- arising questions regarding necessary funds, needs, demands, features and so on;
- organizing services and processes in the kindergarten;
- organizing kindergarten's future databases;
- etc.

2. MODEL DISCRIPTION

2.1 DEFINITIONS, ACRONYMS and SYMBOLS

id – identificator;
dob – date of birthday;
mobile – mobile phone number;
tg – Telegram messenger;
doc – identity document: passport for adult, birth certificate for children;
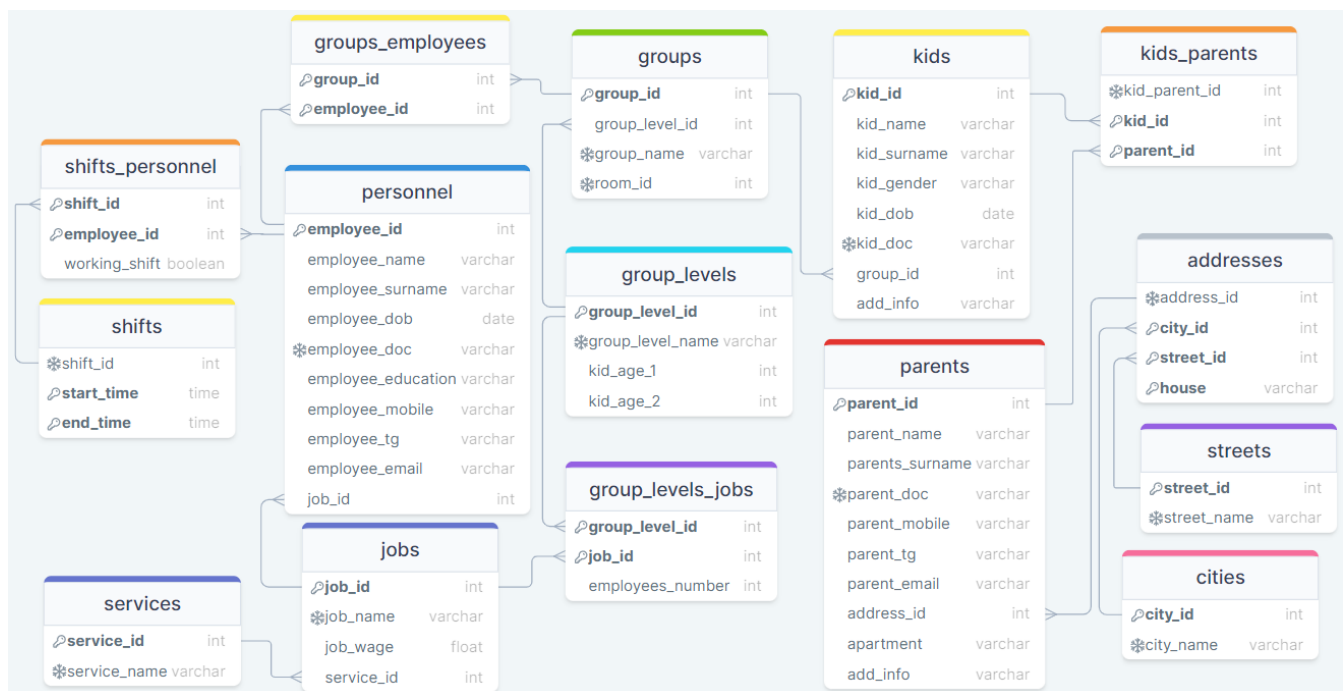number – in the meaning of quantity;
house – include Nr of house, building and litera if exists;
DB – database;
🔑 = PK = Primary Key;
❄ = FK = Foreign Key.

2.2 LOGICAL SCHEME

2.3 OBJECTS

2.3.1. Tables Description

At the moment we define three main domains in the structure:
- Kids and Parents (relatives, family members) and their details;
- Kindergarten groups and their details;
- Kindergarten Services and Personnel and their details.

There're presented 11 basic tables with data and 4 bridge/connecting tables at our model.

table_name	table_type	column_name	data_type	column_description
services	table with data	service_id	integer	PK
		service_name	varchar	
jobs	table with data	job_id	integer	PK
		job_name	varchar	
		job_wage	float	say, a wage per shift
		service_id	int	FK
personnel	table with data	employee_id	integer	PK
		employee_name	varchar	
		employee_surname	varchar	
		employee_dob	date	
		employee_doc	varchar	
		employee_education	varchar	
		employee_mobile	varchar	mobile phone number
		employee_tg	varchar	
		employee_email	varchar	
		job_id	int	FK
shifts	table with data	shift_id	integer	PK
		date	date	
		start_time	time	
		end_time	time	
shifts_personnel	bridge-table	shift_employee_id	integer	PK
		shift_id	integer	FK
		employee_id	integer	FK
		working_shift	boolean	
groups	table with data	group_id	integer	PK
		group_level_id	integer	FK
		group_name	varchar	
		room_id	int	supposely, we assign room_id by real room Nr and don't need a special tab
groups_levels	table with data	group_level_id	integer	PK
		group_level_name	varchar	
		kid_age_1	integer	
		kid_age_2	integer	
groups_levels_jobs	bridge-table	group_level_job_id	integer	PK
		group_level_id	integer	FK
		job_id	integer	FK
		employees_number	integer	

table_name	table_type	column_name	data_type	column_description
groups_employees	bridge-table	group_employee_id	integer	PK
		group_id	integer	FK
		employee_id	integer	FK
kids	table with data	kid_id	integer	PK
		kid_name	varchar	
		kid_surname	varchar	
		kid_gender	varchar	
		kid_dob	date	
		kid_doc	varchar	
		group_id	int	FK
		add_info	varchar	
parents	table with data	parent_id	integer	PK
		parent _name	varchar	
		parent_surname	varchar	
		parent_doc	varchar	
		parent_mobile	varchar	mobile phone number
		parent _tg	varchar	
		parent_email	varchar	
		address_id	integer	FK
		apartment	varchar	
		add_info	varchar	
kids_parents	bridge-table	kid_parent_id	integer	PK
		kid_id	integer	FK
		parent_id	integer	FK
addresses	table with data	address_id	integer	PK
		city_id	integer	FK
		street_id	integer	FK
		house	varchar	
cities	table with data	city_id	integer	PK
		city_name	varchar	
streets	table with data	city_id	integer	PK
		city_name	varchar	

2.3.2. Tables Relations Comments

There're four many-to-many relationships between basic tables with data:
personnel - groups,
personnel – shifts,
group_levels – jobs,
kids – parents,
which are adduced to one-to-many relationship with help of bridge/connecting tables.
So, actually all relationships between tables in the DB are one-to-many ones.

2.3.3. Example with filled data

table_name	service_id	service_name
services	1	childcare_service
	2	education_service
	3	medical_service
	4	kitchen
	5	maintenance
	6	management

table_name	job_id	job_name	job_wage	service_id
jobs	101	tutor	60	1
	102	nursemaid	40	1
	103	music/theatre teacher	70	2
	104	speech therapist	50	2
	105	teacher	60	2
	106	librarian	30	2
	107	doctor	70	3
	108	medical nurse	50	3
	109	cook	60	4
	110	dish-washer	30	4
	111	technical specialist	40	5
	112	keeper/janitor	40	5
	113	cleaning worker	30	5
	114	director	80	6
	115	manager	60	6
	116	accountant	70	6

table_name	kid_id	kid_name	kid_surname	kid_gender	kid_dob	kid_doc	group_id	add_info
kids	1018	Giorgi	Sharadze	male	09.06.2018	78 179138	308	food allergy
	1013	Maria	Avdonyan	female	13.06.2017	77 999852	305	plays accordion
	1002	Anna	Ivanova	female	17.12.2016	77 258147	303	brought up by father