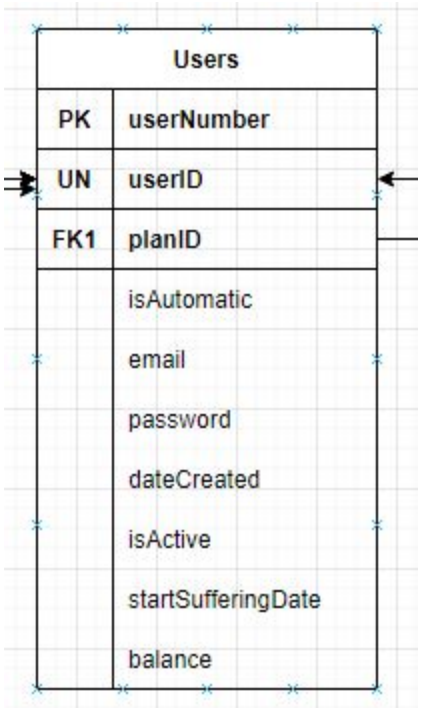
Normalization Process Details

1. **Users Table**

Schema



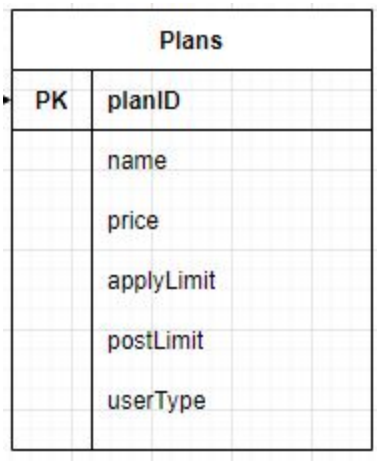
Sample Data

userNumber	userID	planID (FK)	email	password	dateCreated	isActive	startSuffereingDate	balance	isAutomatic
1	mike	3	mike@..	123	12/12/12	0	12/12/19	-10.00	true
2	doc	4	doc@..	324	12/11/20	1	NULL	33.00	false
3	car	5	car@..	6513	12/23/21	1	NULL	44.00	false

1NF: This table is in 1NF because all the columns hold atomic values.
2NF: This table is in 2NF because it is in 1NF and there are no partial dependencies.
3NF: This table is in 3NF because it is in 2NF and no non-prime is functionally dependent on a field that is not part of the candidate key.

2. Plans Table

Schema



Sample Data

planID	name	price	applyLimit	postLimit	userType
1	Prime	12.00	0	5	admin
2	Gold	16.00	NULL	0	employee
3	Special	17.00	0	NULL	employer
4	Prime	17.00	0	5	employer

1NF: This table is in 1NF because all the columns hold atomic values.
2NF: This table is in 2NF because it is in 1NF and there are no partial dependencies.
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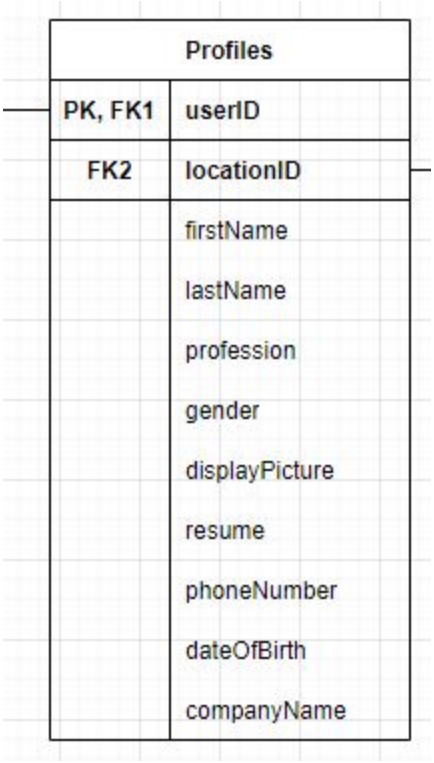
3. Profiles Table

Schema



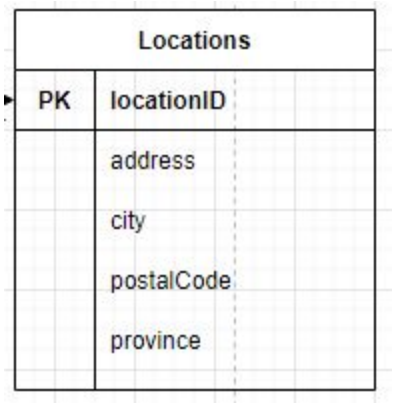
Sample Data

userID	**locationID (FK)**	**firstName**	**lastName**	**profession**	**gender**	**displayPicture**	**resume**	**phoneNumber**	**dateOfBirth**	**companyName**
gordon	**1**	**Arunraj**	**Adlee**	**Doctor**	**m**	**pic.jpg**	**cv.pdf**	**514**	**20/24/88**	**Montreal Medical**
alice	**2**	**Leo**	**Silao**	**Engineer**	**m**	**pic2.jpg**	**cv2.pdf**	**231**	**12/01/15**	**Google**
tom	**1**	**Jon**	**Doe**	**Engineer**	**f**	**pic3.jpg**	**cv3.pdf**	**123**	**12/12/96**	**Amazon**
michael	**2**	**Mike**	**Conway**	**Lawyer**	**f**	**pic4.jpg**	**cv4.pdf**	**4455**	**12/12/20**	**LawyerGang**

1NF: This table is in 1NF because all the columns hold atomic values.
2NF: This table is in 2NF because it is in 1NF and there are no partial dependencies.
3NF: This table is in 3NF because it is in 2NF and there are no transitive dependencies as all columns depend only on the userID key.

4. Locations Table

Schema



Sample Data

locationID	address	city	postalCode	province
1	1095 Dog House	Montreal	H2M 1F8	quebec
2	23123 Park Street	Altoona	35952	Alabama

1NF: This table is in 1NF because all the columns hold atomic values.
2NF: This table is in 2NF because it is in 1NF and there are no partial dependencies.
3NF: This table is in 3NF because it is in 2NF and there are no transitive dependencies as all columns depend only on the locationID key.
We thought about the idea that postalCode could determine province and city, but decided against it as online research showed that it was possible that different countries might share similar zip codes.

5. Jobs Table

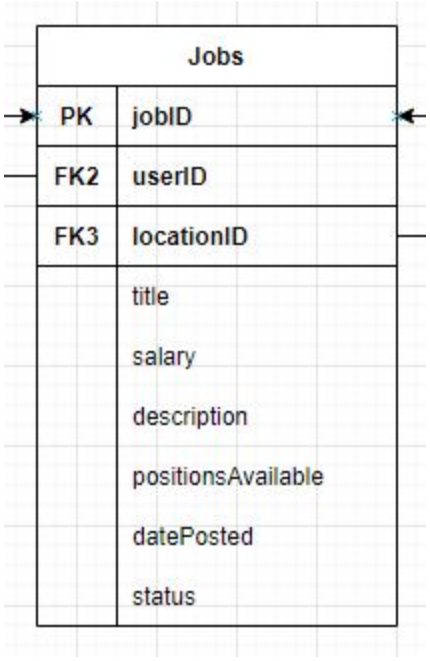
Original Schema

Original Sample Data

jobID	userID (FK)	locationID (FK)	title	salary	description	company Name	positions Available	datePosted	status
1	bob	1	Software Dev	84000	Angular	Amazon	5	12/20/19	Filled
2	mike	2	Front End Dev	35000	React	Facebook	1	11/3/2020	Open
3	mike	2	Back End Dev	50000	C#	Facebook	1	11/4/2020	Open

1NF: This table is in 1NF because all the columns hold atomic values.
2NF: This table is in 2NF because it is in 1NF and there are no partial dependencies.
3NF: This table is in NOT 3NF because we found that the companyName field was reliant on the userID (employer) FK. So we decided to move the companyName field to the Profile entity.

New Schema



New Sample Data

jobID	userID (FK)	locationID (FK)	title	salary	description	positions Available	datePosted	status
1	bob	1	Software Dev	84000	Angular	5	12/20/19	Filled
2	mike	2	Front End Dev	35000	React	1	11/3/2020	Open
3	mike	2	Back End Dev	50000	C#	1	11/3/2020	Open

6. Job_Categories_List Table

Schema

Sample Data

jobCategoriesListID	categoryName
1	Javascript
2	React
3	Angular
4	PHP

1NF: This table is in 1NF because all the columns hold atomic values.
2NF: This table is in 2NF because it is in 1NF and there are no partial dependencies.
3NF: This table is in 3NF because it is in 2NF and there are no transitive dependencies as all columns depend only on the unique jobCategoriesListID key.

7. Job_Categories Table

Schema

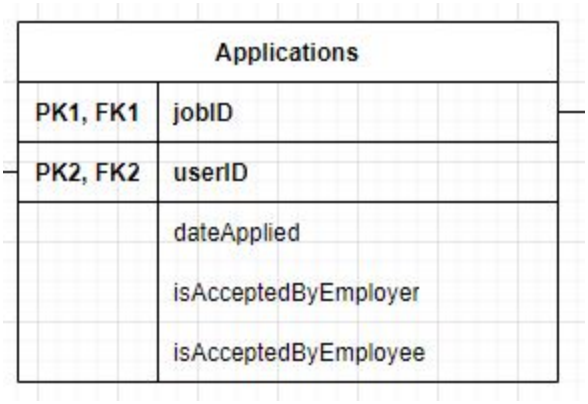
Sample Data

jobID	jobCategoryID
1	2
2	1
3	3
4	1

1NF: This table is in 1NF because all the columns hold atomic values.
2NF: This table is in 2NF because it is in 1NF and there are no partial dependencies.
3NF: This table is in 3NF because it is in 2NF and there are no transitive dependencies since columns are FKs and PKs in order to connect the job and its categories.

8. Applications Table

Schema



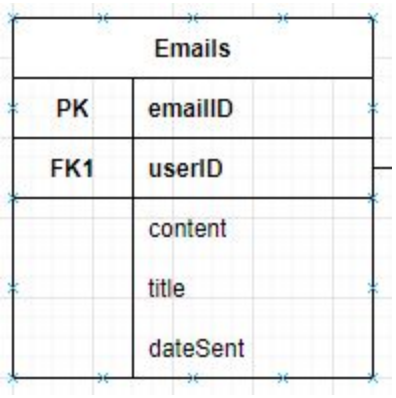
Sample Data

jobID	userID	dateApplied	isAcceptedByEmployer	isAcceptedByEEmployee
1	mike	3/5/2020	False	False
2	jon	2/7/2020	True	True
3	gordon	4/5/2020	True	False
1	chris	4/9/2020	True	True

1NF: This table is in 1NF because all the columns hold atomic values.
2NF: This table is in 2NF because it is in 1NF and there are no partial dependencies.
3NF: This table is in 3NF because it is in 2NF and there are no transitive dependencies as all non-prime columns depend on both the userID and jobID both are required to uniquely identify the application.

9. Emails Table

Schema



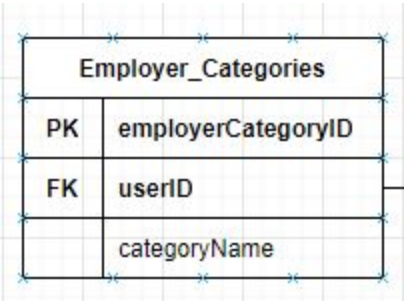
Sample Data

emailID	userID (FK)	content	title	dateSent
1	bob	Hello World	Forgot Password	3/5/2020
2	alex	Hello World	Forgot Password	2/7/2020
3	gordon	Hello World	Forgot Password	4/5/2020
4	leo	Hello World	Forgot Password	4/9/2020

1NF: This table is in 1NF because all the columns hold atomic values.
2NF: This table is in 2NF because it is in 1NF and there are no partial dependencies.
3NF: This table is in 3NF because it is in 2NF and there are no transitive dependencies as all columns depend only on the unique, auto incrementing, emailID key.

10. Employer_Categories Table

Schema



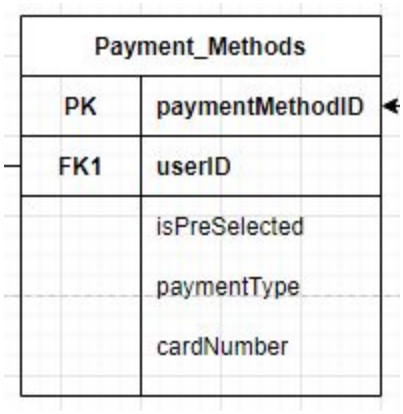
Sample Data

employerCategoryID	userID (FK)	categoryName
1	bob	Senior HR Manager
2	alex	Tech Lead
3	gordon	Junior HR
1	leo	Project Manager

1NF: This table is in 1NF because all the columns hold atomic values.
2NF: This table is in 2NF because it is in 1NF and there are no partial dependencies.
3NF: This table is in 3NF because it is in 2NF and there are no transitive dependencies as all non-prime columns depend on only the employerCategoryID key.

11. Payment_MethodsTable

Schema



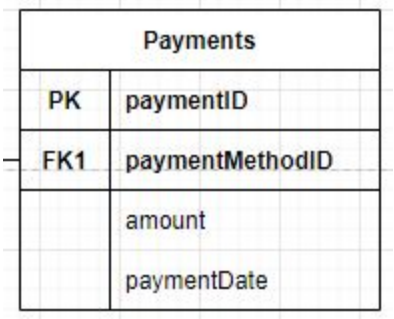
Sample Data

paymentMethodID	userID (FK)	isPreSelected	paymentType	cardNumber
1	bob	True	Credit Card	2846********
2	gordon	False	Checking Account	1561********
3	tiffany	False	Credit Card	5511********
1	bob	True	Credit Card	3334********

1NF: This table is in 1NF because all the columns hold atomic values.
2NF: This table is in 2NF because it is in 1NF and there are no partial dependencies.
3NF: This table is in 3NF because it is in 2NF and there are no transitive dependencies as all non-prime columns depend only on the auto-incrementing paymentMethodID key

12. PaymentsTable

Schema



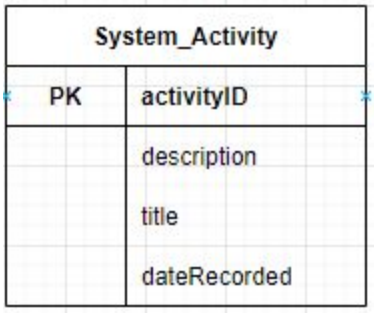
Sample Data

paymentID	PaymentMethodID(FK)	amount	paymentDate
1	1	10.00	12/12/20
2	1	100.00	11/08/19
3	2	50.00	11/06/19
1	3	20.00	11/08/18

1NF: This table is in 1NF because all the columns hold atomic values.
2NF: This table is in 2NF because it is in 1NF and there are no partial dependencies.
3NF: This table is in 3NF because it is in 2NF and there are no transitive dependencies as all non-prime columns depend only on the auto-incrementing paymentID key

13. System_Activity Table

Schema



Sample Data

activityID	description	title	dateRecorded
1	Job added a new job	Job added	12/12/20
2	Bob added a new job	Job added	11/08/19
3	Gordon applied to a job	Application added	11/06/19
1	Added new application	Hello world	11/08/18

1NF: This table is in 1NF because all the columns hold atomic values.
2NF: This table is in 2NF because it is in 1NF and there are no partial dependencies.
3NF: This table is in 3NF because it is in 2NF and there are no transitive dependencies as all non-prime columns depend only on the auto-incrementing activityID key