Relational Database Model

Project Name - Coding in Circles

Project Phase 3

Team 1 Data-Analyst

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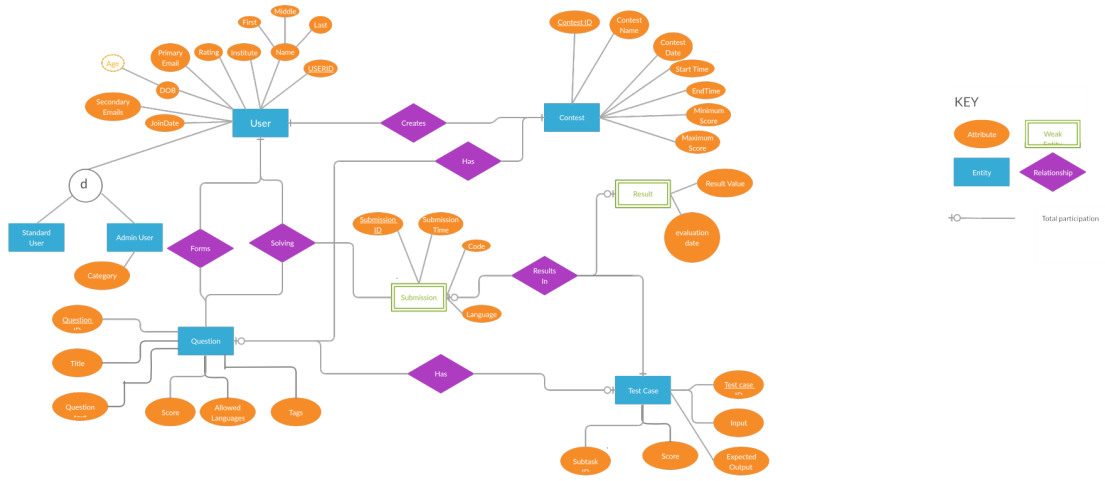
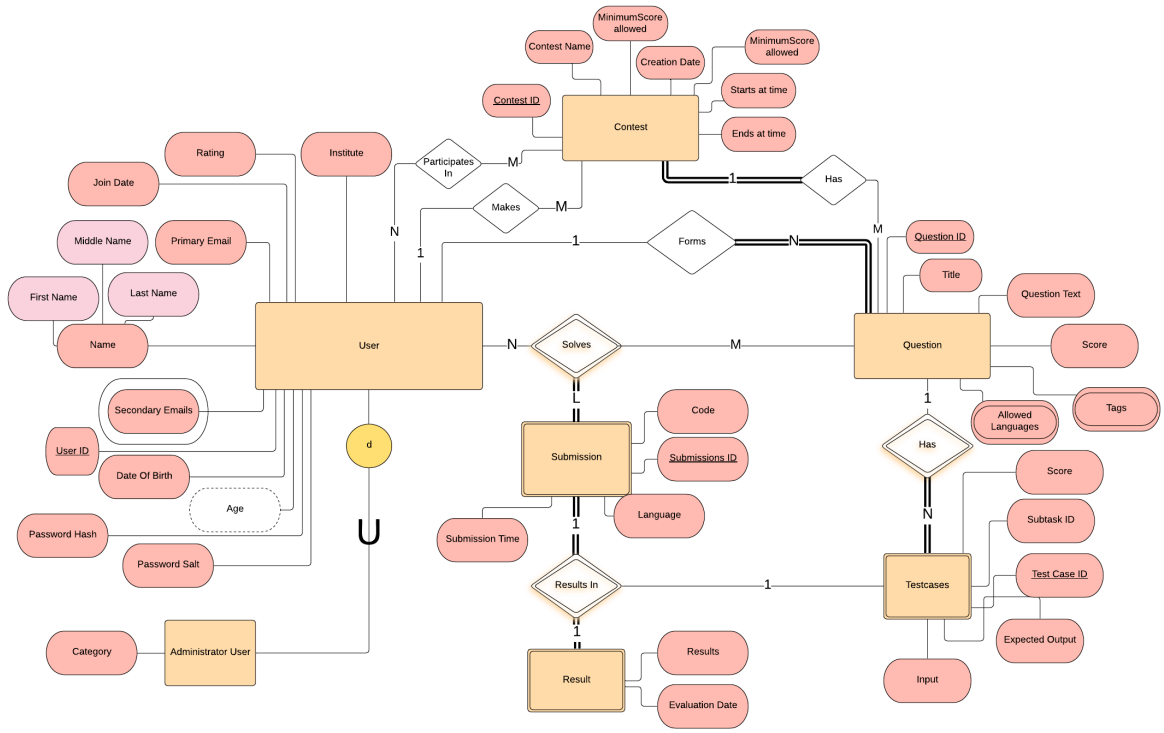
Changes Made

Initial ER Diagram:



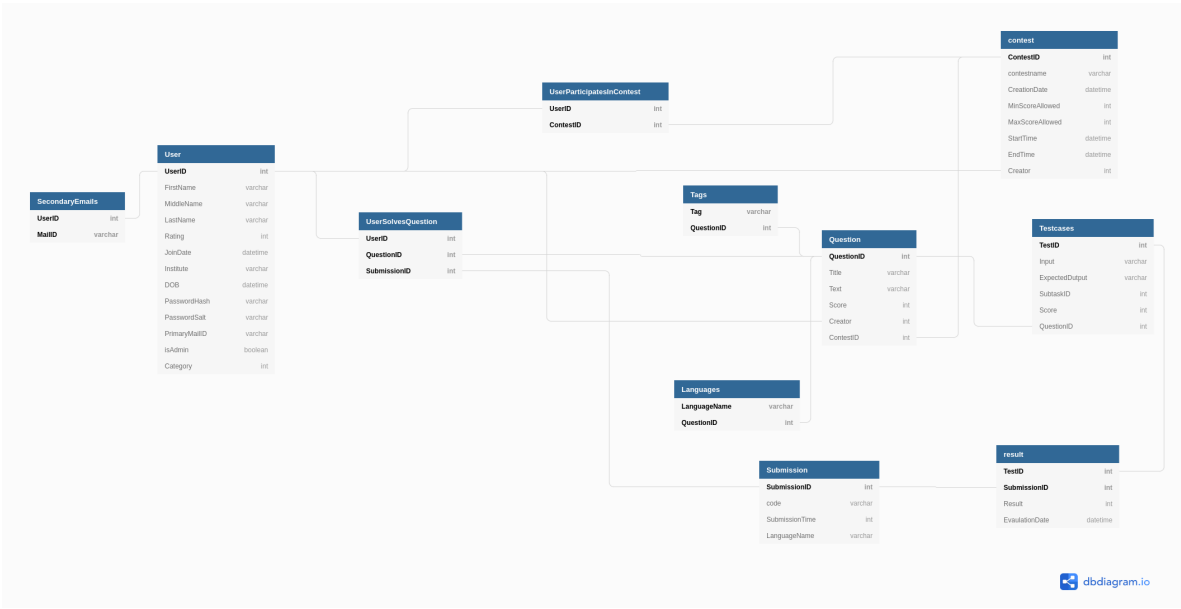
- "User" shouldn't have a "Standard User" as a subclass
- "Tags" is a multivalued attribute
- "Languages" in the relation "Question" is a multivalued attribute
- "Results In" is an identifying relationship
- "Solves" is an identifying relationship
- "Has" is an identifying relationship

Modified ER Diagram:



Relational Model

The Relational Model derived from the ER Diagram is already in 3NF.



Example Tuples for each relations:

User

userid	firstname	middlename	LastName	Rating	JoinDate	Institute	DOB	PasswordHash	PasswordSalt	PrimartyMailID	isAdmin	Category
1	Joe	NULL	Smith	900	2019-11-02 19:46:50	IIIT-H	2008-10-29 14:56:59	a3df4589ad6f5	ad56	abc@gmail.com	0	NULL
2	aakash	NULL	Dantre	600	2019-11-02 19:46:50	IIIT-H	2008-11-11 11:12:01	bc645e541231	56d4	aakash@gmail.com	1	1
3	Jaiden	Joe	Biden	100	2019-11-02 19:46:50	Arizona State University	2008-11-09 15:45:21	1561123189141	6	1561	idk@lolz.lmao	0 NULL

SecondaryEmails

UserID	MailID
1	joe@example.com
1	smithj@example.com
2	aakash@yahoo.com

ContestID	contestname	creationdate	MinScoreAllowed	MaxScoreAllowed	StartTime	EndTime	Creator
1	IIITHax	2019-11-03 19:50:45	150	1000	2019-11-04 19:50:00	2019-11-05 19:50:00	1

UserParticipateInContest

UserID	ContestID
1	1
2	1

Question

QuestionID	Title	Text	Score	Creator	ContestID
1	Q1a	question1 text	20	2	1
2	Find the LoLz	Should you Die? Print YES else NO	30	1	1
3	quesitonalone	ques text	30	2	NULL
4	questionanother	QUES text	40	3	NULL

Testcases

TestID	Input	ExpectedOutput	SubtaskID	Score	QuestionID
1	test1.txt	out1.txt	1	5	1
2	test2.txt	out2.txt	1	5	1
3	test3.txt	out3.txt	2	15	1
4	test4.txt	out4.txt	3	10	2
5	test5.txt	out5.txt	4	20	2
6	test6.txt	out6.txt	4	20	2
7	test7.txt	out7.txt	5	30	3
8	test8.txt	out8.txt	5	30	3
9	test9.txt	out9.txt	6	40	4

Submission

SubmissionID	Code	SubmissionTime	LanguageName
1	user1code1.c	2019-11-04 20:50:00	C
2	user2code2.cpp	2019-11-04 20:51:00	CPP
3	user3code4.py	2019-11-04 20:52:00	python

UserSolvesQuestion

UserID	QuestionID	SubmissionID
1	1	1
1	2	2
3	4	3

Tags

Tag	QuestionID
Greedy Algorithm	1
Kruskal	1
Dynamic Programming	2
Longest Common Subsequence	2

Languages	
LanguageName	QuestionID
C	1
CPP	1
C	2
CPP	2
C	3
CPP	3
python	3
C	4
python	4

Result			
TestID	SubmissionID	Result	EvaluationDate
1	1	0	2019-11-04 20:50:10
2	1	0	2019-11-04 20:50:10
3	1	1	2019-11-04 20:50:10
1	2	1	2019-11-04 20:51:10
2	2	1	2019-11-04 20:51:10
3	2	1	2019-11-04 20:51:10
9	3	1	2019-11-04 20:52:10