Write out the definition of all tables within your database from the tutorial including the items, images, articles, users, and comments. For each attribute in a table give the datatype

Column	Type	Null	Default	Comments
article_ID *(Primary)*	int(11)	No		
article_Title	varchar(80)	No		
original_article_date	date	No		
original_Site_Name	varchar(20)	Yes	*NULL*	
article_author_ID	int(11)	No		
article_body	longtext	No		
manufacturer_ID	int(11)	No		

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	article_ID	16	A	No	
article_ID	BTREE	No	No	article_ID	16	A	No	
article_author_ID	BTREE	No	No	article_author_ID	16	A	No	
manufacturer_ID	BTREE	No	No	manufacturer_ID	16	A	No	

authors

Column	Type	Null	Default	Comments
author_ID *(Primary)*	int(11)	No		
author_Name	varchar(30)	No		

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	author_ID	12	A	No	

comments

Column	Type	Null	Default	Comments
comment_ID *(Primary)*	int(11)	No		
user_commented_ID	varchar(30)	No		
article_ID	int(11)	No		
comment_body	longtext	No		

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	comment_ID	0	A	No	

user_commented_ID	BTREE	No	No	user_commented_ID	0	A	No	
article_ID	BTREE	No	No	article_ID	0	A	No	
article_ID_2	BTREE	No	No	article_ID	0	A	No	
article_ID_3	BTREE	No	No	article_ID	0	A	No	
article_ID_4	BTREE	No	No	article_ID	0	A	No	
article_ID_5	BTREE	No	No	article_ID	0	A	No	

manufacturers

Column	Type	Null	Default	Comments
manufacturer_id *(Primary)*	int(11)	No		
manufacturer_name	varchar(50)	No		
manufacturer_desc	mediumtext	No		
manufacturer_logo	varchar(40)	No		

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	manufacturer_id	12	A	No	

model_generations

Column	Type	Null	Default	Comments
model_generation_ID *(Primary)*	int(11)	No		
model_generation_number	varchar(15)	No		
model_generation_introduced_year	year(4)	No		
model_generation_discontinued_year	year(4)	Yes	*NULL*	

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	model_generation_ID	13	A	No	

models

Column	Type	Null	Default	Comments
model_id *(Primary)*	int(11)	No		
model_name	varchar(30)	No		
model_logo	varchar(40)	No		
manufacturer_ID	int(11)	No		
model_generation_ID	int(11)	No		

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	model_id	12	A	No	
manufacturer_ID	BTREE	No	No	manufacturer_ID	12	A	No	
model_generation_ID	BTREE	No	No	model_generation_ID	12	A	No	

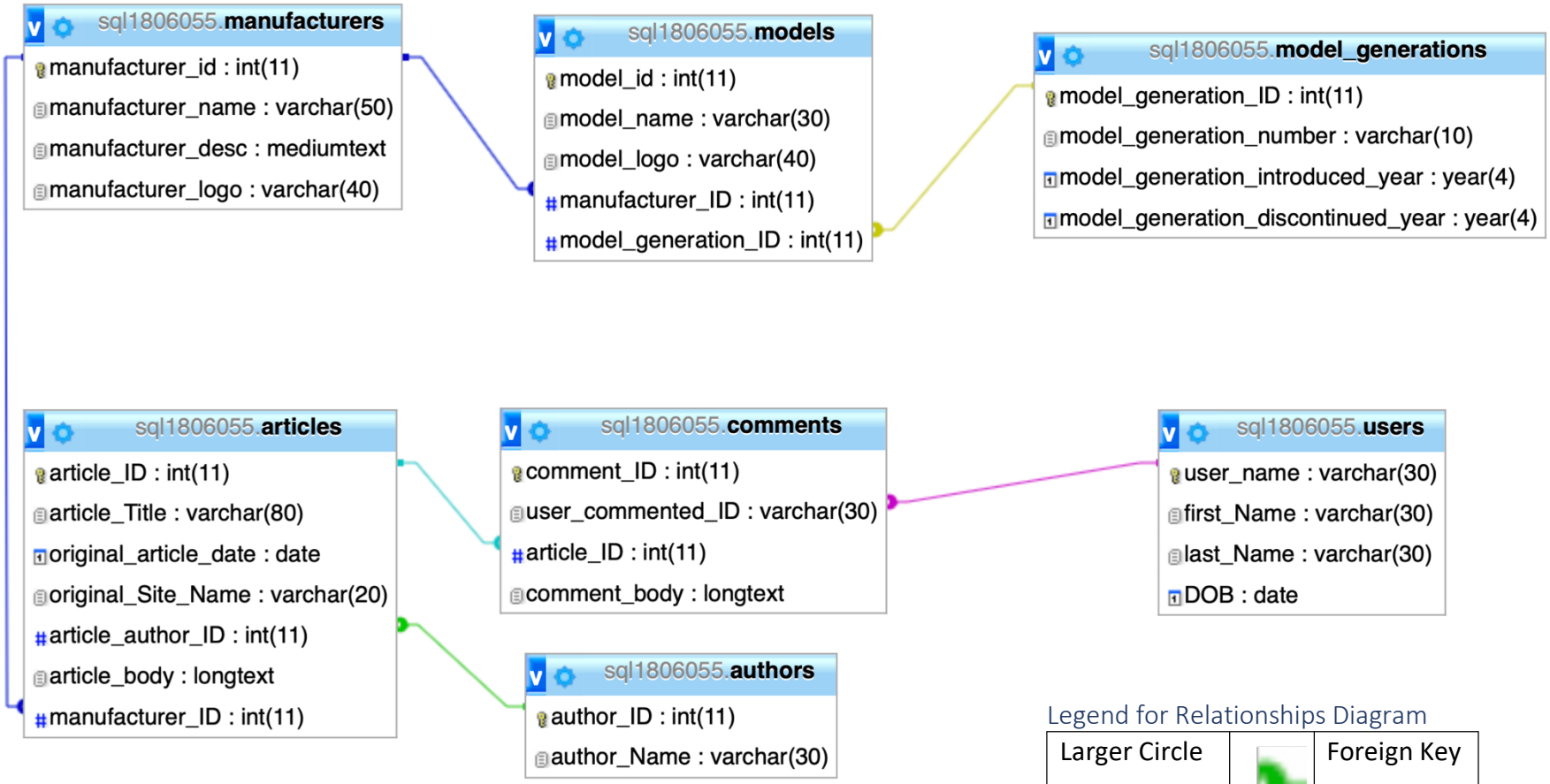
users

Column	Type	Null	Default	Comments
user_name *(Primary)*	varchar(30)	No		
first_Name	varchar(30)	No		
last_Name	varchar(30)	No		
DOB	date	No		

Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	user_name	1	A	No	

Relationships between Tables



Legend for Relationships Diagram

Larger Circle		Foreign Key
Smaller Circle		Primary Key

Give 3 examples, preferably related to the site, of issues with the relational database model.

- One issue with the relational database model is that you have to set up the field length limits etc before you have entered the data, meaning that you have to predict the length of the data that you will be adding in; too little space and you will be unable to fit your information in, and too much space constitutes a waste of memory and storage. Relating to this website, for the article_body attribute in the articles table I erred on the side of caution and select a datatype that allowed large amounts of text (longtext), as this is what an article inherently is anyway.

- The larger the database is, in terms of tables, relationships, attributes etc, the slower it will eventually become, affecting performance of the website of which the database is connected to. Therefore, as the size and scale of this database grows, the slower it, and the CMSS website that I am actively developing, will become.

- Finally, if the requirements change, in regards to the needs of what the website/system that the database is used for change (due to any number of factors), then the relational database model will prove inflexible with these changes, and to try and modify the schema will be a difficult task, and in some cases could lead to data loss. This potential issue pertains to this website because the website itself could change further down the line, which then may require alterations to be made in the database, which could prove challenging, due to the aforementioned reasons.