



Mini Project

Blood Bank Management System

Course Title: **Database Systems**

Course Code: **CSE302**

Lab Instructor: **Nishat Tasnim Niloy**

Section: **04**

Group: **Hop Monster Theory**

Member 1: **Samiu Esika Upoma**

ID: **2020-1-60-082**

Member 2: **Israfil Arman**

ID: **2020-1-60-086**

Member 3: **Zarin Tasnim Nuzhat**

ID: **2020-1-60-211**

Member 4: **Md. Habibuzzaman**

ID: **2020-1-60-212**

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Story

ER diagrams are usually used to resolve some sort of issue and so they always have a certain problem to solve. In the Blood Bank Management System, we have tried to solve as much problem as possible. Here, all the tables have one primary key to identify them distinctly and foreign key/keys to create link between tables. Moreover, we have created roles to maintain authorization above the data in the database. Furthermore, we have implemented normalization to reduce delicacy of records.

Actual Data Objects

User: user_id, user_name, user_cont, user_email, user_add

Authentication: ath_id, ath_role_id, ath_user_name, user_pass

Roles: role_id, role_name, role_desc

Permission: per_id, per_role_id, per_limit, per_name

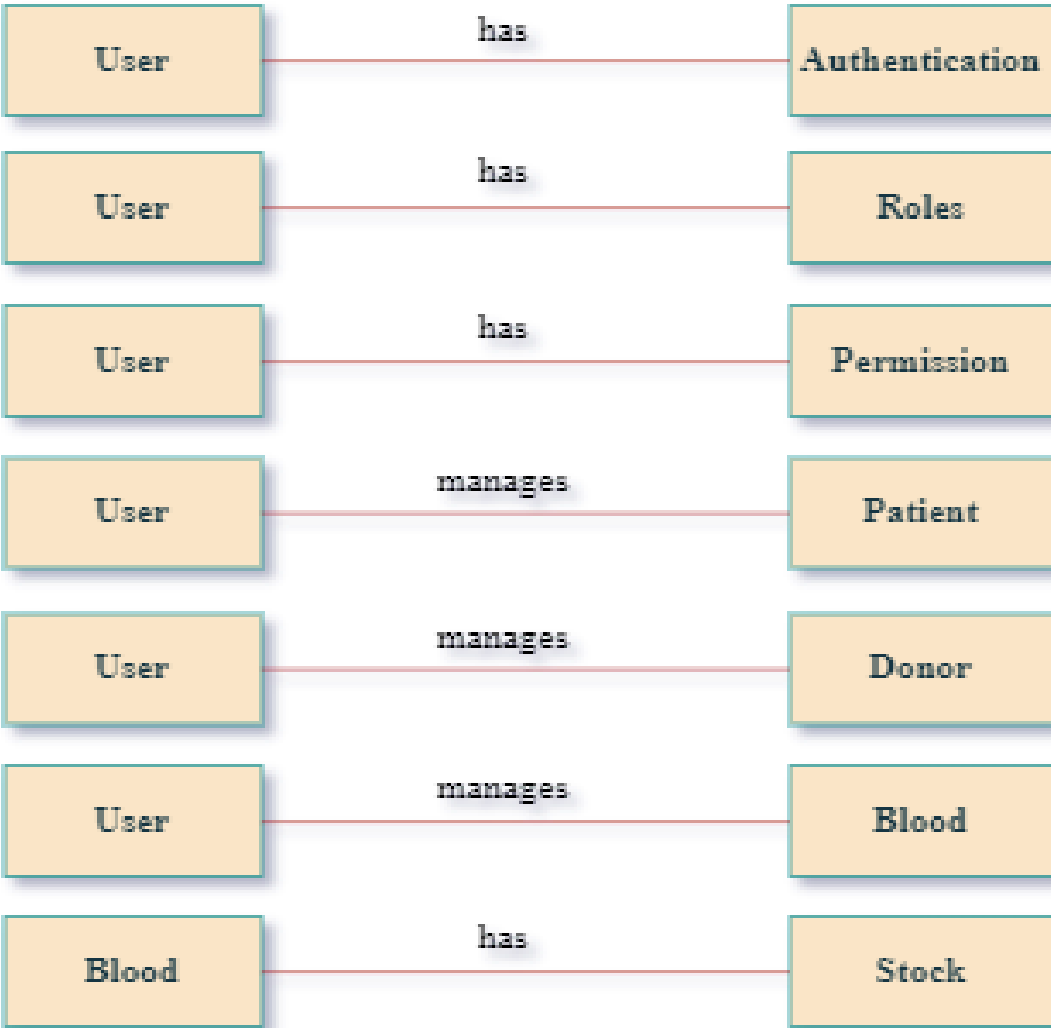
Patient: pat_id, pat_name, pat_gender, pat_age, pat_cont, pat_email, pat_add

Donor: dnr_id, dnr_name, dnr_gender, pat_age, dnr_cont, dnr_email, dnr_add

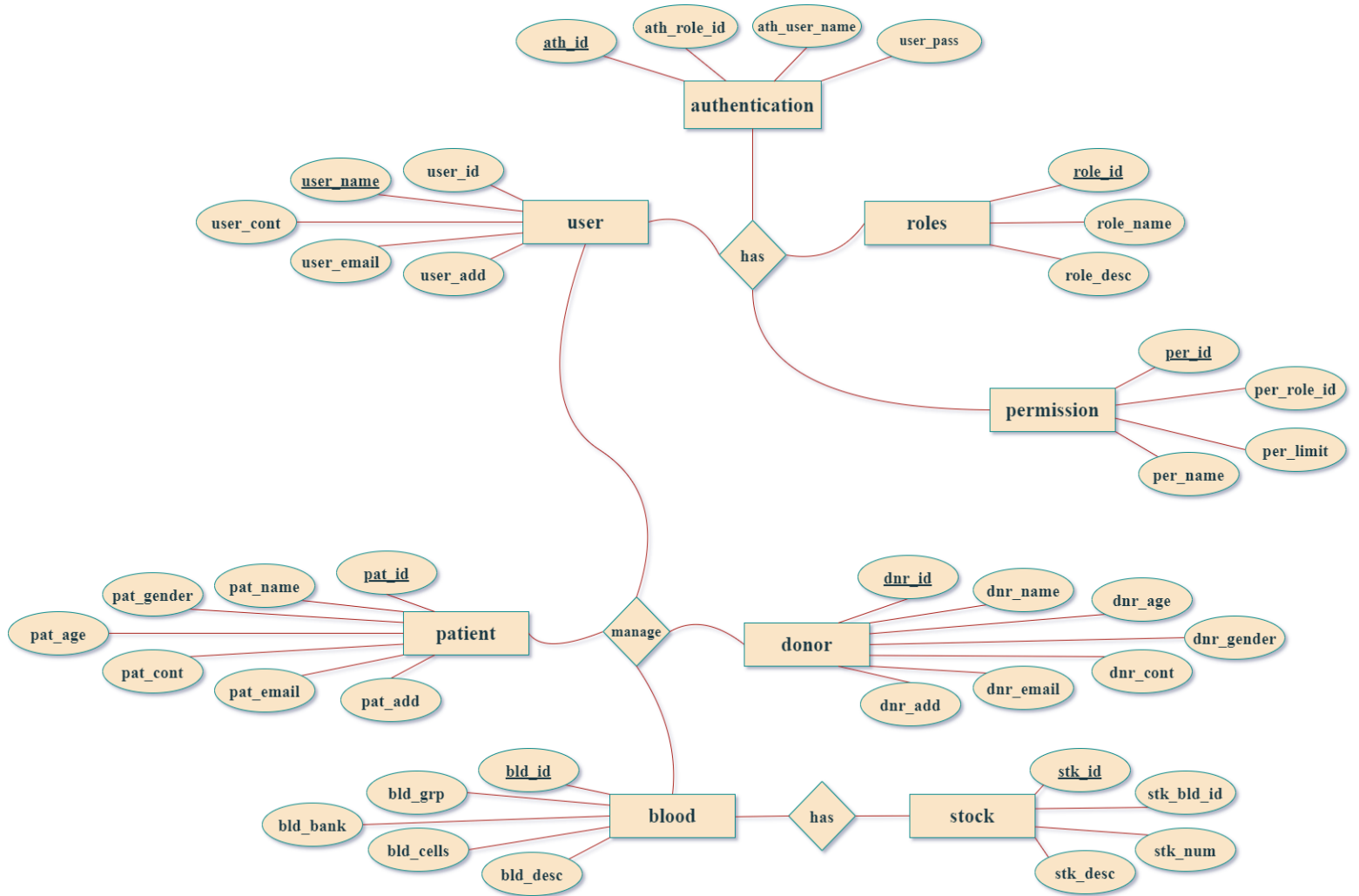
Blood: bld_id, bld_grp, bld_bank, bld_cells, bld_desc

Stock: stk_id, stk_bld_id, stk_num, stk_desc

Relation among Data Objects



ER Diagram



Schema Tables

Table 1: Schema table for User

User		
Attributes	Types	Size
user_id	int	10
user_name	varchar	50
user_cont	int	40
user_email	varchar	50
user_add	varchar	255

Table 2: Schema table for Authentication

Authentication		
Attributes	Types	Size
ath_id	int	10
ath_role_id	int	10
ath_user_name	varchar	50
ath_pass	varchar	25

Table 3: Schema table for Roles

Roles		
Attributes	Types	Size
role_id	int	10
role_name	varchar	50
role_desc	varchar	255

Table 4: Schema table for Permission

Permission		
Attributes	Types	Size
per_id	int	10
per_role_id	int	10
per_limit	varchar	25
per_name	varchar	30

Table 5: Schema table for Patient

Patient		
Attributes	Types	Size
pat_id	int	10
pat_name	varchar	50
pat_gender	varchar	10
pat_age	int	3
pat_cont	varchar	40
pat_email	varchar	50
pat_add	varchar	255

Table 6: Schema table Donor

Donor		
Attributes	Types	Size
dnr_id	int	10
dnr_name	varchar	50
dnr_gender	varchar	10
dnr_age	int	3
dnr_cont	varchar	40
dnr_email	varchar	50
dnr_add	varchar	255

Table 7: Schema table Blood

Blood		
Attributes	Types	Size
bld	varchar	10
bld_grp	varchar	5
bld_bank	varchar	25
bld_cells	varchar	25
bld_desc	varchar	255

Table 8: Schema table Stock

Stock		
Attributes	Types	Size
stk_id	int	100
stk_bld_id	int	10
stk_num	int	100
stk_desc	varchar	255

Creating the database **Blood Bank Management System** and creating the tables from given ER diagram:

Server: 127.0.0.1 » Database: blood bank management system

Structure SQL Search Query Export Import Operations Privileges Routines Events Triggers M

Filters

Containing the word:

Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> authentication	★ Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_general_ci	48.0 KiB	-
<input type="checkbox"/> blood	★ Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_general_ci	32.0 KiB	-
<input type="checkbox"/> donor	★ Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/> patient	★ Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/> permission	★ Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_general_ci	32.0 KiB	-
<input type="checkbox"/> roles	★ Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/> stock	★ Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_general_ci	32.0 KiB	-
<input type="checkbox"/> user	★ Browse Structure Search Insert Empty Drop	5	InnoDB	utf8mb4_general_ci	16.0 KiB	-
8 tables	Sum	40	InnoDB	utf8mb4_general_ci	208.0 KiB	0 B

⬆ ☐ Check all With selected:

Adding the attributes in table **user** which have five attributes with one primary key:

Primary key(user_name)

Server: 127.0.0.1 » Database: blood bank management system » Table: user

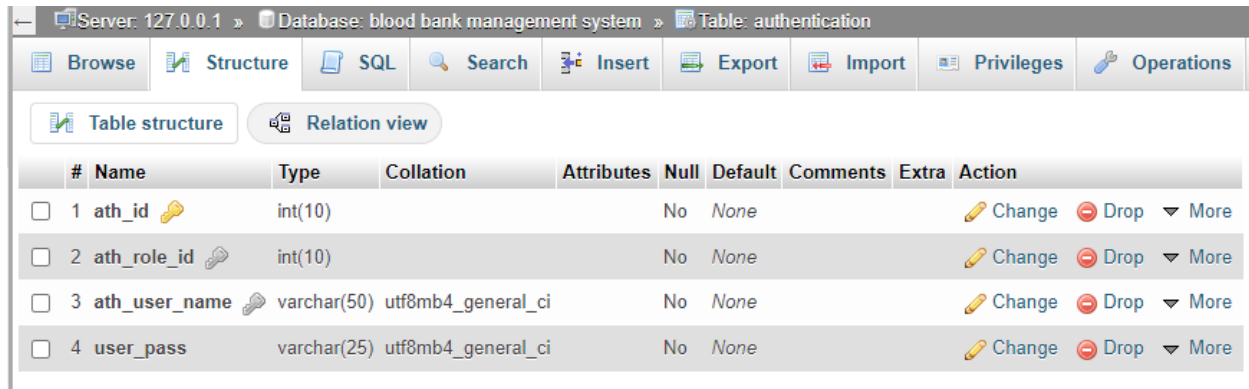
Browse Structure SQL Search Insert Export Import Privileges Operations Tracking Triggers

Table structure Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/> 1	user_id	int(10)			No	None			Change Drop More
<input type="checkbox"/> 2	user_name	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/> 3	user_cont	int(40)			No	None			Change Drop More
<input type="checkbox"/> 4	user_email	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/> 5	user_add	varchar(255)	utf8mb4_general_ci		No	None			Change Drop More

Adding the attributes in table **authentication** which have four attributes, one primary key and two foreign key:

Primary key(ath_id), foreign keys(ath_role_id,ath_user_name)

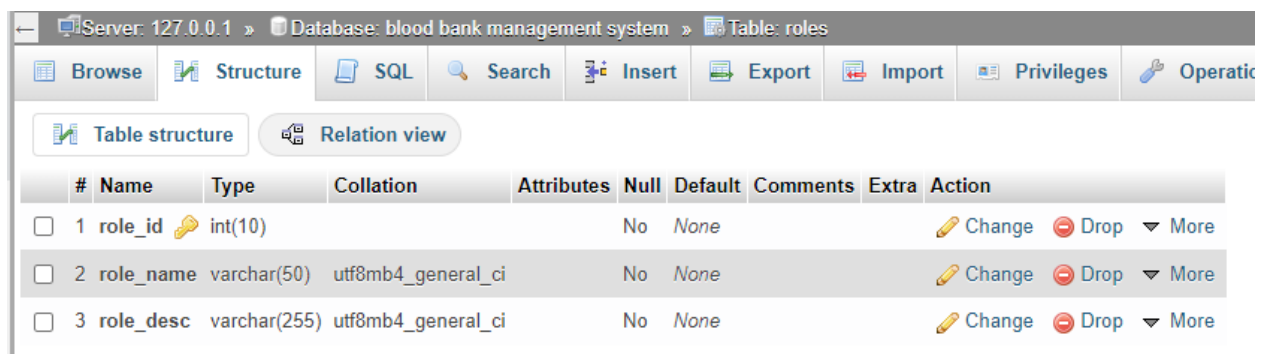


The screenshot shows the phpMyAdmin interface for a database named 'blood bank management system'. The 'Table: authentication' is selected. The 'Table structure' tab is active, displaying a table with 4 columns: ath_id, ath_role_id, ath_user_name, and user_pass. The ath_id column is marked as the primary key.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 ath_id	int(10)			No	None			Change Drop More
<input type="checkbox"/>	2 ath_role_id	int(10)			No	None			Change Drop More
<input type="checkbox"/>	3 ath_user_name	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	4 user_pass	varchar(25)	utf8mb4_general_ci		No	None			Change Drop More

Adding the attributes in table **roles** which have three attributes with one primary key:

Primary key(role_id)




The screenshot shows the phpMyAdmin interface for a database named 'blood bank management system'. The 'Table: roles' is selected. The 'Table structure' tab is active, displaying a table with 3 columns: role_id, role_name, and role_desc. The role_id column is marked as the primary key.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 role_id	int(10)			No	None			Change Drop More
<input type="checkbox"/>	2 role_name	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	3 role_desc	varchar(255)	utf8mb4_general_ci		No	None			Change Drop More

Adding the attributes in table **permission** which have four attributes, one primary key and one foreign key:

Primary key(per_id), foreign key(per_role_id)

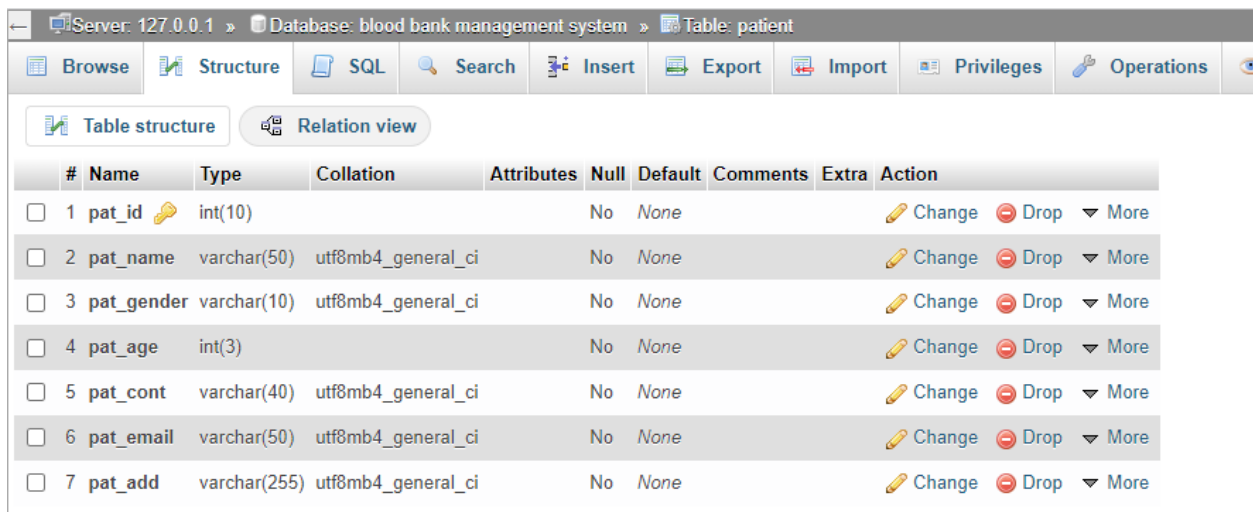


The screenshot shows the phpMyAdmin interface for a database named 'blood bank management system'. The 'Table: permission' is selected. The 'Table structure' tab is active, displaying a table with 4 columns: per_id, per_role_id, per_limit, and per_name. The per_id column is the primary key.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	per_id	int(10)			No	None			Change Drop More
2	per_role_id	int(10)			No	None			Change Drop More
3	per_limit	varchar(25)	utf8mb4_general_ci		No	None			Change Drop More
4	per_name	varchar(30)	utf8mb4_general_ci		No	None			Change Drop More

Adding the attributes in table **patient** which have seven attributes with one primary key:

Primary key(pat_id)

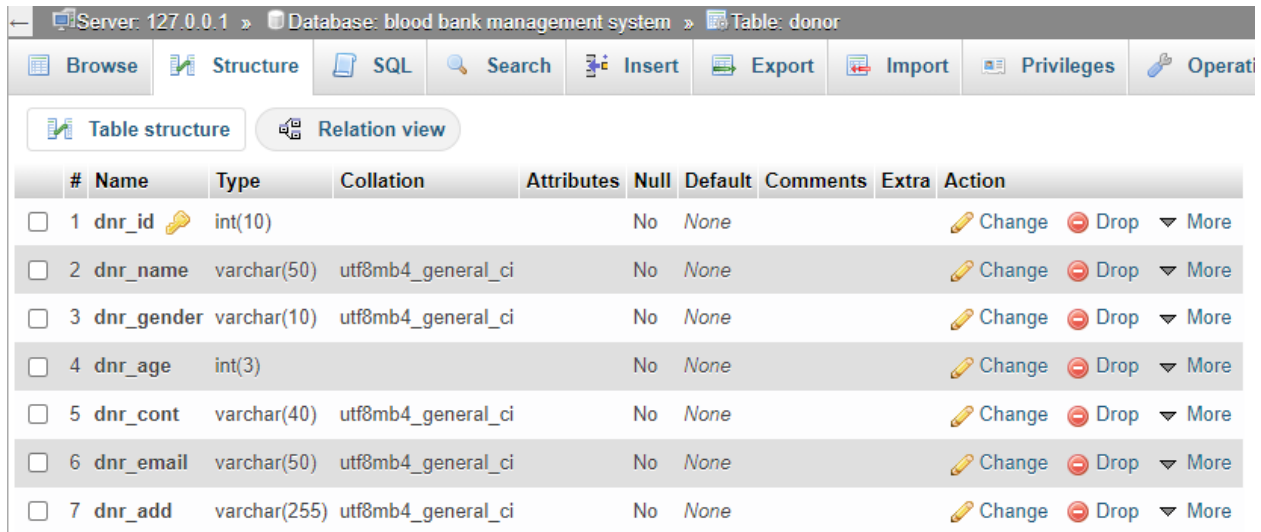


The screenshot shows the phpMyAdmin interface for a database named 'blood bank management system'. The 'Table: patient' is selected. The 'Table structure' tab is active, displaying a table with 7 columns: pat_id, pat_name, pat_gender, pat_age, pat_cont, pat_email, and pat_add. The pat_id column is the primary key.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	pat_id	int(10)			No	None			Change Drop More
2	pat_name	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
3	pat_gender	varchar(10)	utf8mb4_general_ci		No	None			Change Drop More
4	pat_age	int(3)			No	None			Change Drop More
5	pat_cont	varchar(40)	utf8mb4_general_ci		No	None			Change Drop More
6	pat_email	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
7	pat_add	varchar(255)	utf8mb4_general_ci		No	None			Change Drop More

Adding the attributes in table **donor** which have seven attributes with one primary key:

Primary key(dnr_id)

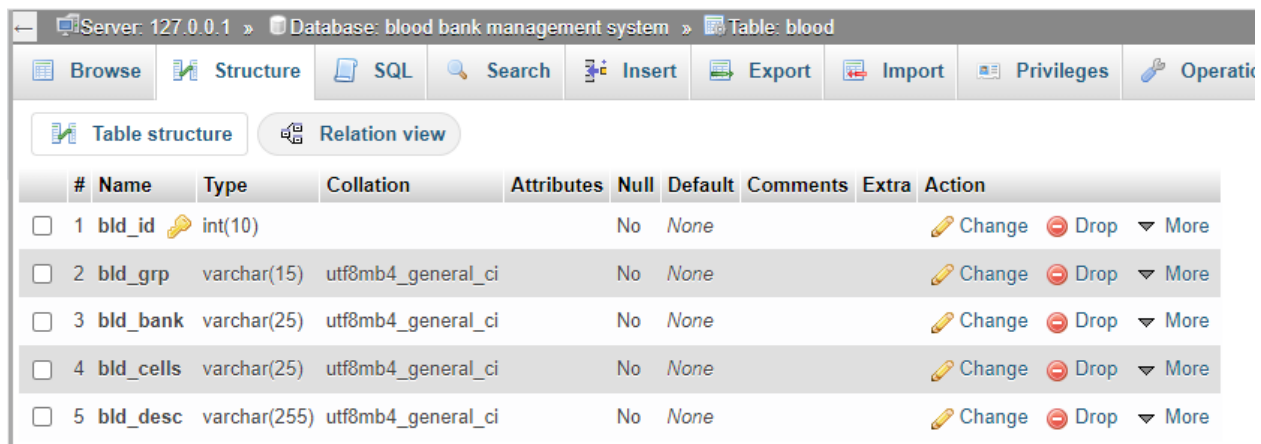


The screenshot shows the phpMyAdmin interface for a database named 'blood bank management system'. The 'Table: donor' is selected. The 'Table structure' tab is active, displaying a table with 7 columns. The first column, 'dnr_id', is the primary key. The columns are: dnr_id (int(10)), dnr_name (varchar(50)), dnr_gender (varchar(10)), dnr_age (int(3)), dnr_cont (varchar(40)), dnr_email (varchar(50)), and dnr_add (varchar(255)). All columns have a 'utf8mb4_general_ci' collation and are not null. Each row has 'Action' links for 'Change', 'Drop', and 'More'.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 dnr_id	int(10)			No	None			Change Drop More
<input type="checkbox"/>	2 dnr_name	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	3 dnr_gender	varchar(10)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	4 dnr_age	int(3)			No	None			Change Drop More
<input type="checkbox"/>	5 dnr_cont	varchar(40)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	6 dnr_email	varchar(50)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	7 dnr_add	varchar(255)	utf8mb4_general_ci		No	None			Change Drop More

Adding the attributes in table **blood** which have five attributes with one primary key:

Primary key(bld_id)

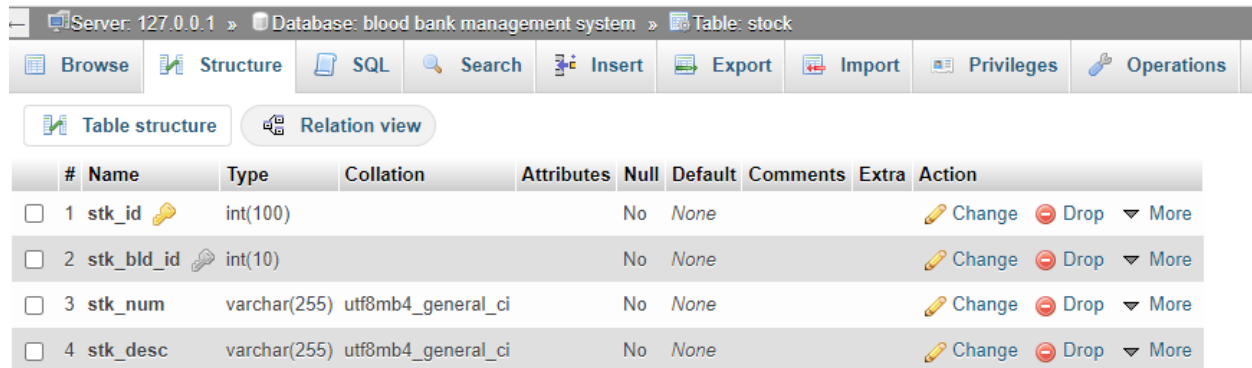


The screenshot shows the phpMyAdmin interface for the same database. The 'Table: blood' is selected. The 'Table structure' tab is active, displaying a table with 5 columns. The first column, 'bld_id', is the primary key. The columns are: bld_id (int(10)), bld_grp (varchar(15)), bld_bank (varchar(25)), bld_cells (varchar(25)), and bld_desc (varchar(255)). All columns have a 'utf8mb4_general_ci' collation and are not null. Each row has 'Action' links for 'Change', 'Drop', and 'More'.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 bld_id	int(10)			No	None			Change Drop More
<input type="checkbox"/>	2 bld_grp	varchar(15)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	3 bld_bank	varchar(25)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	4 bld_cells	varchar(25)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	5 bld_desc	varchar(255)	utf8mb4_general_ci		No	None			Change Drop More

Adding the attributes in table **stock** which have four attributes, one primary key and one foreign key:

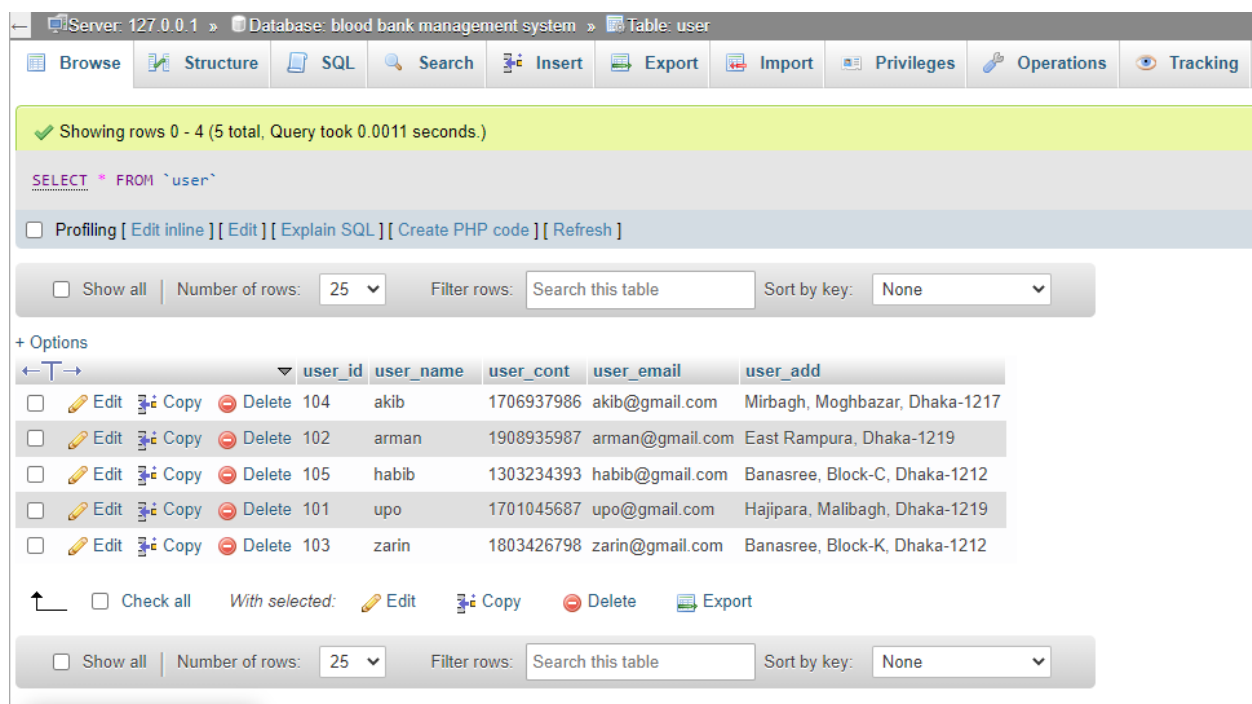
Primary key(stk_id), foreign key(stk_bld_id)



The screenshot shows the phpMyAdmin interface for a database named 'blood bank management system'. The 'Table: stock' is selected. The 'Table structure' tab is active, displaying the following table structure:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 stk_id	int(100)			No	None			Change Drop More
<input type="checkbox"/>	2 stk_bld_id	int(10)			No	None			Change Drop More
<input type="checkbox"/>	3 stk_num	varchar(255)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	4 stk_desc	varchar(255)	utf8mb4_general_ci		No	None			Change Drop More

Inserting the values into table **user**:



The screenshot shows the phpMyAdmin interface for a database named 'blood bank management system'. The 'Table: user' is selected. The 'Structure' tab is active, displaying the following table structure:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 user_id	int(10)			No	None			Change Drop More
<input type="checkbox"/>	2 user_name	varchar(255)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	3 user_cont	varchar(255)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	4 user_email	varchar(255)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	5 user_add	varchar(255)	utf8mb4_general_ci		No	None			Change Drop More

Below the structure, the 'Data' tab is active, showing the following data:

	user_id	user_name	user_cont	user_email	user_add
<input type="checkbox"/>	104	akib	1706937986	akib@gmail.com	Mirbagh, Moghbazar, Dhaka-1217
<input type="checkbox"/>	102	arman	1908935987	arman@gmail.com	East Rampura, Dhaka-1219
<input type="checkbox"/>	105	habib	1303234393	habib@gmail.com	Banasree, Block-C, Dhaka-1212
<input type="checkbox"/>	101	upo	1701045687	upo@gmail.com	Hajipara, Malibagh, Dhaka-1219
<input type="checkbox"/>	103	zarin	1803426798	zarin@gmail.com	Banasree, Block-K, Dhaka-1212

Inserting the values into table **authentication**:

Server: 127.0.0.1 » Database: blood bank management system » Table: authentication

Showing rows 0 - 4 (5 total, Query took 0.0012 seconds.)

```
SELECT * FROM `authentication`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

				ath_id	ath_role_id	ath_user_name	user_pass
<input type="checkbox"/>	Edit	Copy	Delete	901	501	habib	big6
<input type="checkbox"/>	Edit	Copy	Delete	902	502	akib	bika007
<input type="checkbox"/>	Edit	Copy	Delete	903	601	arman	chottoaru
<input type="checkbox"/>	Edit	Copy	Delete	904	602	zarin	bangi
<input type="checkbox"/>	Edit	Copy	Delete	905	701	upo	sunflower

Check all | With selected: Edit Copy Delete Export

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Inserting the values into table **roles**:

Server: 127.0.0.1 » Database: blood bank management system » Table: roles

Showing rows 0 - 4 (5 total, Query took 0.0008 seconds.)

```
SELECT * FROM `roles`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

				role_id	role_name	role_desc
<input type="checkbox"/>	Edit	Copy	Delete	501	admin	admin can view, entry, delete and modify the table...
<input type="checkbox"/>	Edit	Copy	Delete	502	admin	admin can view, entry, delete and modify the table...
<input type="checkbox"/>	Edit	Copy	Delete	601	clerk	clerk can view, entry, update data
<input type="checkbox"/>	Edit	Copy	Delete	602	clerk	clerk can view, entry, update data
<input type="checkbox"/>	Edit	Copy	Delete	701	viewer	viewer can only view data with specific informatio...

Check all | With selected: Edit Copy Delete Export

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Inserting the values into table **permission**:

Server: 127.0.0.1 » Database: blood bank management system » Table: permission

Browse Structure SQL Search Insert Export Import Privileges Operations Tracking

Showing rows 0 - 4 (5 total, Query took 0.0005 seconds.)

```
SELECT * FROM `permission`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

			per_id	per_role_id	per_limit	per_name	
<input type="checkbox"/>	Edit	Copy	Delete	1001	501	4	read, insert, update, delete
<input type="checkbox"/>	Edit	Copy	Delete	1002	502	4	read, insert, update, delete
<input type="checkbox"/>	Edit	Copy	Delete	1003	601	3	read, insert, update
<input type="checkbox"/>	Edit	Copy	Delete	1004	602	3	read, insert, update
<input type="checkbox"/>	Edit	Copy	Delete	1005	701	1	read

Check all | With selected: Edit Copy Delete Export

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Query results operations

Inserting the values into table **patient**:

Server: 127.0.0.1 » Database: blood bank management system » Table: patient

Browse Structure SQL Search Insert Export Import Privileges Operations Tracking Trigger

Showing rows 0 - 4 (5 total, Query took 0.0005 seconds.)

```
SELECT * FROM `patient`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

				pat_id	pat_name	pat_gender	pat_age	pat_cont	pat_email	pat_add
<input type="checkbox"/>	Edit	Copy	Delete	10001	Samiu Esika	Female	21	01706548474	esika.samiu@gamil.com	Khilagaon Tilpapara, Dhaka-1219
<input type="checkbox"/>	Edit	Copy	Delete	10002	Safia Hasnin	Female	22	01986343876	safia11@gamil.com	Banasree, Block-A, Dhaka-1212
<input type="checkbox"/>	Edit	Copy	Delete	10003	Tanjilul Haq	Male	17	01508754399	haq69@gmail.com	Paltan, Dhaka-1000
<input type="checkbox"/>	Edit	Copy	Delete	10004	Abdul Ahad	Male	40	01409876532	ahad842@gamil.com	Demra, Dhaka-1360
<input type="checkbox"/>	Edit	Copy	Delete	10005	Shahriar Tasfi	Male	35	01302442555	tasfi999@gmail.com	Mirpur-2, Dhaka-1216

Check all | With selected: Edit Copy Delete Export

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Inserting the values into table **donor**:

Server: 127.0.0.1 » Database: blood bank management system » Table: donor

Showing rows 0 - 4 (5 total, Query took 0.0008 seconds.)

```
SELECT * FROM `donor`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

		dnr_id	dnr_name	dnr_gender	dnr_age	dnr_cont	dnr_email	dnr_add
<input type="checkbox"/>	Edit Copy Delete	20001	Samiha Chowdhury	Female	23	01509435672	samiha@gamil.com	Banasree, Block-E, Dhaka-1212
<input type="checkbox"/>	Edit Copy Delete	20002	Akib Rayhan	Male	23	01330324379	rayhanakib9@gamil.com	Banasree, Block-C, Dhaka-1212
<input type="checkbox"/>	Edit Copy Delete	20003	Muqeet Ryan	Male	25	01682931308	ryan.muqeet@gmail.com	Mirbagh, Moghbazar, Dhaka-1217
<input type="checkbox"/>	Edit Copy Delete	20004	Nishat Tasnim	Female	28	01409876523	nishat.tasnim@gmail.com	Azimpur, Dhaka-1230
<input type="checkbox"/>	Edit Copy Delete	20005	Isirat Mahbub	Female	25	0150696763	hema@gamil.com	Khilgaon, Dhaka-1219

☐ Check all | With selected: Edit Copy Delete Export

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Inserting the values into table **blood**:

Server: 127.0.0.1 » Database: blood bank management system » Table: blood

Showing rows 0 - 4 (5 total, Query took 0.0007 seconds.)

```
SELECT * FROM `blood`
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

		bld_id	bld_grp	bld_bank	bld_cells	bld_desc
<input type="checkbox"/>	Edit Copy Delete	9991	O+	Malibagh	RBC	Red blood cell, Antibodies-A & B, Antigen-none, Rh...
<input type="checkbox"/>	Edit Copy Delete	9992	O-	Malibagh	RBC	Red blood cell, Antibodies-A & B, Antigen-none, Rh...
<input type="checkbox"/>	Edit Copy Delete	9993	AB+	Dhanmondi	WBC	White Blood Cell, Antibody-none, Antigen- A & B, R...
<input type="checkbox"/>	Edit Copy Delete	9994	A+	Dhanmondi	RBC, Plasma	Plasma, Red Blood Cell, Antibody- B, Antigen - A, ...
<input type="checkbox"/>	Edit Copy Delete	9995	B-	Mohakhali	RBC, Plasma	Plasma, Red Blood Cell, Antibody- A, Antigen - B, ...

☐ Check all | With selected: Edit Copy Delete Export

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Inserting the values into table **stock**:

Server: 127.0.0.1 » Database: blood bank management system » Table: stock

Browse Structure SQL Search Insert Export Import Privileges Operations Tracking

✓ Showing rows 0 - 4 (5 total, Query took 0.0006 seconds.)

`SELECT * FROM `stock``

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

				stk_id	stk_bld_id	stk_num	stk_desc
<input type="checkbox"/>	Edit	Copy	Delete	201	9994	146095	DATE:18/04/2022 EXP :03/06/2022
<input type="checkbox"/>	Edit	Copy	Delete	202	9993	146096	DATE :1/04/2022 EXP :15/05.2022
<input type="checkbox"/>	Edit	Copy	Delete	203	9995	146097	DATE:18/04/2022 EXP -03/06/2022
<input type="checkbox"/>	Edit	Copy	Delete	204	9991	146098	DATE:10/03/2022 EXP :15/04/2022
<input type="checkbox"/>	Edit	Copy	Delete	205	9992	146099	DATE:15/04/2022 EXP :01/06/2022

↑ ☐ Check all With selected: Edit Copy Delete Export