

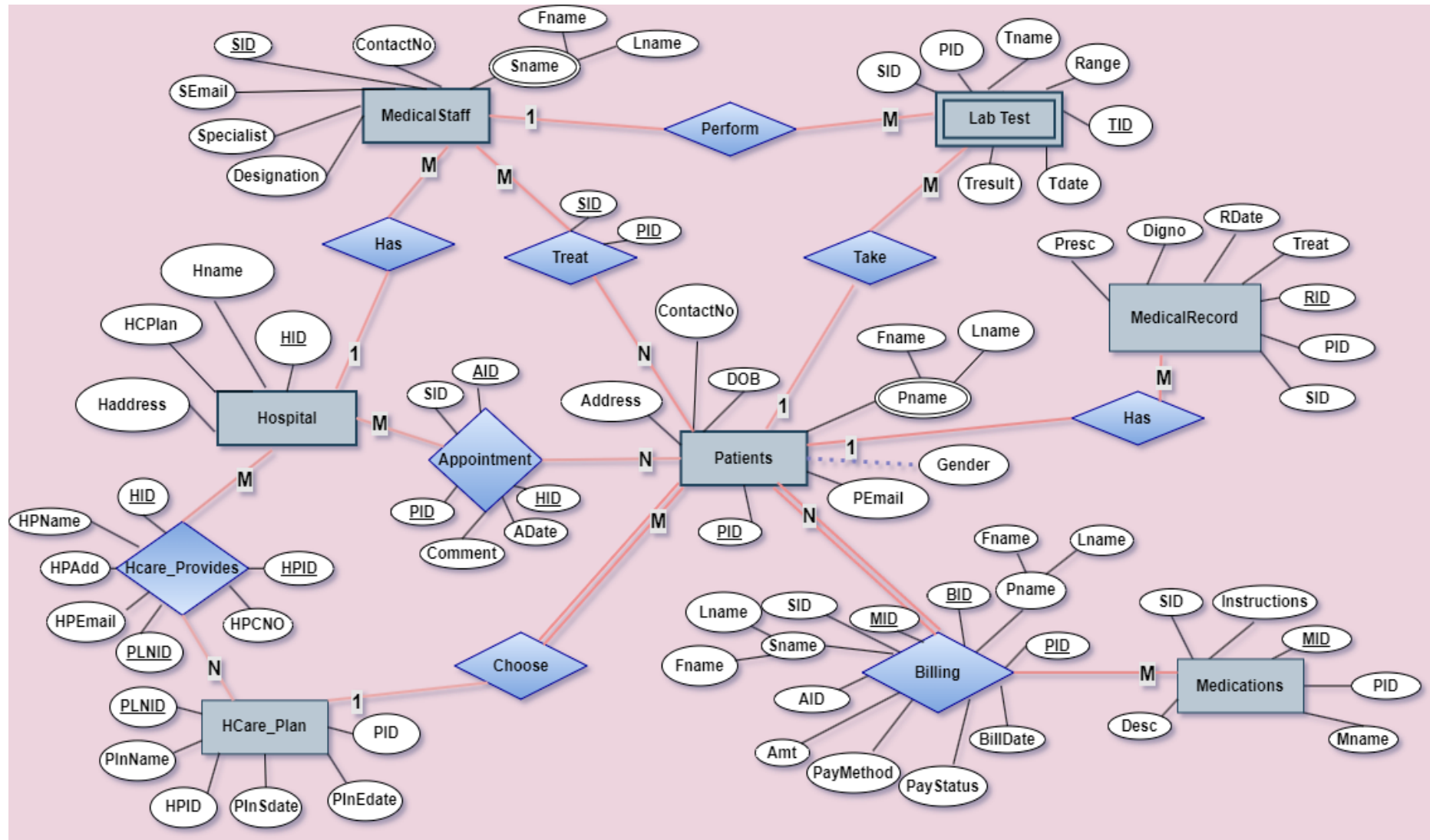
DELIVERABLE 2

Group N

PROJECT TOPIC: HEALTHCARE MANAGEMENT SYSTEMS

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Entity Relationship Diagram (ERD)



ABBREVIATIONS:

- PID - PATIENT ID
- Pname - PATIENT NAME
- Fname, Lname - FIRST NAME, LAST NAME
- DOB - DATE OF BIRTH
- HID - HOSPITAL ID
- Haddress - HOSPITAL ADDRESS
- HCPlan - HEALTHCARE PLAN
- SID - STAFF ID / MEDICAL STAFF ID
- Sname - STAFF NAME
- SEmail - STAFF EMAIL
- AID - APPOINTMENT ID
- ADate - APPOINTMENT DATE
- RID - RECORD ID / MEDICAL RECORD ID
- RDate - RECORD DATE
- Diagno - DIAGNOSIS
- Treat - TREATMENT
- Presc - PRESCRIPTION
- BID - BILL ID
- Amt - AMOUNT / BILLING AMOUNT
- payStatus - PAYMENT STATUS
- MID - MEDICATION ID
- Mname - MEDICATION NAME
- desc - DESCRIPTION / MEDICATION DESCRIPTION
- HCareProviders - HEALTHCARE PROVIDERS
- HCarePlan - HEALTHCARE PLAN
- HPID - HEALTHCARE PROVIDER ID
- HPName - HEALTHCARE PROVIDER NAME
- HPAdd - HEALTHCARE PROVIDER ADDRESS
- HPCNO - HEALTHCARE PROVIDER CONTACT NO
- HPEmail - HEALTHCARE PROVIDER EMAIL
- PLNID - HEALTHCARE PLAN ID
- PlnName - HEALTHCARE PLAN NAME
- PlnSdate - HEALTHCARE PLAN START DATE
- PlnEdate - HEALTHCARE PLAN END DATE
- TID - TEST ID / LAB TEST ID
- Tdate - LAB TEST DATE
- TName - LAB TEST NAME
- Tresults - LAB TEST RESULTS

- Pmethod - PAYMENT METHOD

List of schema from ER diagram

- Patients(PID, Pname[Fname , Lname], DOB , Gender , address , ContactNo , PEmail)
- Hospital(HID , Hname , Haddress ,HCPlan)
- MedicalStaff(SID , Sname [Fname , Lname], Specialist ,ContactNo , SEmail , Designation)
- Appointment(AID , PID , SID , ADate , Comment,HID)
- MedicalRecords(RID , PID , SID , Rdate , Diagno, Treat , Presc)
- Billing(BID , PID , MID, Pname[Fname,Lname] , SID , sname[Lname,fname], AID, BillDate , Amt , payStatus , Pmethod)
- Medications(MID , Mname, PID , SID , desc , Instructions)
- Hcare_provides (HPID , HPName , HPAdd , HPCNO , HPEmail, PLNID, HID)
- Hcare_plan (PLNID , PID , HPID , PlnName , PlnSdate , PlnEdate)
- LabTests(TID , PID, SID , Tdate , TName , TResults , Range)
- Treat(PID, SID)

We have updated the ERD and Schema according to the feedback from professor

PATIENT

[illegible]

HEALTHCARE PROVIDER

150 • `select * from healthcareprovider;`

Result Grid Filter Rows: <input type="text"/> Edit: Export/Import: Wrap Cell Content:					
	HealthcareproviderID	Healthcareprovider_name	Healthcareprovider_address	Healthcareprovider_contactno	Healthcareprovider_email
▶	112	Talane	Suite 18	537 560 3520	mazema5@google.es
	115	Midel	PO Box 81000	686 590 2388	mharverson4@devhub.com
	117	Rhynoodle	Room 1481	471 867 2827	bguillard6@nytimes.com
	118	Zooveo	Room 1568	404 449 3090	elissandri0@scribd.com
	124	Wikibox	Apt 93	860 256 9031	mpopov3@hatena.ne.jp
	128	Katz	19th Floor	571 128 1584	jcrosstonc@usda.gov
	130	Eimbee	Apt 1301	107 294 6144	estroobandd@miibeian.gov.cn
	133	Aimbu	12th Floor	689 428 3300	abarthel8@prweb.com
	135	Avamba	PO Box 88510	464 995 3708	chartfleet7@ucsd.edu
	136	Oloo	Apt 1830	505 755 5629	cgreystoke2@livejournal.com
	141	Kimia	Suite 16	315 232 3707	aedgeson1@epa.gov
	145	Skiptube	Apt 618	734 356 6148	tbuntinea@nyu.edu
	147	Linktype	Suite 87	223 146 8810	wgurnee9@state.gov
	150	Lazz	Apt 1547	214 148 5879	sgrelakb@amazon.co.jp
★	NULL	NULL	NULL	NULL	NULL

HEALTHCARE PLAN

```
202 • select * from Healthcareplan;
```







```
203
```

Result Grid |   Filter Rows: | Edit:    | Export/Import:   | Wrap Cell Content: 

	HealthcareplanID	PatientID	HealthcareproviderID	Healthcareplan_name	Healthcareplan_startdate	Healthcareplan_enddate
▶	201	3	112	Harber, Kuphal	2022-07-28	2023-12-21
	202	6	118	Goldner Inc	2022-08-08	2023-12-07
	203	9	147	Tromp Inc	2022-08-31	2023-02-23
	206	9	124	O'Keefe-Cassin	2023-08-12	2023-12-18
	212	7	136	Friesen and Sipes	2022-12-19	2023-03-05
	241	6	136	Schmeler LLC	2022-09-12	2023-12-03
	242	12	117	Denesik and Sons	2022-02-17	2023-04-16
	244	1	145	Smith Inc	2022-07-18	2023-11-05
	245	8	141	Dibbert-Beer	2023-07-17	2023-12-18
	248	4	128	Cassin-Stark	2022-07-16	2023-11-14
	250	5	133	Bernier Inc	2023-04-02	2023-12-29
	289	3	135	Rosenbaum and Ritchie	2023-01-15	2023-11-14
*	NULL	NULL	NULL	NULL	NULL	NULL

HOSPITAL

218 • `select * from Hospital;`

Result Grid				
Filter Rows: <input type="text"/>				
Edit:   				
Export/Import:  				
Wrap Cell Content: 				
	HospitalID	Hospital_name	Hospital_address	HealthcareplanID
▶	306	Weimann, Larkin and Koss	67953 Forest Avenue	203
	310	Smith and Sons	9 Moose Lane	289
	311	Bergstrom-Grimes	29684 Prentice Terrace	241
	313	Hackett and Macejkovic	43425 Arapahoe Road	289
	323	Runte-Kulas	62067 Emmet Way	212
	325	Monahan, Huel and Kling	8 Arkansas Road	212
	334	Blick LLC	7591 Helena Alley	245
	335	Schulist LLC	96730 Northport Avenue	201
	344	Kuvalis-Runolfsson	4229 Carpenter Way	244
	357	Grant-Deckow	4898 Fair Oaks Alley	206
	361	Mann Inc	562 Anzinger Lane	203
	378	Hansen and Sons	596 Springview Plaza	202
	385	Toy Inc	89 Nova Point	250
	386	Sipes and Considine	42350 Declaration Cross...	250
•	NULL	NULL	NULL	NULL

MEDICAL STAFF









```
167 • select * from Medicalstaff;
```

[illegible]

APPOINTMENT








256 • `select * from Appointment;`

257

Result Grid   Filter Rows: <input type="text"/> Edit:    Export/Import:   Wrap Cell Content: 						
	AppointmentID	PatientID	HospitalID	MedicalstaffID	Appointment_date	Notes
▶	503	15	313	425	2019-08-12	Maternal care for disproportion due to outlet contraction of pelvis
	518	1	310	413	2017-06-11	Presence of (intrauterine) contraceptive device
	521	3	323	427	2023-07-30	Nondisplaced avulsion fracture of left ischium
	525	10	361	465	1999-08-20	Laceration of unspecified muscles, fascia and tendons at forearm level
	532	14	344	455	1923-12-12	Sprain of interphalangeal joint of right great toe
	534	8	325	430	1989-07-01	Nondisplaced fracture of posterior column of right acetabulum
	536	12	306	401	2013-02-24	Unilateral primary osteoarthritis of first carpometacarpal joint
	547	9	357	480	1998-04-17	Corrosion of unspecified degree of unspecified site of left lower limb
	564	2	386	493	2022-06-19	Unspecified fracture of shaft of unspecified fibula
	578	4	385	488	1947-08-15	Retinopathy of prematurity, stage 5
	584	7	378	481	1965-03-23	Irritant contact dermatitis due to food in contact with skin
	588	6	334	446	2020-01-23	Burn of first degree of multiple sites of unspecified wrist and hand
	594	13	335	451	2021-02-15	Person boarding or alighting a three-wheeled motor vehicle injured
	596	11	311	416	2020-09-09	Nondisplaced osteochondral fracture of right patella
•	NULL	NULL	NULL	NULL	NULL	NULL

MEDICATION

186 • `select * from Medication;`




Result Grid  Filter Rows: <input type="text"/> Edit:    Export/Import:   Wrap Cell Content: 						
	MedicationID	Medication_name	PatientID	MedicalstaffID	Medication_instructions	Medication_description
▶	804	Schiller-Kilback	14	493	Citalopram Hydrobromide	Isopropyl Alcohol
	820	Connelly and Terry	11	413	Metoprolol tartrate	Desipramine Hydrochloride
	828	Bahringer Group	4	416	ribavirin	Quetiapine fumarate
	833	Hermann-Hudson	15	401	sweet potato	amlodipine besylate
	835	Jakubowski	6	488	Acetaminophen	Octinoxate
	844	Langworth-Crooks	11	455	methylcellulose	Aluminum Zirconium
	856	Mayer, Huel and Bailey	7	427	MENTHOL	Thalidomide
	859	Connell and Anderson	10	430	Bambusa Aesculus	Methyl Salicylate
	860	Bailey-Champlin	2	455	Benzalkonium	CEFTRIAXONE
	865	Kassulke and Sanford	7	451	Air	Ethinyl estradiol
	867	Mayert-Emmerich	8	413	Cocoa butter, Phenylep...	Zinc Oxide and Octinoxate
	884	Rodriguez and Sons	5	425	AP and Deo	Alcohol
	886	Konopelski-Wuckert	11	493	Chaetomium	AZITHROMYCIN
	894	Bechtelar Inc	13	465	Oxycodone and Aspirin	Benztropine Mesylate
•	NULL	NULL	NULL	NULL	NULL	NULL

VIEW:

QUERY: CREATE VIEW view_Patient AS
SELECT PatientID, Patient_firstname, Patient_lastname, Patient_phonenumber
FROM Patient
WHERE PatientID in (1,2,6,8,9,13,14,15);

Select *from view_Patient;

```
305 • CREATE VIEW view_Patient AS
306 SELECT PatientID, Patient_firstname, Patient_lastname, Patient_phonenumber
307 FROM Patient
308 WHERE PatientID in (1,2,6,8,9,13,14,15);
309
310 • Select *from view_Patient;
```

Result Grid  Filter Rows: <input type="text"/> Export:  Wrap Cell Content: 				
	PatientID	Patient_firstname	Patient_lastname	Patient_phonenumber
▶	1	Maxwell	Longstreeth	845 866 3572
	2	Johnathan	Hazlewood	143 764 2212
	6	Shantee	Mainston	146 639 7710
	8	Mora	Harpham	394 921 9045
	9	Mord	Batt	146 460 4194
	13	Daron	Gabitis	378 431 2001
	14	Ysabel	Purselow	881 635 8524
	15	Tove	Grabbam	766 609 3291

INDEX:

QUERY: Create INDEX index_medicalstaff on Medicalstaff (MedicalstaffID);
Show Index from medicalstaff;

```
312 • Create INDEX index_medicalstaff on Medicalstaff (MedicalstaffID);
```

```
313 • Show Index from medicalstaff;
```

```
314
```

Result Grid Filter Rows: Export: Wrap Cell Content:															
	Table	Non_unique	Key_name	Seq_in_index	Column_name	Collation	Cardinality	Sub_part	Packed	Null	Index_type	Comment	Index_comment	Visible	Expression
▶	medicalstaff	0	PRIMARY	1	MedicalstaffID	A	12	NULL	NULL		BTREE			YES	NULL
	medicalstaff	1	index_medicalstaff	1	MedicalstaffID	A	14	NULL	NULL		BTREE			YES	NULL

STORE PROCEDURE:

QUERY: DELIMITER //
CREATE PROCEDURE Get_Medication_patient()
Begin
Select Medication_name, Medication_description, Patient_firstname, Patient_lastname from Medication M, Patient P
where Medication_name in ("Jakubowski", "Rodriguez and Sons", "Bahringer Group") and P.PatientID = M.PatientID;
End ;

call Get_Medication_patient();


```

348 DELIMITER //
349 • CREATE PROCEDURE Get_Medication_patient()
350 BEGIN
351     Select Medication_name, Medication_description, Patient_firstname, Patient_lastname from Medication M, Patient P
352     where Medication_name in ("Jakubowski", "Rodriguez and Sons","Bahringer Group") and P.PatientID = M.PatientID;
353 End ;
354
355 call Get_Medication_patient();
356

```

Medication_name	Medication_description	Patient_firstname	Patient_lastname
Bahringer Group	Quetiapine fumarate	Kareem	Gathercole
Jakubowski	Octinoxate	Shantee	Mainston
Rodriguez and Sons	Alcohol	Quillan	Pierrepoint

FUNCTION:

QUERY:

```

CREATE FUNCTION Labtest_result_negative() RETURNS INT
DETERMINISTIC
BEGIN
DECLARE Result_negative INT;
SELECT COUNT(*) INTO Result_negative FROM Labtest WHERE Labtest_results = 'negative';
RETURN Result_negative;
END;

SELECT Labtest_result_negative();

```

```

356 • CREATE FUNCTION Labtest_result_negative() RETURNS INT
357 DETERMINISTIC
358 BEGIN
359     DECLARE Result_negative INT;
360     SELECT COUNT(*) INTO Result_negative FROM Labtest WHERE Labtest_results = 'negative';
361     RETURN Result_negative;
362 END;
363
364 SELECT Labtest_result_negative();
365

```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
Labtest_result_negative()			
8			

TRIGGER:

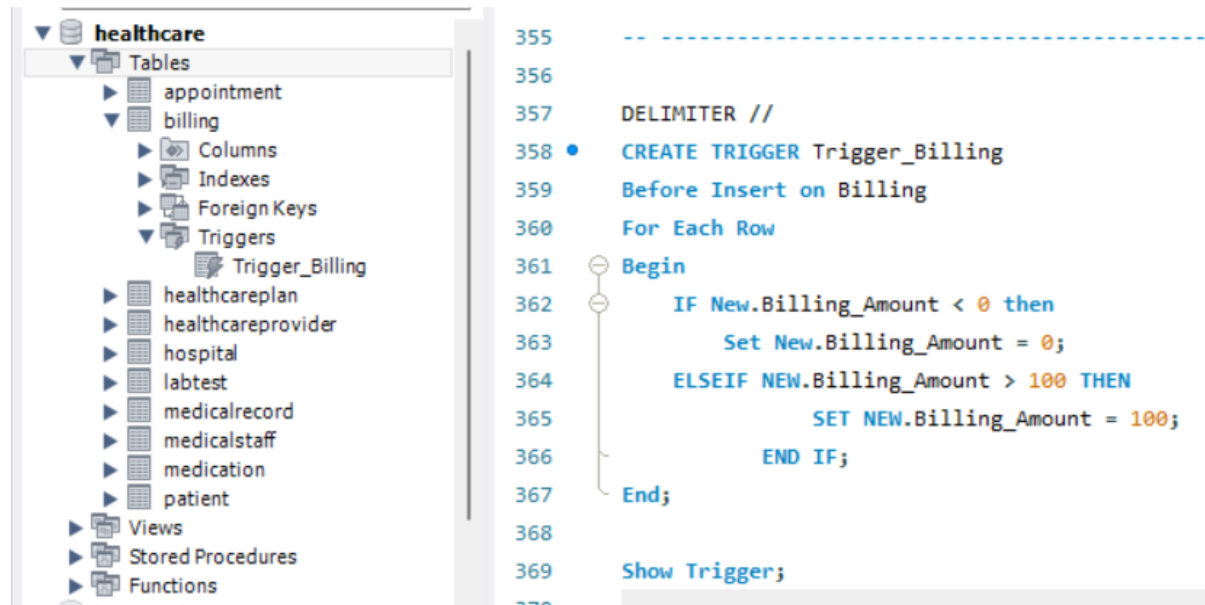
QUERY:

```

DELIMITER //
CREATE TRIGGER Trigger_Billing
Before Insert on Billing
For Each Row
Begin
    IF New.Billing_Amount < 0 then
        Set New.Billing_Amount = 0;
    ELSEIF NEW.Billing_Amount > 100 THEN
        SET NEW.Billing_Amount = 100;
    END IF;
End;

Show Trigger;

```



The screenshot displays a database management interface. On the left, a tree view shows the 'healthcare' database structure. Under 'Tables', the 'billing' table is expanded, showing 'Columns', 'Indexes', 'Foreign Keys', and 'Triggers'. The 'Trigger_Billing' trigger is selected. On the right, a SQL script is shown with line numbers 355 to 369. The script defines a trigger named 'Trigger_Billing' that fires 'Before Insert on Billing'. The trigger logic is as follows:

```
355  -- -----
356
357  DELIMITER //
358  • CREATE TRIGGER Trigger_Billing
359    Before Insert on Billing
360    For Each Row
361  Begin
362    IF New.Billing_Amount < 0 then
363      Set New.Billing_Amount = 0;
364    ELSEIF NEW.Billing_Amount > 100 THEN
365      SET NEW.Billing_Amount = 100;
366    END IF;
367  End;
368
369  Show Trigger;
```

Here we have given the condition in the trigger when $\text{Billing_Amount} < 0$, $\text{Billing_Amount} = 0$,
So when we insert a new entry with amount -100 (which is less than 0) we can see the value of billing amount for that entry is 0

QUERY: insert into BILLING (BillingID, PatientID, MedicalstaffID, AppointmentID, Billing_date, Billing_amount, Billing_paymentstatus)
values (799, 3, 488, 578, '2023-07-25', '-100', 'completed');

```
3 • insert into BILLING (BillingID, PatientID, MedicalstaffID, AppointmentID, Billing_date, Billing_amount, Billing_paymentstatus)
4   values (799, 3, 488, 578, '2023-07-25', '-100', 'completed');
5
```

Result Grid							
		Filter Rows:		Edit:		Export/Import:	
						Wrap Cell Content:	
BillingID	PatientID	MedicalstaffID	AppointmentID	Billing_date	Billing_amount	Billing_paymentstatus	
703	12	425	547	2023-09-25	\$924.09	completed	
715	4	455	588	2023-09-24	\$144.18	pending	
717	2	427	534	2023-07-14	\$7.62	pending	
724	12	446	547	2023-08-25	\$935.54	completed	
729	2	416	578	2023-07-25	\$957.86	pending	
732	3	451	564	2023-07-18	\$231.34	completed	
757	9	401	521	2023-10-05	\$458.45	completed	
760	10	481	518	2023-09-14	\$440.17	completed	
762	7	488	532	2023-08-21	\$898.91	pending	
766	15	480	596	2023-09-17	\$307.88	pending	
774	3	488	578	2023-07-25	\$758.43	completed	
775	10	465	518	2023-07-11	\$237.13	pending	
780	13	430	503	2023-07-10	\$124.26	pending	
794	1	493	594	2023-07-21	\$525.66	pending	
799	3	488	578	2023-07-25	0	completed	
NULL	NULL	NULL	NULL	NULL	NULL	NULL	