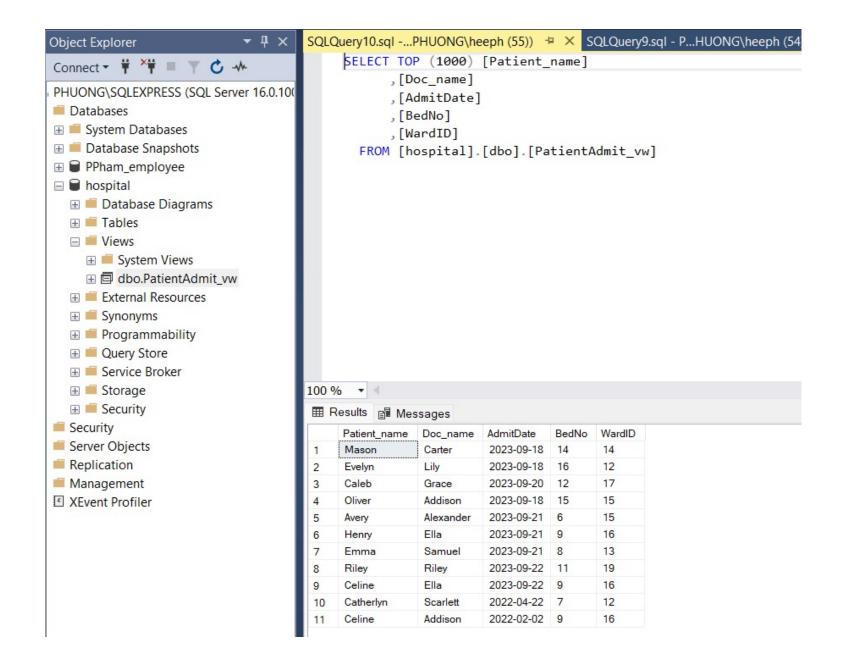
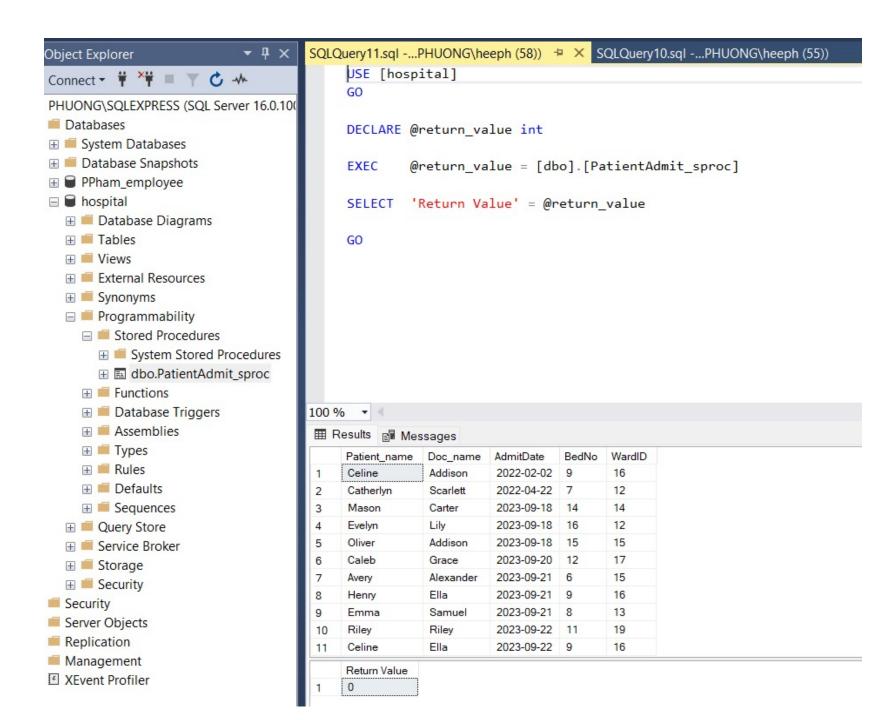
1. Patients admitted to hospital in a certain month, their admitting physician, bed assigned and ward, sorted by most recent date

#### View

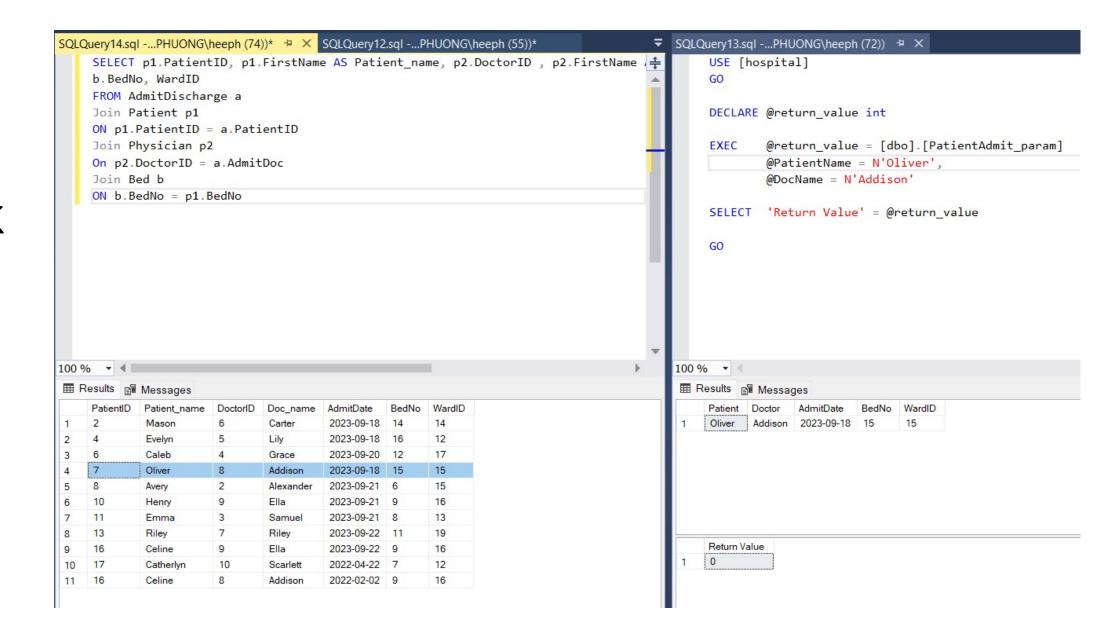




# SPROC with PARA

```
USE [hospital]
   GO
   DECLARE @return_value int
   EXEC
          @return_value = [dbo].[PatientAdmit_param]
          @PatientName = N'Oliver',
          @DocName = N'Addison'
   SELECT 'Return Value' = @return value
   GO
100 % -
AdmitDate
                         WardID
   Patient
                    BedNo
        Addison 2023-09-18 15
                         15
   Oliver
   Return Value
```

# Logic Check



# 2. Physician total admits for the past year, sorted by date

#### View

```
SQLQuery14.sql -...PHUONG\heeph (74))* 

□ × SQLQuery11.sql -...PHUONG\heeph (58))
     CREATE VIEW DocAdmit_VW
    AS
     SELECT p.FirstName as Doc_name, AdmitDate
    FROM AdmitDischarge a
     JOIN Physician p
     ON a.AdmitDoc = p.DoctorID
    WHERE AdmitDate LIKE '2022%'
    SELECT * FROM DocAdmit_VW
100 % ▼ ◀
Doc_name AdmitDate
     Scarlett
             2022-04-22
```

Addison

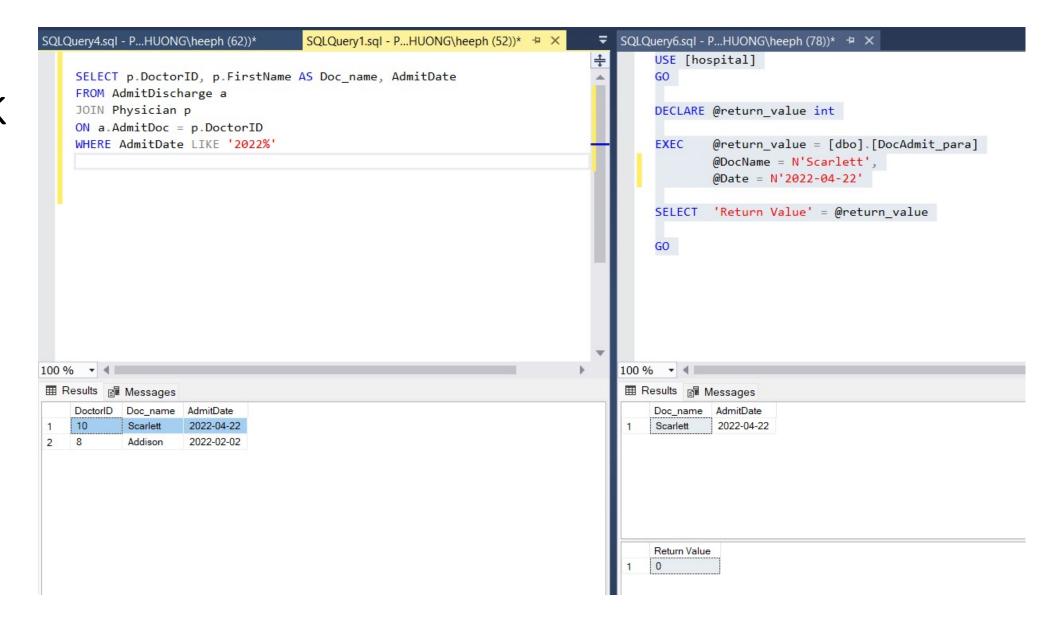
2022-02-02

```
USE [hospital]
    GO
    DECLARE @return_value int
    EXEC
            @return_value = [dbo].[DocAdmit_sproc]
    SELECT 'Return Value' = @return_value
    GO
100 % ▼ 4
Doc_name AdmitDate
             2022-04-22
    Scarlett
             2022-02-02
    Addison
    Return Value
```

# SPROC with Para

```
SQLQuery6.sql - P...HUONG\heeph (78))* → × SQLQuery5.sql - P...HUONG\heeph (53))
                                                                           SQLQ
    USE [hospital]
    GO
    DECLARE @return_value int
             @return_value = [dbo].[DocAdmit_para]
     EXEC
             @DocName = N'Scarlett',
             @Date = N'2022-04-22'
    SELECT 'Return Value' = @return_value
    GO
100 % ▼ <
Doc_name AdmitDate
    Scarlett
             2022-04-22
    Return Value
```

# Logic Check



3. Total list of treatments administered to a patient by physician for each treatment, sorted by date of treatment, listing last name of patient and of physician

#### View

```
SELECT TOP (1000) [Patient_LastName]
            ,[Doc_LastName]
            ,[TreatmentID]
            ,[DateTime]
            , [Results]
       FROM [hospital].[dbo].[TreatmentAdministration VW]
100 % ▼ ◀
Doc_LastName
     Patient LastName
                                TreatmentID
                                           DateTime
                                                               Results
     Martin
                    Green
                                           2023-09-18 16:30:00.000
                                                               Tumor Detection
     Martin
                    Green
                                           2023-09-18 16:30:00.000
                                                               Tumor Detection
     Lewis
                    Lewis
                                           2023-09-18 10:30:00.000
                                                               Normal Anatomy
     Harris
                    Thompson
                                           2023-09-20 15:20:00.000
                                                               Cardiac detected
     Harris
                    Thompson
                                 12
                                           2023-09-20 15:20:00.000
                                                               Negative
                                           2023-09-18 08:45:00.000
                                                              Improved mobility
     Smith
                    Clark
     Thomas
                    Carlson
                                 2
                                           2023-09-21 16:20:00.000
                                                               Gum disease
     Young
                    Scott
                                 10
                                           2023-09-21 13:30:00.000
                                                               Fluid removed
                                 7
     Williams
                    Baker
                                           2023-09-21 07:30:00.000
                                                              Benign finding
```

```
SQLQuery3.sql - P...HUONG\heeph (70)) □ × SQLQuery2.sql - P...HUONG\heeph (65))
                                                                                            SQLQuery1.sql - P...I
     USE [hospital]
     GO
     DECLARE @return_value int
                @return_value = [dbo].[TreatmentAdministration_sproc]
     EXEC
     SELECT 'Return Value' = @return_value
     GO
100 % ▼ 4
■ Results ■ Messages
                      Doc_LastName TreatmentID
      Patient_LastName
                                                 DateTime
                                                                       Results
      Smith
                       Clark
                                     4
                                                 2023-09-18 08:45:00.000
                                                                       Improved mobility
      Lewis
                       Lewis
                                                 2023-09-18 10:30:00.000
                                                                       Normal Anatomy
                      Green
                                     1
                                                 2023-09-18 16:30:00.000
                                                                      Tumor Detection
      Martin
      Martin
                       Green
                                     2
                                                 2023-09-18 16:30:00.000 Tumor Detection
                                     1
                                                 2023-09-20 15:20:00.000
                                                                       Cardiac detected
      Harris
                       Thompson
      Harris
                       Thompson
                                     12
                                                 2023-09-20 15:20:00.000
                                                                       Negative
                                     7
      Williams
                       Baker
                                                 2023-09-21 07:30:00.000
                                                                       Benign finding
                       Scott
                                     10
                                                 2023-09-21 13:30:00.000 Fluid removed
      Young
                                     2
                                                 2023-09-21 16:20:00.000 Gum disease
      Thomas
                       Carlson
     Return Value
     0
```

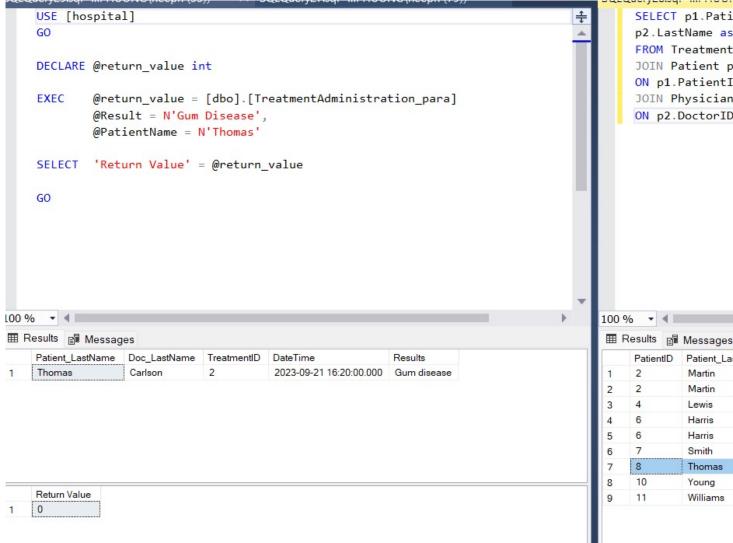
### SPROC With Para

```
SQLQuery4.sql - P...HUONG\heeph (62))* + X SQLQuery2.sql - P...HUONG\heeph (65))
                                                                             SQLQuery1.sql - P...H
     USE [hospital]
     GO
     DECLARE @return_value int
             @return_value = [dbo].[TreatmentAdministration_para]
     EXEC
             @Result = N'Gum Disease',
             @PatientName = N'Thomas'
     SELECT 'Return Value' = @return_value
     GO
100 % ▼ <

    ■ Results    ■ Messages

    DateTime
                                                           Results
     Thomas
                   Carlson
                                         2023-09-21 16:20:00.000 Gum disease
     Return Value
```

## Logic Check



SELECT p1.PatientID, p1.LastName as Patient\_LastName, p2.DoctorID, p2.LastName as Doc\_LastName, TreatmentID, Results
FROM TreatmentAdministration t
JOIN Patient p1
ON p1.PatientID = t.PatientID
JOIN Physician p2
ON p2.DoctorID = t.DoctorID

	PatientID	Patient_LastName	DoctorID	Doc_LastName	TreatmentID	Results
1	2	Martin	6	Green	1	Tumor Detection
2	2	Martin	6	Green	2	Tumor Detection
3	4	Lewis	5	Lewis	1	Normal Anatomy
4	6	Harris	4	Thompson	1	Cardiac detected
5	6	Harris	4	Thompson	12	Negative
6	7	Smith	8	Clark	4	Improved mobility
7	8	Thomas	2	Carlson	2	Gum disease
8	10	Young	9	Scott	10	Fluid removed
9	11	Williams	3	Baker	7	Benign finding

4. Patient itemized bill: List of treatments and items, by charge and sorted by date.

#### View

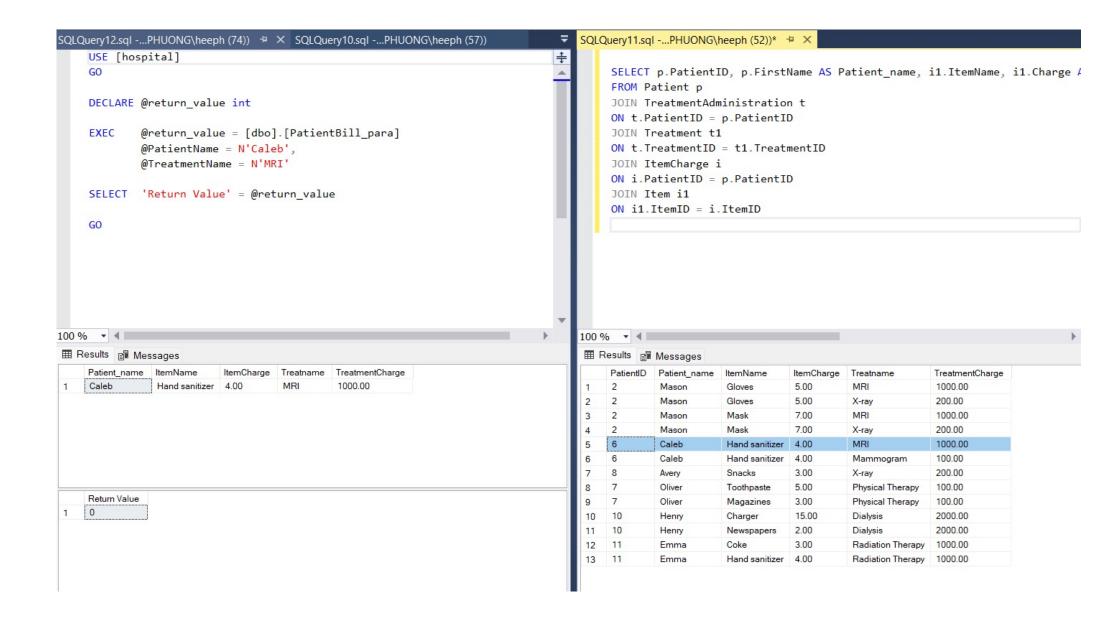
```
SQLQuery10.sql -...PHUONG\heeph (57)) * X SQLQuery9.sql - P...HUONG\heeph (52))
      SELECT TOP (1000) [Patient_name]
             ,[ItemName]
             ,[ItemCharge]
             ,[Treatname]
             ,[TreatmentCharge]
        FROM [hospital].[dbo].[PatientBill_VW]
100 % ▼ 4
Patient_name
                  ItemName
                                ItemCharge
                                           Treatname
                                                           TreatmentCharge
      Mason
                   Gloves
                                5.00
                                           MRI
                                                           1000.00
                                5.00
                                           X-ray
                                                           200.00
      Mason
                   Gloves
      Mason
                   Mask
                                7.00
                                           MRI
                                                           1000.00
 3
                                                           200.00
      Mason
                   Mask
                                7.00
                                           X-ray
                                           MRI
      Caleb
                   Hand sanitizer
                                4.00
                                                           1000.00
                                4.00
                                           Mammogram
                                                           100.00
      Caleb
                   Hand sanitizer
                                                           200.00
                   Snacks
                                3.00
                                           X-ray
      Avery
                                                           100.00
      Oliver
                   Toothpaste
                                5.00
                                           Physical Therapy
      Oliver
                   Magazines
                                3.00
                                           Physical Therapy
                                                           100.00
                                                           2000.00
      Henry
                   Charger
                                15.00
                                           Dialysis
      Henry
                                2.00
                                           Dialysis
                                                           2000.00
                   Newspapers
                                3.00
                                                           1000.00
      Emma
                   Coke
                                           Radiation Therapy
      Emma
                   Hand sanitizer
                               4.00
                                           Radiation Therapy 1000.00
```

```
SQLQuery8.sql - P...HUONG\heeph (65)) * X SQLQuery7.sql - P...HUONG\heeph (56))
                                                                                            SQLQuery4.sql - P...HU
     USE [hospital]
      GO
      DECLARE @return_value int
                @return_value = [dbo].[PatientBill_sproc]
      EXEC
               'Return Value' = @return value
      SELECT
      GO
100 % ▼ <
■ Results ■ Messages
                   ItemName
                                ItemCharge
                                                            TreatmentCharge
      Patient_name
                                           Treatname
      Oliver
                   Toothpaste
                                5.00
                                            Physical Therapy
                                                            100.00
                                                            100.00
      Oliver
                                3.00
                                            Physical Therapy
                   Magazines
      Mason
                   Gloves
                                5.00
                                            MRI
                                                            1000.00
                   Gloves
                                5.00
                                            X-ray
                                                            200.00
      Mason
                                            MRI
      Mason
                   Mask
                                7.00
                                                            1000.00
                   Mask
                                7.00
                                                            200.00
      Mason
                                            X-ray
                                            MRI
                                                            1000.00
      Caleb
                   Hand sanitizer
                                4.00
                                            Mammogram
                                                            100.00
      Caleb
                   Hand sanitizer
                                4.00
      Emma
                   Coke
                                3.00
                                            Radiation Therapy
                                                            1000.00
                                4.00
                                                            1000.00
                   Hand sanitizer
      Emma
                                            Radiation Therapy
                                 15.00
                                                            2000.00
      Henry
                   Charger
                                            Dialysis
      Return Value
      0
```

# SPROC with Para

```
USE [hospital]
    GO
    DECLARE @return_value int
    EXEC
           @return_value = [dbo].[PatientBill_para]
           @PatientName = N'Caleb',
           @TreatmentName = N'MRI'
    SELECT 'Return Value' = @return_value
    GO
100 % ▼ 4
■ Results ■ Messages
                      ItemCharge
                                      TreatmentCharge
             ItemName
                              Treatname
    Patient_name
    Caleb
             Hand sanitizer 4.00
                               MRI
                                      1000.00
    Return Value
   0
```

# Logic Check



# 5. List all nurse-patient events with nurse name and patient name

```
SQLQuery10.sq
     SELECT TOP (1000) [EventID]
           ,[Patient_name]
           ,[Nurse_name]
           , [EventType]
           , [Date]
           ,[Time]
       FROM [hospital].[dbo].[NursePatient_VW]
100 % -
Time
     EventID
            Patient_name
                       Nurse_name
                                 EventType
                                         Date
            Harper
                       Sophie
                                 WC
                                          2023-09-19
                                                   06:11:20.0000000
                       Olivia
                                 MED
            Mason
                                          2023-09-19
                                                   10:10:00.0000000
                       Aiden
     6
            Evelyn
                                  MED
                                          2023-09-18
                                                   14:15:00.0000000
     8
            Caleb
                       Liam
                                 FS
                                          2023-09-20
                                                   14:15:00.0000000
     10
            Oliver
                       Emily
                                 AS
                                          2023-09-21
                                                   12:10:00.0000000
     11
                       Ethan
                                 WC
                                          2023-09-21
                                                   08:40:00.0000000
            Emma
                       Mia
     12
            Henry
                                 TA
                                          2023-09-21
                                                   06:50:00.0000000
                                          2023-09-22
     13
            Riley
                       Aiden
                                 MED
                                                   09:00:00.0000000
     18
                                 FS
                                          2023-09-23 19:20:00.0000000
            Avery
                       Noah
 9
```

```
SQLQuery15.sql -...PHUONG\heeph (77)) 

SQLQuery14.sql -...PHUONG\heeph (64))
                                                                                      SQLQuery13.sql
     USE [hospital]
     GO
     DECLARE @return_value int
     EXEC
               @return_value = [dbo].[NursePatient_sproc]
     SELECT 'Return Value' = @return value
     GO
100 % ▼ ◀
Patient_name Nurse_name
                             EventType Date
                                                 Time
                 Sophie
                             WC
                                       2023-09-19 06:11:20.0000000
     Harper
     Mason
                 Olivia
                             MED
                                       2023-09-19 10:10:00.0000000
                                      2023-09-18 14:15:00.0000000
     Evelyn
                  Aiden
                             MED
     Caleb
                 Liam
                                      2023-09-20 14:15:00.0000000
                             FS
                                      2023-09-21 12:10:00.0000000
     Oliver
                  Emily
                             AS
                                      2023-09-21 08:40:00.0000000
     Emma
                  Ethan
                             WC
                                      2023-09-21 06:50:00.0000000
     Henry
                  Mia
                             TA
                                      2023-09-22 09:00:00.0000000
     Riley
                  Aiden
                             MED
                             FS
                                      2023-09-23 19:20:00.0000000
     Avery
                  Noah
     Return Value
     0
```

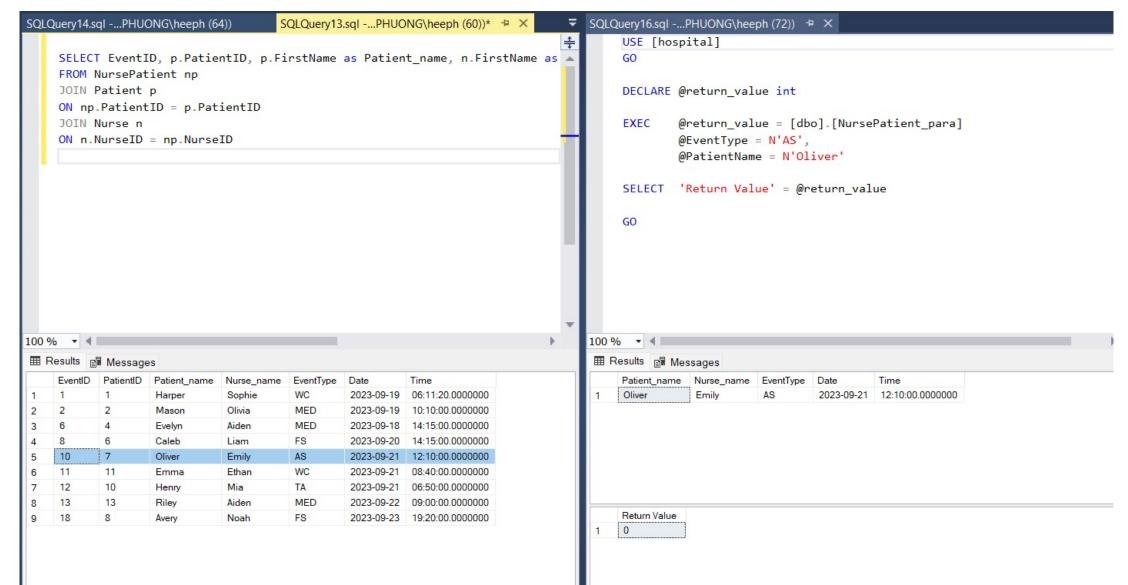
# SPROC with Para

```
USE [hospital]
    GO
    DECLARE @return_value int
    EXEC
           @return_value = [dbo].[NursePatient_para]
           @EventType = N'AS',
           @PatientName = N'Oliver'
    SELECT 'Return Value' = @return_value
    GO
100 % ▼ 4

    ■ Results    ■ Messages

                      EventType Date
    Patient_name Nurse_name
                                     Time
             Emily
    Oliver
                      AS
                              2023-09-21
                                     12:10:00.0000000
    Return Value
    0
```

# Logic Check



6. Find missing values for beds with and without patients, and for patients with and without beds.

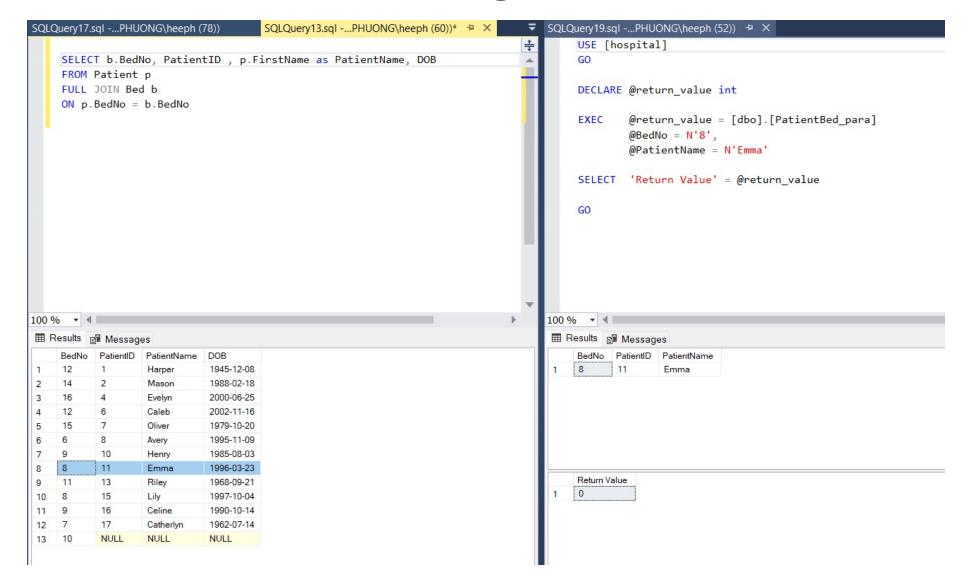
### View

```
SQLQuery17.sql -...PHUONG\heeph (78)) 

→ × SQLQuery14.sql -...PHUONG
     SELECT TOP (1000) [BedNo]
           ,[PatientID]
       FROM [hospital].[dbo].[PatientBed_VW]
100 % ▼ <
■ Results ■ Messages
     BedNo PatientID
     12
     14
           2
     16
     12
           6
     15
           7
           8
     6
           10
     9
     8
           11
    11
           13
           15
     8
           16
11
     9
    7
           17
12
    10
13
           NULL
```

```
USE [hospital]
   GO
   DECLARE @return_value int
         @return_value = [dbo].[PatientBed_sproc]
   EXEC
   SELECT 'Return Value' = @return_value
   GO
100 % ▼ 4
PatientID
   BedNo
   12
   14
        2
   16
   12
   15
        7
        8
        10
   8
        11
   11
        13
   8
        15
        16
   9
   Return Value
```

### SPROC with Para + Logic Check



7. Find missing values of for nurses who have not seen a patient and all patients that have not seen a nurse.

### View

```
SQLQuery20.sql -...PHUONG\heeph (80)) → × SQLQuery17.sql -...PHUONG\heeph (78))
                                                                                 SQLQu
     SELECT TOP (1000) [Patient_name]
            ,[Nurse_name]
       FROM [hospital].[dbo].[MissingNursePatient_VW]
100 % ▼ <
Patient_name Nurse_name
                 Emily
     Oliver
                 Ethan
     Emma
     Mason
                 Olivia
     Caleb
                 Liam
     NULL
                 Ava
                 Noah
     Avery
                 Sophie
     Harper
     NULL
                 Jackson
     NULL
                 Isabella
     Evelyn
                 Aiden
     Riley
                 Aiden
                 Mia
     Henry
     NULL
                 Lucas
     Lily
                 NULL
                 NULL
     Celine
     Catherlyn
                 NULL
```

```
SQLQuery21.sql -...PHUONG\heeph (58)) 

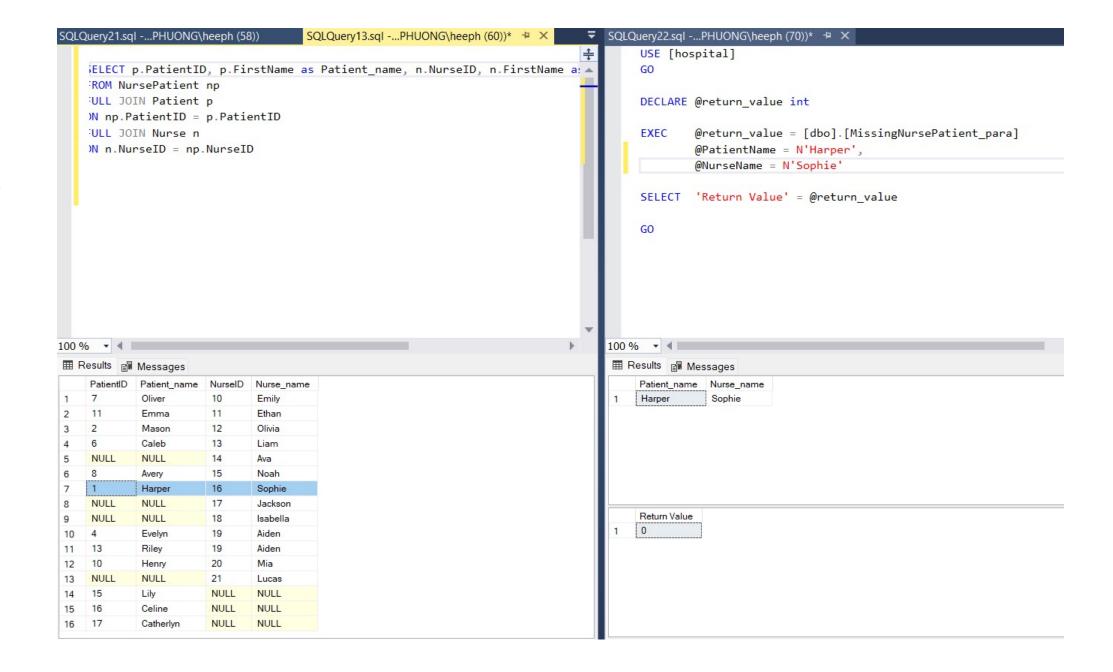
SQLQuery20.sql -...PHUONG\heeph (80))
                                                                                SQLQuery13.sql -...
     USE [hospital]
     GO
     DECLARE @return_value int
     EXEC
             @return_value = [dbo].[MissingNursePatient_sproc]
     SELECT 'Return Value' = @return_value
     GO
100 % ▼ ◀
Patient_name Nurse_name
     Oliver
                Emily
                Ethan
     Emma
                Olivia
     Mason
                Liam
     Caleb
     NULL
                Ava
                Noah
     Avery
     Harper
                Sophie
     NULL
                Jackson
     NULL
                Isabella
10
     Evelyn
                Aiden
     Riley
                Aiden
     Return Value
    0
```

# SPROC with Para

```
SQLQuery22.sql -...PHUONG\heeph (70))* 

SQLQuery21.sql -...PHUONG\heeph (58))
                                                                           SQLQu
    USE [hospital]
    GO
    DECLARE @return_value int
             @return_value = [dbo].[MissingNursePatient_para]
     EXEC
             @PatientName = N'Harper',
             @NurseName = N'Sophie'
    SELECT 'Return Value' = @return_value
    GO
100 % ▼ ◀
Patient_name
               Nurse_name
               Sophie
    Harper
    Return Value
```

## Logic Check



8. Create a distribution of nurses across all wards, and a distribution of all wards across nurses

### View

```
SELECT TOP (1000) [NurseID]
           ,[Location]
      FROM [hospital].[dbo].[NurseWard_VW]
100 % 🔻 🔻
NurselD
           Location
           ICU
    10
    11
           ICU
    12
           ICU
    13
           ICU
    14
           ICU
    15
           ICU
    16
           ICU
    17
           ICU
    18
           ICU
10
    19
           ICU
    20
11
           ICU
    21
           ICU
12
    10
           ER
13
           ER
14
    11
15
    12
           ER
    13
           ER
16
           ED
Query executed successfully.
```

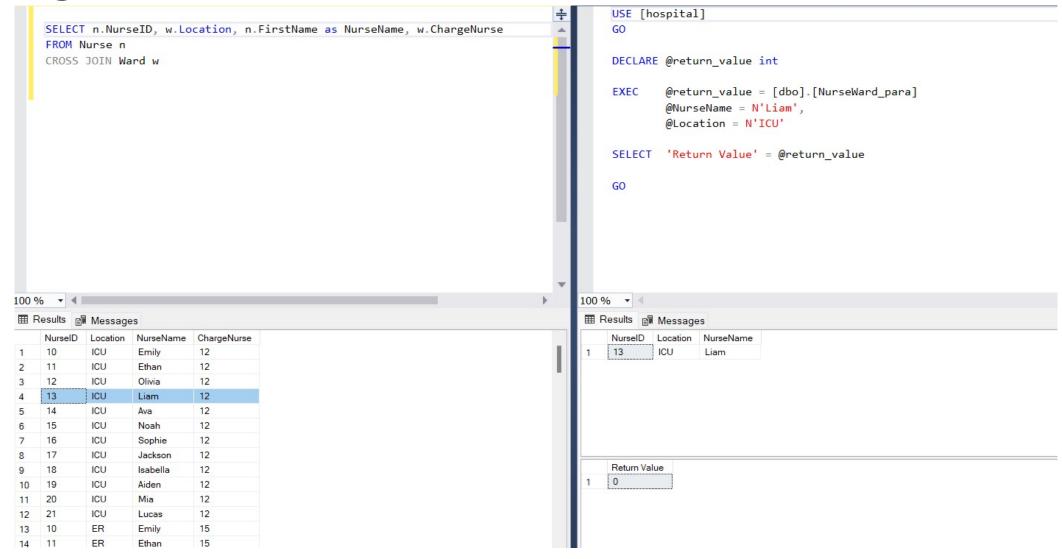
```
SQLQuery24.sql -...PHUONG\heeph (52)) 

SQLQuery23.sql -...PHUONG\heeph (68))
     USE [hospital]
     GO
     DECLARE @return_value int
              @return_value = [dbo].[NurseWard_sproc]
     EXEC
     SELECT 'Return Value' = @return_value
     GO
100 % ▼ ◀
■ Results ■ Messages
     NurselD
            Location
     10
            ICU
     11
            ICU
     12
            ICU
     13
            ICU
     14
            ICU
     15
            ICU
     16
            ICU
     17
            ICU
     18
            ICU
     19
            ICU
 10
     20
            ICU
 11
     Return Value
```

# SPROC with Para

```
USE [hospital]
    GO
    DECLARE @return_value int
            @return_value = [dbo].[NurseWard_para]
    EXEC
            @NurseName = N'Liam',
            @Location = N'ICU'
    SELECT 'Return Value' = @return_value
    GO
100 % ▼ ◀
NurseID Location NurseName
    13
           ICU
                 Liam
    Return Value
    0
```

## Logic Check



9. Create a distribution of beds across all wards, and a distribution of all wards across beds

### View

```
SELECT TOP (1000) [BedNo]
            ,[Location]
        FROM [hospital].[dbo].[BedWard_VW]
100 % -
■ Results ■ Messages
     BedNo Location
             ICU
     6
             ER
             Maternity
             Surgical
             Neurology
             CCU
             Oncology
             Radiology
             Obstetrics
             Pediatric
 10
             Psychiatric
             ICU
 12
             ER
 13
 14 7
             Maternity
 15
             Surgical
             Neurology
 16
             COLL
```

```
USE [hospital]
    GO
    DECLARE @return_value int
             @return_value = [dbo].[BedWard_sproc]
    EXEC
    SELECT
            'Return Value' = @return_value
    GO
100 % - 4
BedNo
           Location
           ICU
           ER
           Maternity
           Surgical
           Neurology
           CCU
           Oncology
           Radiology
           Obstetrics
10
           Pediatric
           Psychiatric
11
    Return Value
```

Return Value

# SPROC with Para

```
100 % ▼ ◀ ■ Results ■ Messages
```

	BedNo	Location	Size
1	7	ICU	M
2	11	ICU	M
3	16	ICU	M

	Return Value
1	0

# Logic Check

