# IST769 Homework Submission Template

## Basic Information

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Date Due: February 13, 2020  
Homework #: HW03

## Instructions

For each answer, please include your answer as text, and any screenshot(s) which demonstrate your answer was executed. Most importantly, make sure to include evidence your answer is correct. This will most likely be a screenshot. If you had issues, problems, or had to make assumptions include them in your answer.

## Your Answers:

1. **Code: -- Question 1**

CREATE TABLE [dbo].[demo\_players](

[player\_id] [int] IDENTITY(1,1) NOT NULL,

[player\_name] [varchar](20)NOT NULL,

[shots\_attempted] [int] NOT NULL,

[shots\_made] [int] NOT NULL,

constraint demo\_players\_pk primary key (player\_id),

constraint demo\_players\_not\_zero check ((shots\_attempted) >= 0),

constraint demo\_players\_nonzero check ((shots\_made) >= 0));

CREATE TABLE [dbo].[demo\_shots](

[shot\_id] [int] IDENTITY(1,1)NOT NULL,

[player\_id] [int] NOT NULL,

[clock\_time] [datetime] NOT NULL,

[shot\_made] [bit] NOT NULL,

constraint demo\_shots\_pk primary key (shot\_id),

constraint demo\_shots\_fk FOREIGN key (player\_id) references demo\_players(player\_id));

INSERT [dbo].[demo\_players] ([player\_name], [shots\_attempted], [shots\_made])VALUES ('Mary',0, 0);

INSERT [dbo].[demo\_players] ([player\_name], [shots\_attempted], [shots\_made])VALUES ('Sue',0, 0);

SELECT \* FROM demo\_players;

**Screenshots:**

A screenshot of a social media post

Description automatically generated

2. **Code: -- Question 2**

IF exists (SELECT \* FROM sys.objects WHERE name = 'p\_write\_shot')

DROP PROCEDURE p\_write\_shot

GO

CREATE PROCEDURE p\_write\_shot(

@id int,

@time DATETIME,

@made bit)

AS BEGIN

BEGIN TRY

BEGIN TRANSACTION

INSERT INTO demo\_shots (player\_id, clock\_time, shot\_made)VALUES (@id, @time, @made)

IF (@made = 1)

BEGIN

UPDATE demo\_players

SET shots\_attempted = (select shots\_attempted from demo\_players where player\_id = @id) + 1, shots\_made = (select shots\_madefrom demo\_players where player\_id = @id) + 1 WHERE player\_id = @id;

PRINT 'Committing for Attempt and Made'

COMMIT

END

ELSE

BEGIN

UPDATE demo\_players

SET shots\_attempted = (select shots\_attempted from demo\_players where

player\_id = @id) + 1WHERE player\_id = @id;

PRINT 'Committing for Attempt'

COMMIT

END

END TRY

BEGIN CATCH

SELECT ERROR\_NUMBER()as error, ERROR\_MESSAGE()as MESSAGE

PRINT 'Rolling Back'

ROLLBACK

END CATCH

END

**Running the procedures ten times**

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 01:45:35.287', @made = 1;

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 02:46:35.287', @made = 0;

EXECUTE p\_write\_shot @id = 2, @time = '2020-02-12 03:47:35.287', @made = 0;

EXECUTE p\_write\_shot @id = 2, @time = '2020-02-12 04:48:35.287', @made = 1;

EXECUTE p\_write\_shot @id = 2, @time = '2020-02-12 05:49:35.287', @made = 1;

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 01:45:35.287', @made = 1;

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 02:46:35.287', @made = 0;

EXECUTE p\_write\_shot @id = 2, @time = '2020-02-12 03:47:35.287', @made = 0;

EXECUTE p\_write\_shot @id = 2, @time = '2020-02-12 04:48:35.287', @made = 1;

EXECUTE p\_write\_shot @id = 2, @time = '2020-02-12 05:49:35.287', @made = 1;

select \* from demo\_players

select \* from demo\_shots

**Screenshots:**

**Code Screenshot**

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Procedures execution screenshot

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Results of Two tables:

A screenshot of a cell phone

Description automatically generatedA screenshot of a cell phone

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3. **Code -- Question 3**

ALTER TABLE demo\_players ADD

valid\_from DATETIME2(2)generated alwaysas row start HIDDEN

CONSTRAINT DF\_valid\_from DEFAULT dateadd(second, -1,sysutcdatetime()),

valid\_to DATETIME2(2)generated alwaysas row end HIDDEN

CONSTRAINT DF\_valid\_to DEFAULT '9999.12.31 23:59:59.99',

PERIOD FOR SYSTEM\_TIME (valid\_from, valid\_to);

ALTER TABLE dbo.demo\_playersSET (SYSTEM\_VERSIONING = on (HISTORY\_TABLE = dbo.demo\_players\_history));

SELECT \* FROM demo\_players

SELECT \* FROM demo\_players\_history

**Screenshots of Code:**

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**Result of Table**

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4**. Execute procedures 17 times automatically**

**Code:** --Question 04

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 01:45:35.287', @made = 1;

WAITFOR delay'00:00:15'

GO

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 02:46:35.287', @made = 0;

WAITFOR delay'00:00:15'

GO

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 03:47:35.287', @made = 0;

WAITFOR delay'00:00:15'

GO

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 04:48:35.287', @made = 1;

WAITFOR delay'00:00:15'

GO

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 05:49:35.287', @made = 1;

WAITFOR delay'00:00:15'

GO

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 01:45:35.287', @made = 1;

WAITFOR delay'00:00:15'

GO

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 02:46:35.287', @made = 0;

WAITFOR delay'00:00:15'

GO

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 01:45:35.287', @made = 1;

WAITFOR delay'00:00:15'

GO

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 03:47:35.287', @made = 0;

WAITFOR delay'00:00:15'

GO

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 04:48:35.287', @made = 1;

WAITFOR delay'00:00:15'

GO

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 05:49:35.287', @made = 1;

WAITFOR delay'00:00:15'

GO

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 01:45:35.287', @made = 1;

WAITFOR delay'00:00:15'

GO

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 02:46:35.287', @made = 0;

WAITFOR delay'00:00:30'

GO

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 03:47:35.287', @made = 0;

WAITFOR delay'00:00:30'

GO

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 04:48:35.287', @made = 1;

WAITFOR delay'00:00:15'

GO

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 05:49:35.287', @made = 1;

WAITFOR delay'00:00:15'

GO

EXECUTE p\_write\_shot @id = 1, @time = '2020-02-12 09:47:35.287', @made = 0;

WAITFOR delay'00:00:30'

GO

5. **Code:**

-- a show current statistics

DECLARE @gettime DATETIME2 = GETDATE()

select \*from demo\_players for SYSTEM\_TIME AS OF @gettime

**Screenshot:**

**A screenshot of a cell phone

Description automatically generated**

-- **b Get the exactTime variable (time that is supposed to be after exactly 2 minutes and 30 seconds) and get variable (time that after exactly 2 minutes and 30 seconds); Then use the get variable to match the records stored in the database**

DECLARE @exactTime DATETIME2

DECLARE @get DATETIME2

set @exactTime = DATEADD(SECOND,150,(Select top 1 valid\_to from demo\_players\_history order by valid\_to))

set @get = (Select valid\_to from demo\_players\_history where LEFT(valid\_to, 19) = left(@exactTime,19))

select \* from demo\_players for SYSTEM\_TIME AS OF @get

**Screenshot:**

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**-- c Get startTime and lastTime variables in order to define the time frame of last one minute**

DECLARE @startTime DATETIME2

DECLARE @lastTime DATETIME2

set @startTime = DATEADD(SECOND,240,(Selecttop 1 valid\_tofrom demo\_players\_history order by valid\_to))

set @lastTime = DATEADD(SECOND,300,(Selecttop 1 valid\_tofrom demo\_players\_history order by valid\_to))

select \* from demo\_players for SYSTEM\_TIME BETWEEN @startTime AND @lastTime

**Screenshot:**

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## Student Reflection:

To achieve the highest grade on the assignment you must be as descriptive and personal as possible with your reflection. Ask yourself the following questions.

1. What new information have I learned from completing this assignment?

Delay function; Safe transaction (try and catch); temporary table; history table; commit and rollback

1. What were my challenges / roadblocks I encountered on the way to completing it?

The last questions (fifth one) is ambiguous since students tend to match and extract records from history table. However, once we understand the word “statistics”, the answer is straight forward.

1. To be better prepared to attempt this assignment I should \_\_\_\_\_\_\_ ?

Google

1. If I could make this assignment better, I would \_\_\_\_\_?

Read documentation

1. Rate your comfort level with completing this assignment:

1

1 ==> I can do this on my own and explain how to do it.

2 ==> I can do this on my own without any help.

3 ==> I can do this with help or guidance from others. If you choose this level, please list those who helped you.

4 ==> I don't understand this at all yet and need extra help. If you choose this, please try to articulate that which you do not understand.