

**School of Computer Science**

**Masters in Applied Computing (M.A.C)**

**Subject Code: COMP8157**

**Subject Name: Advanced Database Topics**

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**Lab 2**

**by**

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# Solutions:

## Answer 1:

### Commands:

CREATE DATABASE hamzaADTlab2;

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## Answer 2:

### Commands:

ALTER DATABASE hamzaADTlab2 ADD FILEGROUP fg\_January;

ALTER DATABASE hamzaADTlab2 ADD FILEGROUP fg\_February;

ALTER DATABASE hamzaADTlab2 ADD FILEGROUP fg\_March;

ALTER DATABASE hamzaADTlab2 ADD FILEGROUP fg\_April;

ALTER DATABASE hamzaADTlab2 ADD FILEGROUP fg\_May;

ALTER DATABASE hamzaADTlab2 ADD FILEGROUP fg\_June;

ALTER DATABASE hamzaADTlab2 ADD FILEGROUP fg\_July;

ALTER DATABASE hamzaADTlab2 ADD FILEGROUP fg\_August;

ALTER DATABASE hamzaADTlab2 ADD FILEGROUP fg\_September;

ALTER DATABASE hamzaADTlab2 ADD FILEGROUP fg\_October;

ALTER DATABASE hamzaADTlab2 ADD FILEGROUP fg\_November;

ALTER DATABASE hamzaADTlab2 ADD FILEGROUP fg\_December;

Graphical user interface, text, application, table

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## Answer 3:

### Commands:

CREATE PARTITION FUNCTION hamzaByMonth (INT) AS RANGE LEFT FOR VALUES (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12);

Graphical user interface, text, application, email

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## Answer 4:

### Commands:

CREATE PARTITION SCHEME hamzaByMonthADT

AS PARTITION hamzaByMonth

TO

(fg\_January, fg\_February, fg\_March, fg\_April, fg\_May, fg\_June, fg\_July, fg\_August, fg\_September, fg\_October, fg\_November, fg\_December);

Graphical user interface, text, application, email

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## Answer 5:

### Commands:

CREATE TABLE MonthlyReports (

ReportID INT IDENTITY (1,1) NOT NULL,

ReportMonth INT NOT NULL,

PRIMARY KEY (ReportID, ReportMonth),

MonthlyReport VARCHAR(MAX))

ON hamzaByMonthADT (ReportMonth);

Graphical user interface, text, application, email

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## Answer 6:

### Commands:

### **Assigning hardware locations to partitions:**

ALTER DATABASE [hamzaADTlab2] ADD FILE (NAME = [December],

FILENAME = 'C:\Program Files\Microsoft SQL Server\MSSQL16.SQLEXPRESS\MSSQL\DATA\hamzaADTlab2\_12.ndf', SIZE = 3072

KB, MAXSIZE = UNLIMITED, FILEGROWTH = 1024 KB

) TO FILEGROUP [Fg\_December]

**Inserting:**

DECLARE @i int

DECLARE @ReportMonth INT

DECLARE @MonthlyReport VARCHAR(MAX)

SET @i = 1

BEGIN TRAN

WHILE @i<=100000

BEGIN

    SET @ReportMonth = ROUND(RAND() \* 12 + 1, 0);

    SET @MonthlyReport = REPLICATE('hamza', 100);

    INSERT INTO MonthlyReports (ReportMonth, MonthlyReport)

        VALUES (@ReportMonth,@MonthlyReport);

    SET @i=@i+1

END

COMMIT TRAN

GO

Graphical user interface, text

Description automatically generated

## Answer 7:

### Commands:

SELECT ReportMonth, COUNT(\*)

FROM MonthlyReports

GROUP BY ReportMonth;

Table

Description automatically generated

## Answer 8:

### Commands:

SELECT \*

FROM MonthlyReports

WHERE ReportMonth = 5;

Table

Description automatically generated