Write up
Assignment 06

IT FDN 130 A Au 24:
Foundations Of Databases & SQL Programming

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Introduction.

This was a pretty easy week. It helped that I have used GitHub for years so that part was old hat.

Explain when you would use a SQL View.

One of the rules of programing is to not repeat yourself. If you find you are continuing to use the same blocks of code over and over, you should think about a way to DRY your code (Don't Repeat Yourself). So if there is a select statement that you find yourself reusing a lot, that's a clue that the statement should be moved into a saved SQL View so it can be used more efficiently.

But Views are also valuable for protecting sensitive data inside a table. If I want to make some data available to most users, but keep private data restricted to a smaller group of users, I can create a View containing only the less sensitive data. I can be sure that the private data is protected (with additional protections) while at the same time I can provide the general users of the database with the information they need.

Explain the differences and similarities between a View, Function, and Stored Procedure.

Views, Functions and Stored Procedures all allow us to save one or more SQL statements and reuse them. One major difference is that Functions and Stored Procedures allow parameters while Views do not. Views allow us to see the results of a Select statement or customize it further (add an additional filter), but we cannot change the View itself without permanently altering it.

By contrast a Function and a Stored Procedure allows us to pass in a value that alters the original view.

This view will only ever return a list of the members of the Friday clan. We can filter it further when we write further Select statements from this view, but we cannot change the fact it will only return the Friday clan (ClanID 6)

```
CREATE VIEW vLuminariesFridays
  AS
  SELECT * FROM Luminaries
    WHERE Luminaries.ClanID = 6;
GO
```

By contrast, a Function or Stored Procedure allows us to alter the results of the saved statement without changing it. In the examples below we can change the clan members that are returned by passing in a different ClanID when we invoke the Function or Stored Procedure

```
CREATE FUNCTION dbo.fLuminariesByClan(@ClanID int)
  RETURNS TABLE
  AS
  RETURN(SELECT * FROM Luminaries
    WHERE Luminaries.ClanID = @ClanID
  );
GO
```

As a Stored Procedure:

```
CREATE PROC pLuminariesByClan(@ClanID int)
  AS
  BEGIN
  SELECT * FROM Luminaries
    WHERE Luminaries.ClanID = @ClanID;
  END
GO
```

Functions must return a value. They cannot make permanent environmental changes to data — they cannot perform Insert or Update statements. But they can be used inside SQL statements.

Stored Procedures can change the database objects' values. Stored Procedures don't have to return a value.