

# GeoGIS2020

## SQL Manager

### Udkast

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Udarbejdet af: BrS  
Kontrolleret af:  
Godkendt af:



## 1. GENEREL BESKRIVELSE

SQL Manageren benyttes til at administrere de SQL databaser, som GeoGIS2020 systemet tilgår. SQL Manageren gemmer for hver database type:

- Tabeller, tabel kolonner og tabel relationer og nøgler
- Views, dvs. gemte standard søgninger
- Roller, dvs. oplysninger omkring adgangsforhold på tabelniveau

SQL Manageren benyttes til:

- At vedligeholde databaser. Brugeren kan kontrollere en eksisterende database og opdatere den med nye tabeller, tabel kolonner etc.
- At lave SQL Søgninger
- At definere de SQL søgninger, der benyttes i f.eks. skærbilleder og eksport funktioner

Menuen tilhørende SQL Manageren er beskrevet i detaljer i dokumentet: GeoGIS2020 Menuer

SQL Manageren åbnes ved at vælge en database og dernæst vælge funktionen: *Databaser > SQL Manager*:

The screenshot shows the SQL Manager interface for a database named 'GeoGIS2020: GeoGIS2020RegionH2 Produktion'. The interface is divided into several panes:

- Database Tree:** Shows a tree view of the database structure. The 'Points' table is selected, and its columns are listed below it. The 'PointNo' column is highlighted.
- Table View:** A table with 11 rows and 12 columns. The columns are: Nr., Tabel, Udtryk, Alias, Overskrift, Udskrift?, Sortering, Sortering Nr., Filter, Eller .., Eller .., and Eller .. The first row is highlighted in yellow.
- SQL Editor:** Contains a SQL query that selects data from the 'Projects' and 'Points' tables. The query is as follows:
 

```
SELECT
  Projects.ProjectNo,
  Projects.Title,
  Points.PointNo,
  Points.PublicNo,
  Points.PointType,
  Points.Projection1,
  Points.X1,
  Points.Y1,
  Points.VerticalRefId1,
  Points.Z1,
  Points.Bottom
FROM
  (Projects
  INNER JOIN Points ON (Points.ProjectId = Projects.ProjectId))
WHERE (
  Projects.ProjectNo LIKE '175%' )
OR (
  Projects.ProjectNo LIKE '159%' )
ORDER BY
  Projects.ProjectNo,
  Points.PointNo
```
- Buttons:** At the bottom, there are buttons for 'Fjern Alt', 'Fjern Where', 'Udfør', and 'Fortryd'.

SQL Manageren består af følgende vinduer:

- |                   |  |
|-------------------|--|
| 1. Database Træ   | Her listes database typens tabeller, tabel kolonner og views.  |
| 2. Tabeller       | Liste over alle tabeller tilhørende tabel typen  |
| 3. Views          | Liste over alle views tilhørende tabel typen   |
| 4. Tabel Kolonner | For den valgte tabel, de tilhørende tabel kolonner   |
| 5. Relationer     | For den valgte tabel, de tilhørende index, nøgler og relationer  |
| 6. Roller         | For den valgte tabel, de tilhørende roller og deres rettigheder i relation til tabellen  |
| 7. SQL Grid       | Grid, der benyttes ved definition af SQL søgninger   |
| 8. Sammenkædning  | Her defineres hvordan tabeller skal sammenkædes i en søgning   |
| 9. Parametre      | Parametre tilhørende en søgning  |
| 10. SQL           | SQL udtryk ved søgning. Svarer til indholdet af SQL Grid. Er data i SQL Grid ændret, så opdateres SQL udtrykket tilsvarende ved klik i tekstfeltet og omvendt.     |
| 11. Fejlbeskeder  | Fejlbeskeder i relation til fejl i SQL udtrykket   |
| 12. Resultater    | Resultater i form af dataliste ved afvikling af SQL Søgning. Datalisten er en standard formular, hvorfor de sædvanlige funktioner i menuen: Formular kan benyttes. |

Bemærk, at i modsætning til en standard SQL Manager såsom Microsoft SQL Server Management Studio eller Microsoft Access, så indeholder GeoGIS2020 SQL Manageren de tabeller, tabel kolonner og views, der bør være i databasen og ikke dem, der rent faktisk er i databasen. Programmet indeholder så funktioner til at opdatere den aktuelle database og tilsvarende funktioner til at opdatere den interne metadatabase med de tabeller, tabel kolonner eller views, der måtte være tilføjet.

## 2. METADATABASE

Data omkring de forskellige database typer gemmes i system databasen, der kan vælges vha. funktionen: *Hjælpeprogrammer > System Databaser*:

	Database Type	Database Navn	Database Link
System Database:	MSAccess	GG20Sys	C:\GeoGIS2020\Access\GG20Sys.mdb
Import Database:	MSAccess	GG20Import	C:\GeoGIS2020\Access\GG20Import.mdb
Tegnings Database:	MSAccess	GG20Draw	C:\GeoGIS2020\Access\GG20Draw.mdb
3D Tegnings Database:	MSAccess		C:\GeoGIS2020\Access\GG20Draw3D.mdb
GIS Udtræks Database:	MSAccess	GG20GIS	C:\GeoGIS2020\Access\GG20GIS.mdb
Kort Database:	MSAccess		C:\GeoGIS2020\Access\GG20Map.mdb

Standard Opdater Exit

System databasen kan som enhver anden database åbnes i database listen:

The screenshot shows the GG20 software interface. On the left is a 'Databaser' (Databases) tree view. The main window displays the 'Kolonner' (Columns) table for the 'Points' table in the 'GeoGIS2020' database.

Nr.	Column	Group	DisplaySequence	Key	Mandatory	Index	Autonumber	Internal	Unbound	Visible
0	CompanyId	1	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	Company	1	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	ProjectId	1	3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	ProjectNo	1	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Title	1	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1010	RegionNo	1	6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1011	ProjectMunicipalityNo	1	7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	PointId	2	8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	PointNo	2	9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	sPointId	1	10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Sequence	10	10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
65	sPointNo	1	10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DBFormat	ControlId	Control	Caption	Beskrivelse	Unit	DataType	Size	Precisi...	Fo
GeoGIS2020	5cb08c92-2554-4590-...	Title	Title	Project Title		String	255	0	

Attribute	Setup	Name	Value
148815	UK	Caption	Title
148814	DK	Caption	Titel
148817	UK	Description	Project Title
148816	DK	Description	Projekttitel

### 3. OPRETTE NY SQL SERVER DATABASE

SQL Manager programmen kan benyttes til at oprette en ny SQL Server Database fra start. Den tomme database skal dog oprettes i SQL Server værktøjet og tilknyttes til GeoGIS2020, men herefter kan man i SQL Manageren oprette tabeller, views og roller. Normalt vil man dog kunne downloade en seed database fra systemets support web side.

#### 1. Opret Tabeller

Tabeller oprettes ved at markere folderen Tabeller, herefter kan funktionen: *SQL > Opret I tem* danne de relevante SQL udtryk. Klik *Udfør*, for at afvikle de dannede SQL Scripts.

The screenshot shows the SQL Manager interface for a database named 'GeoGIS2020RegionH2 Produktion'. The 'Database Træ' (Database Tree) on the left shows the 'Tabeller' (Tables) folder expanded. The main window displays a list of tables with columns: Table, Beskrivelse, Nr., Historik?, and Status. The 'Alignments' table is selected, and its details are shown in the 'SQL' pane below. The SQL script includes the CREATE TABLE statement for 'Alignments' with various columns and their data types, followed by index creation and dropping commands.

Table	Beskrivelse	Nr.	Historik?	Status
Alignments	Alignments	1	<input checked="" type="checkbox"/>	
AlignmentVertices	Alignment Vertices	2	<input checked="" type="checkbox"/>	
AnalysisActions	Analysis - Actions	0	<input type="checkbox"/>	
AnalysisAmberValues	Analysis - Amber Values	3	<input checked="" type="checkbox"/>	
AnalysisAttributes	Analysis - Attributes [FLD01114]	4	<input type="checkbox"/>	
AnalysisBottles	Analysis - Bottles	0	<input checked="" type="checkbox"/>	
AnalysisCauses	Analysis - Causes [FLD01222]	21	<input type="checkbox"/>	
AnalysisColors	Analysis - Colors [STD00112]; [Jupiter 749]	21	<input type="checkbox"/>	

```

CREATE TABLE [Alignments] (
    [ProjectId] UniqueIdentifier Not Null,
    [AlignmentId] UniqueIdentifier Not Null,
    [Alignment] NVarChar(50) Not Null,
    [sAlignmentId] UniqueIdentifier Null,
    [Description] NVarChar(255) Null,
    [AlignmentType] NVarChar(50) Null,
    [LinkId] Int Identity (1,1) Not Null,
    [WKT] NVarChar(MAX) Null,
    [Geom] Geometry Null,
    [Active] Bit Not Null,
    [FRef] NVarChar(255) Null,
    [FRefProject] NVarChar(50) Null,
    [FRefAlign] NVarChar(255) Null)
GO
Drop index [Alignments].[Alignments_ProjectId_Index]
GO
Create index [Alignments_ProjectId_Index] on [Alignments] ([ProjectId])
GO
Drop index [Alignments].[Alignments_AlignmentId_Index]
GO
Create index [Alignments_AlignmentId_Index] on [Alignments] ([AlignmentId])
GO
Drop index [Alignments].[Alignments_FRef_Index]
GO

```



## 2. Opret Views

Views oprettes ved at markere folderen Views og herefter kan funktionen: *SQL > Opret I tem* danne de relevante SQL udtryk. Klik *Udfør*, for at afvikle de dannede SQL Scripts.

The screenshot shows the SQL Manager interface for a database named 'GeoGIS2020RegionH2 Produktion'. The 'Database Træ' (Database Tree) on the left shows the 'Views' folder expanded. The 'View' list in the center shows several views, with 'qryAlignments' selected. The 'SQL' editor at the bottom contains the following script:

```

DROP VIEW [qryProjects]
GO

CREATE VIEW [qryProjects]
AS
SELECT Projects.*, Companies.Company
FROM Companies RIGHT JOIN Projects ON Companies.CompanyId = Projects.CompanyId
GO

DROP VIEW [qryPoints]
GO

CREATE VIEW [qryPoints]
AS
SELECT Projects.CompanyId, Companies.Company, Projects.ProjectNo, Projects.Title, Projects.RegionNo, Projects.MunicipalityNo AS ProjectMunicipalityNo,
Points.*, Projects.Locked, sPoints.PointNo AS sPointNo, [Points].[Z1]-[Points].[Top] AS ZTop, [Points].[Z1]-[Points].[Bottom] AS ZBottom, [Points].[Z1]-
[Points].[WaterDepth] AS WaterLevel, Projects.Setup
FROM (Companies RIGHT JOIN Projects ON Companies.CompanyId = Projects.CompanyId) INNER JOIN (Points LEFT JOIN Points AS sPoints ON Points.sPointId =
sPoints.PointId) ON Projects.ProjectId = Points.ProjectId
GO

DROP VIEW [qrySamples]
GO

CREATE VIEW [qrySamples]
AS

```

At the bottom of the window, there are buttons for 'Fjern Alt', 'Fjern Where', 'Udfør', and 'Fortryd'.

### 3. Opret Roller

Roller oprettes ved at markere folderen Roller og herefter kan funktionen: *SQL > Opret I tem* danne de relevante SQL udtryk. Klik *Udfør*, for at afvikle de dannede SQL Scripts.

The screenshot shows the SQL Server Enterprise Manager interface. On the left, the 'Database Træ' (Database Tree) shows the 'GeoGIS2020RegionH2 Produktion' database with folders for 'Tabeller', 'Views', and 'Roller'. The 'Roller' folder is expanded, showing three roles: 'GeoGIS2020Admin', 'GeoGIS2020Reader', and 'GeoGIS2020Writer'. The main pane displays a table with the following data:

Rolle	Admin?	Læse?	Indsætte?	Opdatere?	Slette?	Status
GeoGIS2020Admin	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unchanged
GeoGIS2020Reader	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unchanged
GeoGIS2020Writer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unchanged

Below the table, there is a link: '\* Click here to add a new row'. The 'SQL' tab is active, showing the following SQL script:

```

IF DATABASE_PRINCIPAL_ID(N'GeoGIS2020Admin') IS NULL
CREATE ROLE [GeoGIS2020Admin]
GO

IF DATABASE_PRINCIPAL_ID(N'GeoGIS2020Reader') IS NULL
CREATE ROLE [GeoGIS2020Reader]
GO

IF DATABASE_PRINCIPAL_ID(N'GeoGIS2020Writer') IS NULL
CREATE ROLE [GeoGIS2020Writer]
GO

REVOKE ALL ON [dbo].[Alignments] FROM [GeoGIS2020Admin]
GO

GRANT ALL ON [dbo].[Alignments] TO [GeoGIS2020Admin] AS [dbo]
GO

REVOKE ALL ON [dbo].[Alignments] FROM [GeoGIS2020Reader]
GO

GRANT SELECT ON [dbo].[Alignments] TO [GeoGIS2020Reader] AS [dbo]
GO

REVOKE ALL ON [dbo].[Alignments] FROM [GeoGIS2020Writer]
GO

```

At the bottom of the window, there are buttons for 'Fjern Alt', 'Fjern Where', 'Udfør', and 'Fortryd'.



#### 4. Opret Triggere

Triggere er små programmer, der afvikles når data opdateres i databasen. Triggere benyttes bl.a. i GeoGIS2020 databaser til at gemme historik, dvs. hvem, hvad, hvornår oplysninger omkring database opdateringer.

Triggere oprettes ved at markere folderen Tabeller og herefter kan funktionen: *SQL > Opret Trigger* danne de relevante SQL udtryk. Klik *Udfør*, for at afvikle de dannede SQL Scripts.

The screenshot shows the SQL Manager interface for the 'GeoGIS2020RegionH2 Produktion' database. The 'Database Træ' on the left shows the 'Roller' folder expanded, with three roles listed: 'GeoGIS2020Admin', 'GeoGIS2020Reader', and 'GeoGIS2020Writer'. The main table list shows the following tables:

Table	Beskrivelse	Nr.	Historik?	Status
Alignments	Alignments	1	<input checked="" type="checkbox"/>	
AlignmentVertices	Alignment Vertices	2	<input checked="" type="checkbox"/>	
AnalysisActions	Analysis - Actions	0	<input type="checkbox"/>	
AnalysisAmberValues	Analysis - Amber Values	3	<input checked="" type="checkbox"/>	
AnalysisAttributes	Analysis - Attributes [FLD01114]	4	<input type="checkbox"/>	
AnalysisBottles	Analysis - Bottles	0	<input checked="" type="checkbox"/>	
AnalysisCauses	Analysis - Causes [FLD01222]	21	<input type="checkbox"/>	

The 'SQL' editor at the bottom contains the following script:

```

IF DATABASE_PRINCIPAL_ID(N'GeoGIS2020Admin') IS NULL
CREATE ROLE [GeoGIS2020Admin]
GO

IF DATABASE_PRINCIPAL_ID(N'GeoGIS2020Reader') IS NULL
CREATE ROLE [GeoGIS2020Reader]
GO

IF DATABASE_PRINCIPAL_ID(N'GeoGIS2020Writer') IS NULL
CREATE ROLE [GeoGIS2020Writer]
GO

REVOKE ALL ON [dbo].[Alignments] FROM [GeoGIS2020Admin]
GO

GRANT ALL ON [dbo].[Alignments] TO [GeoGIS2020Admin] AS [dbo]
GO

REVOKE ALL ON [dbo].[Alignments] FROM [GeoGIS2020Reader]
GO

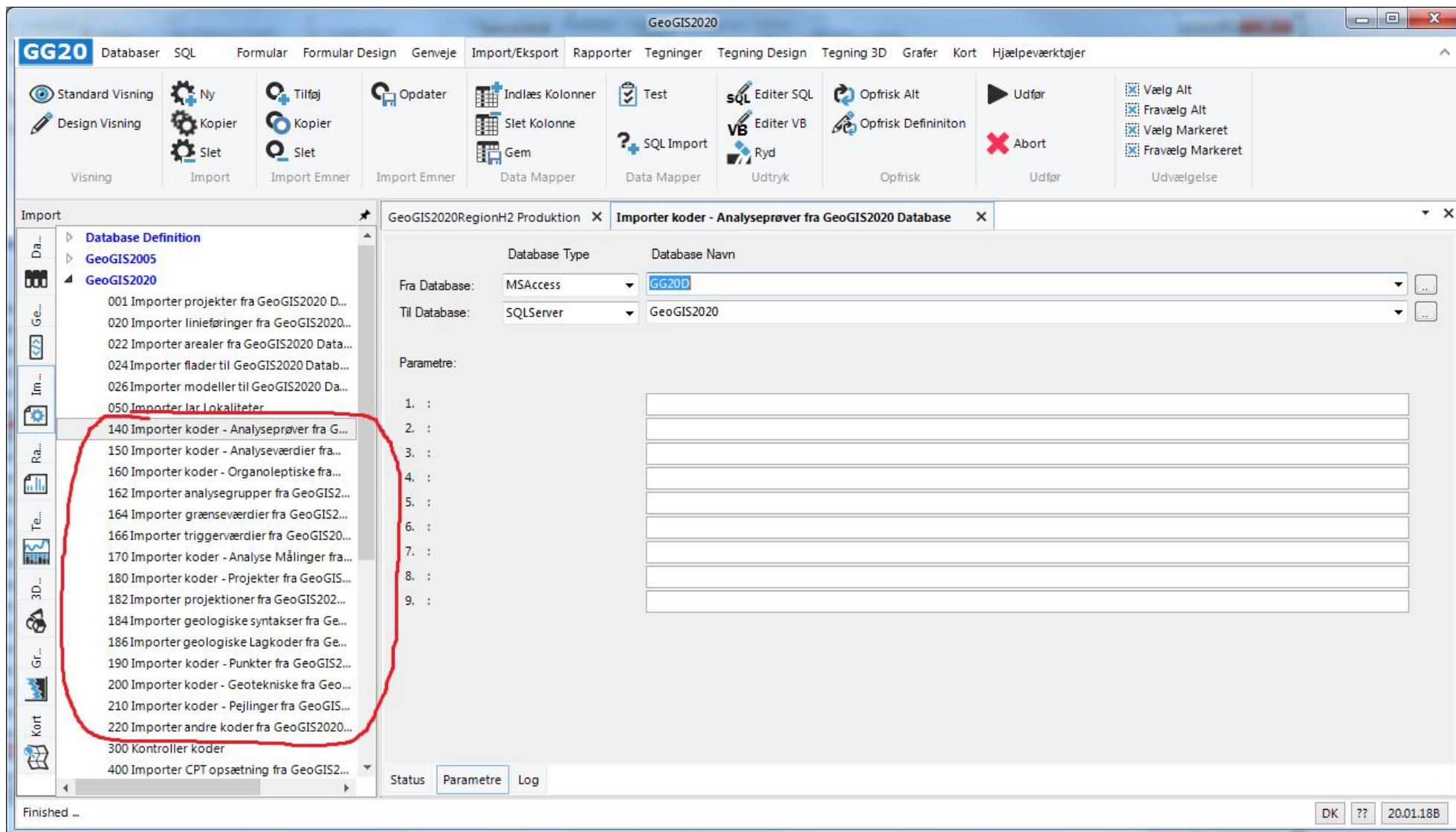
GRANT SELECT ON [dbo].[Alignments] TO [GeoGIS2020Reader] AS [dbo]
GO

REVOKE ALL ON [dbo].[Alignments] FROM [GeoGIS2020Writer]
GO
  
```

Buttons at the bottom include 'Fjern Alt', 'Fjern Where', 'Udfør', and 'Fortryd'.

## 5. Indlæs Stamdata

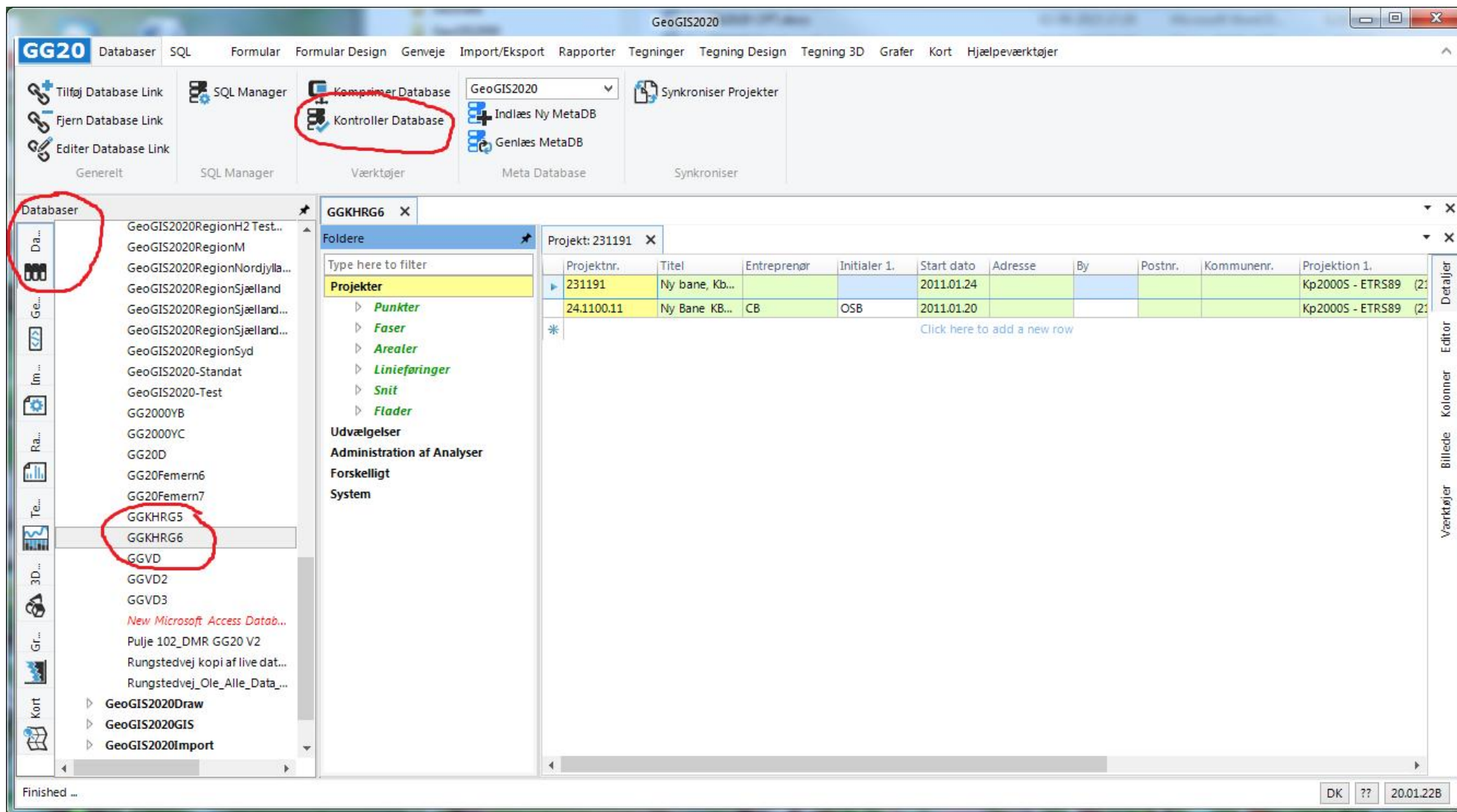
Stamdata kan indlæses fra en anden GeoGIS2020 database, benyt f.eks. GG20D.mdb databasen, der er en MS Access database, hvor alle tabeller og views er oprettet og kodetabeller er indlæst. Kodetabellerne kan importeres vha. Import funktionen:



## 4. KONTROL AF DATABASE

Installerer man en ny version af GeoGIS2020, eller har man modtaget en database i en ældre version, så kan man køre database kontrol programmet, der kan opdatere databasen til den gældende version. Er databasen en SQL Server database, så skal man have særlige rettigheder for at kunne foretage database opdateringer.

1. Marker databasen i database listen, dernæst vælg funktionen: *Kontroller Database*





2. De nødvendige opdateringer i form af nye tabeller, felter, relationer, views mm. listes:
  - a. Grønt indikerer nye elementer
  - b. Rødt indikerer elementer, der skal opdateres
3. Start opdateringen ved at klikke: *Udfør*

The screenshot shows the GeoGIS2020 SQL Manager interface. The main window displays a list of tables in the 'GGKHRG6' database. The table list is as follows:

Table	Beskrivelse	Nr.	Historik?	Status
CPTInterpretations	CPT Interpretations	39	<input checked="" type="checkbox"/>	
CPTInterpretationValues	CPT InterpretationValues	40	<input checked="" type="checkbox"/>	
CPTPush	CPT Push	41	<input checked="" type="checkbox"/>	
CPTSettings	CPT Settings	36	<input checked="" type="checkbox"/>	Tabel Ændret
CPTSummaries	CPT Summaries	42	<input checked="" type="checkbox"/>	Tabel Ændret
DBUpdates	DB Updates	43	<input type="checkbox"/>	
DocumentItems	Document Items	44	<input checked="" type="checkbox"/>	
DocumentRevisions	Document Revisions	45	<input checked="" type="checkbox"/>	

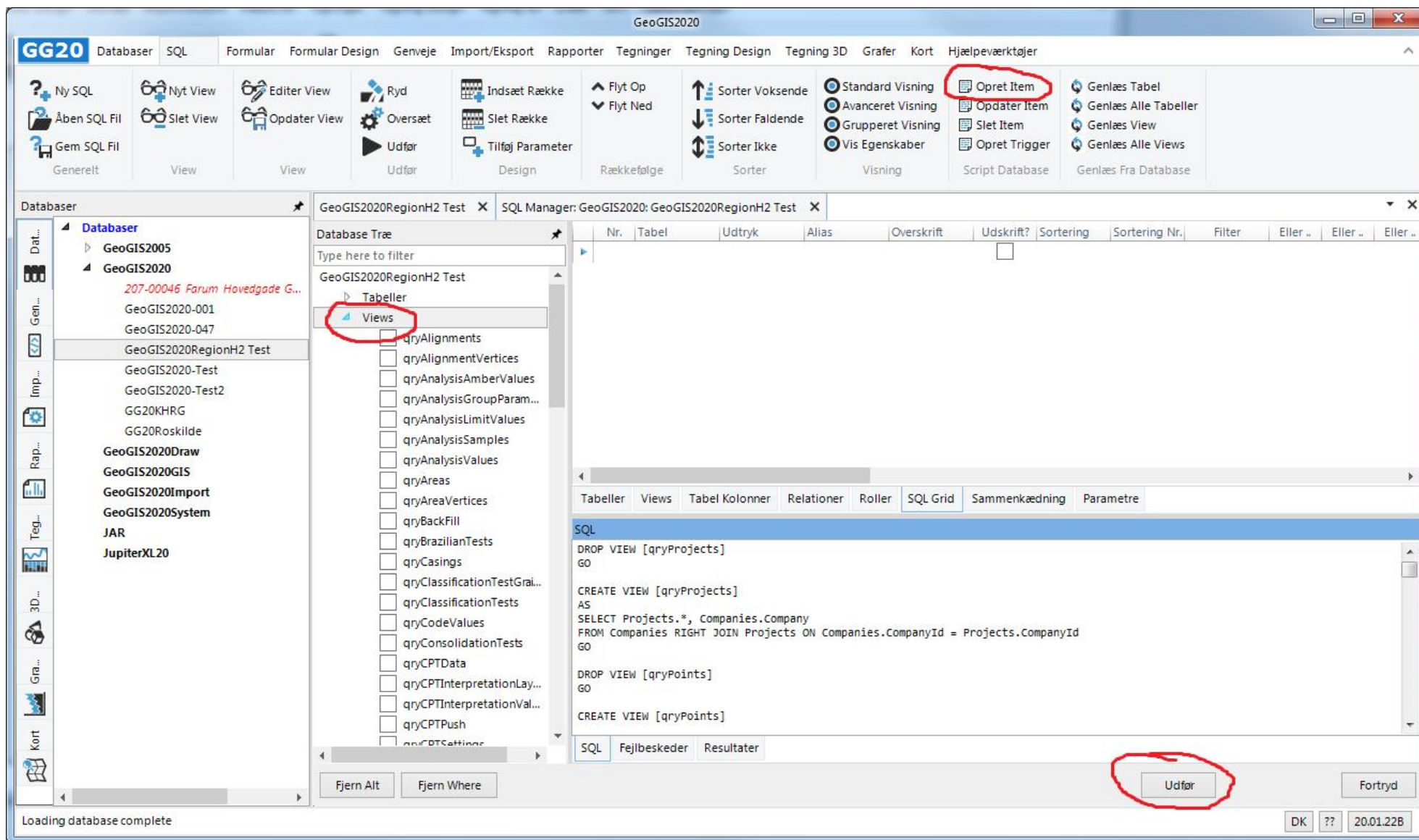
The 'CPTSettings' and 'CPTSummaries' tables are highlighted in red, indicating they need to be updated. The 'CPTData' table is highlighted in green, indicating it is a new element.

The SQL window shows the following SQL commands:

```
ALTER TABLE [CPTData] ALTER COLUMN [velocity] Single Null;
ALTER TABLE [CPTData] ADD [qcMova] Single Null;
ALTER TABLE [CPTData] ADD [qcMovaStDev] Single Null;
ALTER TABLE [CPTData] ADD [qcMovaSpike] Bit Not Null DEFAULT 0;
ALTER TABLE [CPTData] ADD [fsMova] Single Null;
ALTER TABLE [CPTData] ADD [fsMovaStDev] Single Null;
ALTER TABLE [CPTData] ADD [fsMovaSpike] Bit Not Null DEFAULT 0;
ALTER TABLE [CPTData] ADD [u2Mova] Single Null;
ALTER TABLE [CPTData] ADD [u2MovaStDev] Single Null;
```

The 'Udfør' button is circled in red, indicating it is the button to click to start the update process.

4. Opdaterer man en SQL Server database og er der eksisterende tabeller, der har fået tilføjet nye felter, så skal man også opdatere alle views:
  - a. I SQL Manager skærbilledet vælges folderen: *Views*
  - b. Aktiver funktionen: *Opret Item*, der danner et opdateringsscript til databasen
  - c. Klik: *Udfør*. Alle views droppes og oprettes på ny.



## 5. UDFØRE SØGNING

SQL Manageren kan benyttes til at oprette nye søgninger, dvs. nye SQL udtryk, eller til at ændre SQL udtryk for eksisterende skærbilleder. Her gennemgås, hvordan man laver en ny søgning, af punkter med tilhørende projektoplysninger:

### 1. Vælg Tabel

Vælg tabellen Projects i Database træet, marker de ønskede felter, der skal medtages:

The screenshot shows the SQL Manager interface for 'GeoGIS2020RegionH2 Produktion'. The 'Database Træ' (Database Tree) on the left shows the 'Projects' table selected under 'GeoGIS2020RegionH2 Produktion'. The 'Kolonner' (Columns) list for 'Projects' includes 'ProjectId (Projekt Id.) [PK, Guid]', 'ProjectNo (Projektnr.) [String (50)]', and 'Title (Titel) [String (255)]', with 'ProjectNo' and 'Title' checked. The 'SQL Grid' tab is active, showing a table with two rows: '1 Projects ProjectNo' and '2 Projects Title'. The 'SQL' editor at the bottom shows the query: 'SELECT Projects.ProjectNo, Projects.Title FROM Projects'.



## 2. Vælg Tabel

Vælg tabellen Points i Database træet, marker de ønskede felter, der skal medtages:

The screenshot shows the SQL Manager interface for a database named 'GeoGIS2020: GeoGIS2020RegionH2 Produktion'. The 'Database Tree' on the left shows the 'Points' table selected. The 'Kolonner' (Columns) list includes fields like 'ProjectId', 'PointId', 'PointNo', 'PublicNo', 'Projection1', 'X1', 'Y1', and 'Bottom'. The 'Table Selection Grid' in the center lists these columns with checkboxes for selection. The 'SQL Grid' at the bottom shows the generated SQL query.

Nr.	Tabel	Udtryk	Alias	Overskrift	Udskrift?	Sortering	Sortering Nr.	Filter	Eller ..	Eller ..	Eller ..	Eller ..
1	Projects	ProjectNo			<input checked="" type="checkbox"/>	No Sort						
2	Projects	Title			<input checked="" type="checkbox"/>	No Sort						
3	Points	PointNo			<input checked="" type="checkbox"/>	No Sort						
4	Points	PublicNo			<input checked="" type="checkbox"/>	No Sort						
5	Points	PointType			<input checked="" type="checkbox"/>	No Sort						
6	Points	Projection1			<input checked="" type="checkbox"/>	No Sort						
7	Points	X1			<input checked="" type="checkbox"/>	No Sort						
8	Points	Y1			<input checked="" type="checkbox"/>	No Sort						
9	Points	Bottom			<input checked="" type="checkbox"/>	No Sort						

```

SELECT
  Projects.ProjectNo,
  Projects.Title,
  Points.PointNo,
  Points.PublicNo,
  Points.PointType,
  Points.Projection1,
  Points.X1,
  Points.Y1,
  Points.Bottom
FROM
  (Projects
  INNER JOIN Points ON (Points.ProjectId = Projects.ProjectId))
  
```

### 3. Angiv Sortering og Filter

Angiv i SQL Grid sortering og filtrering, Klik i SQL vinduet for at se det endelige SQL udtryk:

The screenshot shows the SQL Manager interface for a database named 'GeoGIS2020: GeoGIS2020RegionH2 Produktion'. The 'Database Tree' on the left shows the 'Projects' table selected, with columns 'ProjectNo' and 'Title' checked. The 'SQL Grid' in the center lists the columns and their sorting and filtering settings:

Nr.	Tabel	Udtryk	Alias	Overskrift	Udskrift?	Sortering	Sortering Nr.	Filter	Eller ..	Eller ..	Eller ..	Eller ..
1	Projects	ProjectNo			<input checked="" type="checkbox"/>	Ascending	1	175*	159*			
2	Projects	Title			<input checked="" type="checkbox"/>	No Sort						
3	Points	PointNo			<input checked="" type="checkbox"/>	Ascending	2					
4	Points	PublicNo			<input checked="" type="checkbox"/>	No Sort						
5	Points	PointType			<input checked="" type="checkbox"/>	No Sort						
6	Points	Projection1			<input checked="" type="checkbox"/>	No Sort						
7	Points	X1			<input checked="" type="checkbox"/>	No Sort						
8	Points	Y1			<input checked="" type="checkbox"/>	No Sort						
9	Points	Bottom			<input checked="" type="checkbox"/>	No Sort						

Below the grid, the 'SQL' window displays the following query:

```

SELECT
  Projects.ProjectNo,
  Projects.Title,
  Points.PointNo,
  Points.PublicNo,
  Points.PointType,
  Points.Projection1,
  Points.X1,
  Points.Y1,
  Points.Bottom
FROM
  (Projects
  INNER JOIN Points ON (Points.ProjectId = Projects.ProjectId))
WHERE (
  Projects.ProjectNo LIKE '175%' )
OR (
  Projects.ProjectNo LIKE '159%' )
ORDER BY
  Projects.ProjectNo,
  Points.PointNo
  
```

At the bottom of the window, there are buttons for 'Fjern Alt', 'Fjern Where', 'Udfør', and 'Fortryd'.



## 4. Udfør Søgning

Udfør søgningen ved at klikke på knappen: *Udfør*

SQL Manager: GeoGIS2020: GeoGIS2020RegionH2 Produktion

Database Træ

Type here to filter

- waterDepth (GVS - Dybde) [Single]
- Active (Aktiv?) [Boolean]
- LinkId (Link Id.) [Integer]
- WKT (Wkt) [String(MAX)]
- Geom (Geometri) [String (255)]
- JupiterId (JupiterId) [Integer]
- FRef (FRef) [String (255)]
- FRefCom (FRefCom) [String (50)]
- FRefJob (FRefJob) [String (50)]
- FRefBor (FRefBor) [String (50)]
- FRefBor2 (FRefBor2) [String (50)]
- FRefDB (FRefDB) [String (255)]

Relationer

- PointSynonyms (Point Synonyms)
- PointTypes (Point Types)
- PointUses (Point Uses [Jupiter 855])
- PostalCodes (Postal Codes)
- PressuremeterTests (Pressuremeter Tests)
- ProctorTests (Proctor Tests)
- ProctorTestValues (Proctor Test Values)
- Projections (Projections)
- ProjectPhases (Project Phases)
- ProjectRights (Project Rights)
- Projects (Projects)**
  - (\*) Alle Kolonner
  - CompanyId (Firma Id.) [Guid]
  - ProjectId (Projekt Id.) [PK, Guid]**
  - sProjectId (O. Projekt Id.) [Guid]
  - ProjectNo (Projektnr.) [String (50)]**
  - ProjectType (Projekttype) [String (20)]
  - Title (Titel) [String (255)]**

Nr.	Tabel	Udtryk	Alias	Overskrift	Udskrift?	Sortering	Sortering Nr.	Filter	Eller ..	Eller ..	Eller ..	Eller ..
1	Projects	ProjectNo		Projektnr.	<input checked="" type="checkbox"/>	Ascending	1	LIKE '175%'	LIKE '159%'			
2	Projects	Title		Titel	<input checked="" type="checkbox"/>	No Sort						
3	Points	PointNo		Punktnr.	<input checked="" type="checkbox"/>	Ascending	2					
4	Points	PublicNo		DGU Nr.	<input checked="" type="checkbox"/>	No Sort						
5	Points	PointType		Punkttype	<input checked="" type="checkbox"/>	No Sort						
6	Points	Projection1		Projektion 1.	<input checked="" type="checkbox"/>	No Sort						
7	Points	X1		X1	<input checked="" type="checkbox"/>	No Sort						
8	Points	Y1		Y1	<input checked="" type="checkbox"/>	No Sort						
9	Points	Bottom		Bund	<input checked="" type="checkbox"/>	No Sort						

\* [Click here to add a new row](#)

Tabeller Views Tabel Kolonner Relationer Roller SQL Grid Sammenkædning Parametre

New Form

ProjectNo	Title	PointNo	PublicNo	PointType	Projection1	X1	Y1	Bottom
159-00165	Lakfabrik mv., Mørkhøj Byg...	201.10465	201.10465	B	25832	718447,00	6181814,00	11,00
159-00165	Lakfabrik mv., Mørkhøj Byg...	201.10466	201.10466	B	25832	718448,00	6181790,00	9,00
159-00165	Lakfabrik mv., Mørkhøj Byg...	201.10467	201.10467	B	25832	718435,00	6181794,00	7,00
159-00165	Lakfabrik mv., Mørkhøj Byg...	DP1		B	25832	718446,00	6181788,00	15,40
159-00165	Lakfabrik mv., Mørkhøj Byg...	PM1		B	25832	718424,00	6181804,00	7,40
159-00165	Lakfabrik mv., Mørkhøj Byg...	PM2		B	25832	718438,00	6181803,00	5,60
159-00208	Klausdalsbrovej 1-47. Mask...	201.6231	201.6231	B	25832	719231,00	6183204,00	12,00
159-00208	Klausdalsbrovej 1-47. Mask...	201.6232	201.6232	B	25832	719169,00	6183204,00	18,00
159-00208	Klausdalsbrovej 1-47. Mask...	201.6233	201.6233	B	25832	719192,00	6183204,00	18,00
159-00208	Klausdalsbrovej 1-47. Mask...	201.6234	201.6234	B	25832	719145,00	6183271,00	18,20
159-00208	Klausdalsbrovej 1-47. Mask...	201.7646	201.7646	B	25832	719206,56	6183262,85	10,00
159-00208	Klausdalsbrovej 1-47. Mask...	201.7647	201.7647	B	25832	719213,00	6183258,25	12,00
159-00208	Klausdalsbrovej 1-47. Mask...	201.7648	201.7648	B	25832	719213,31	6183218,06	10,50
159-00208	Klausdalsbrovej 1-47. Mask...	201.7649	201.7649	B	25832	719201,96	6183250,27	11,00

\* [Click here to add a new row](#)

SQL Fejlbeskeder New Form

Fjern Alt Fjern Where Udfør Fortryd