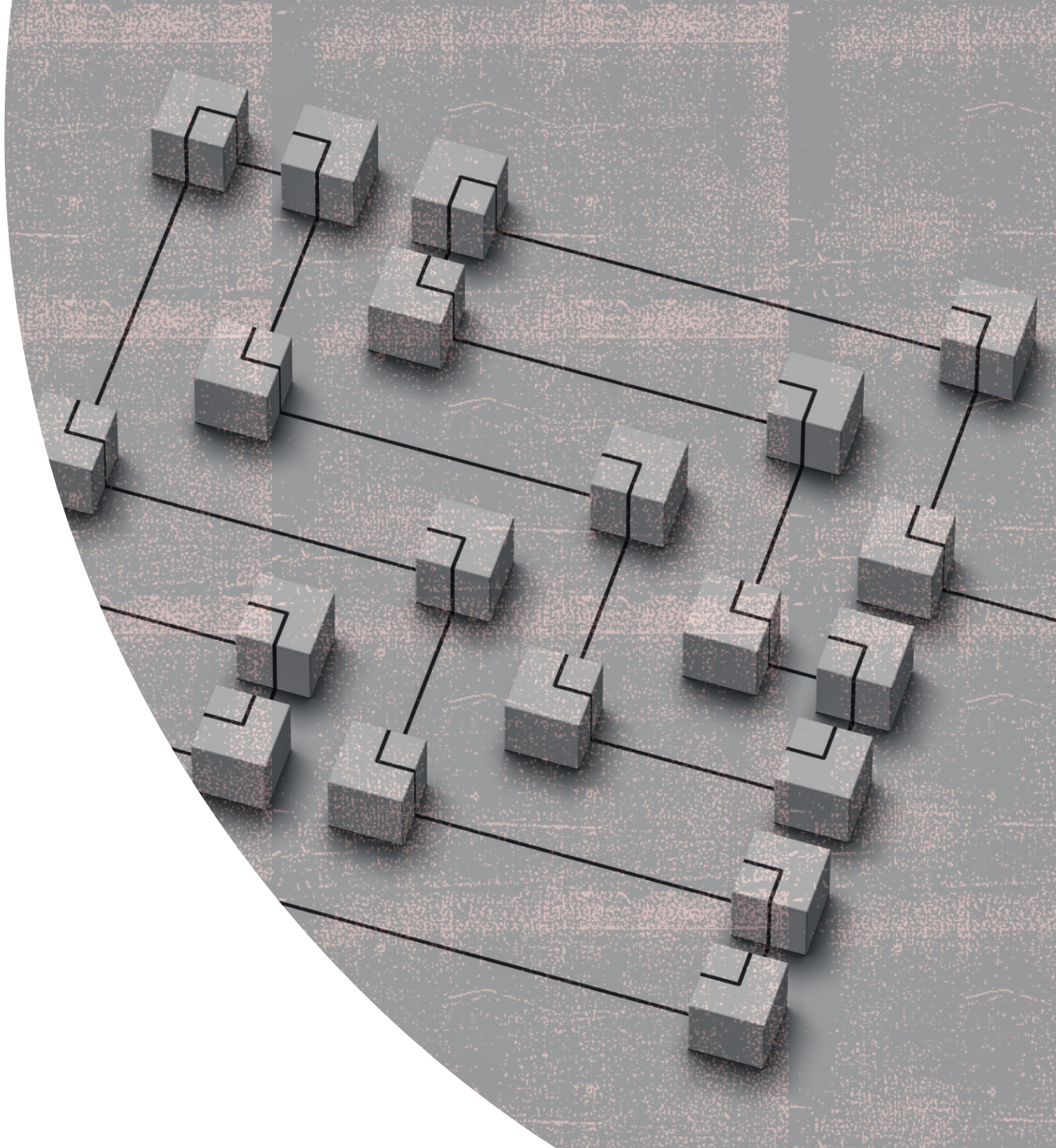
CIVIL CONSTRUCTION

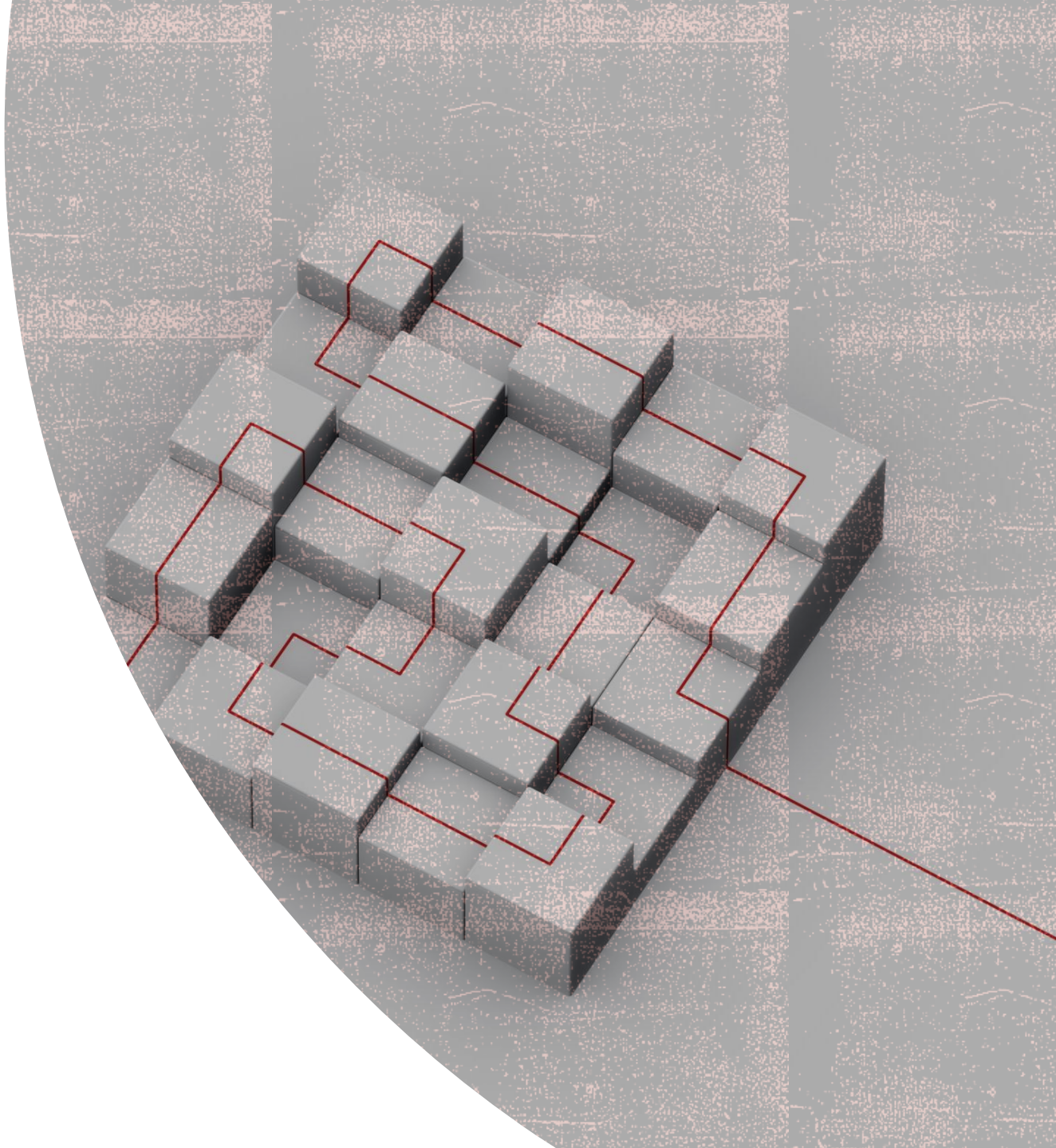
CREATE AND USE DATABASE

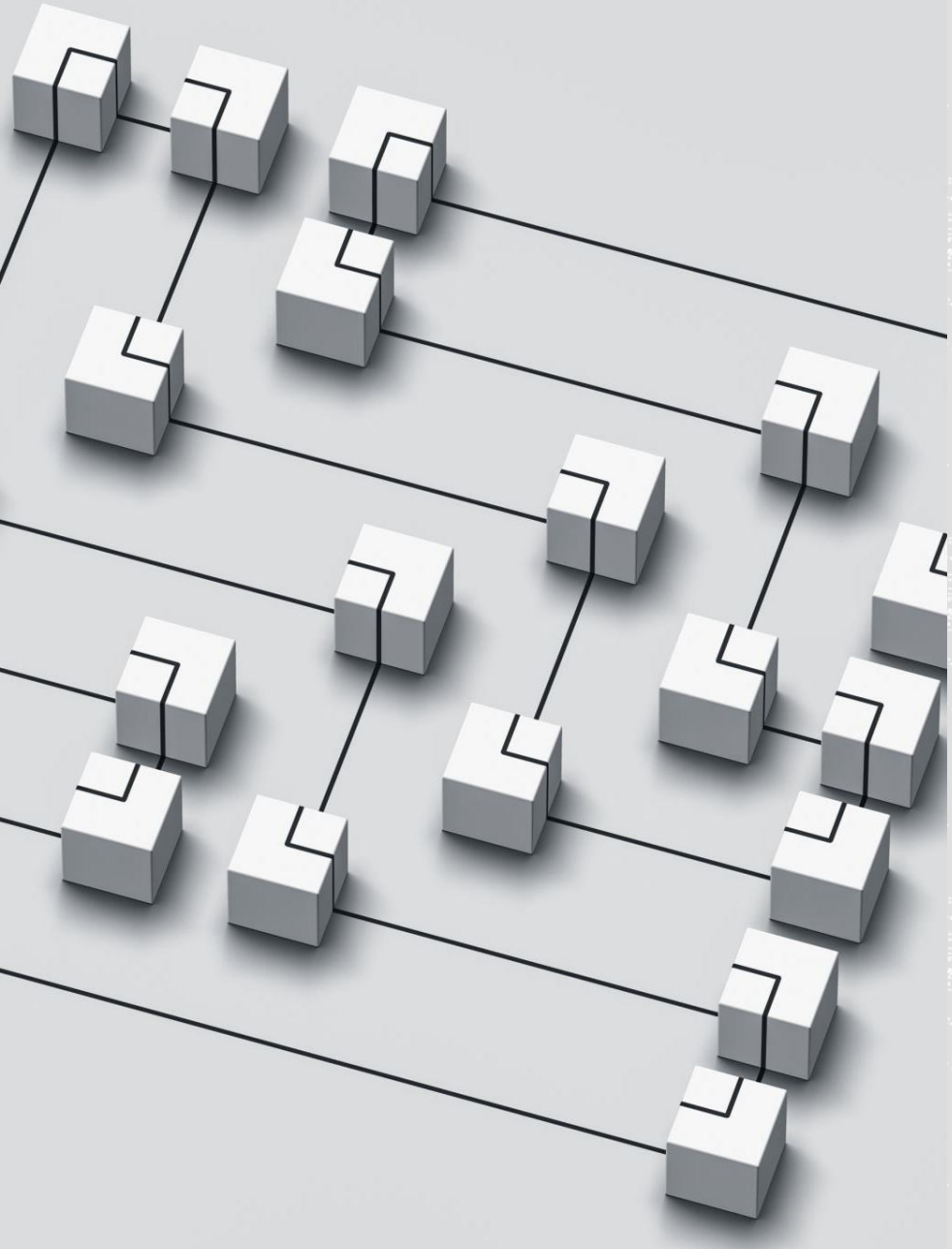
- CREATE DATABASE civildataset;
- USE civildataset;



SELECTS HIGH-RISK PROJECTS WITH DETAILS

- SELECT Project_ID, Project_Type, Location, Risk_Level, Completion_Percentage
- FROM bim_ai_civil_engineering_dataset
- WHERE Risk_Level = 'High';





2. RETRIEVES PROJECTS WITH COST OVERRUNS (ACTUAL > PLANNED)

- SELECT Project_ID, Project_Type, Planned_Cost, Actual_Cost, Cost_Overrun
- FROM bim_ai_civil_engineering_dataset
- WHERE Actual_Cost > Planned_Cost;

3. FINDS AVERAGE SCHEDULE DEVIATION GROUPED BY PROJECT TYPE

- SELECT Project_Type, AVG(Schedule_Deviation) AS Avg_Schedule_Deviation
- FROM bim_ai_civil_engineering_dataset
- GROUP BY Project_Type;

4. COUNTS TOTAL ACCIDENTS PER LOCATION, ORDERED BY HIGHEST ACCIDENTS

- SELECT Location, SUM(Accident_Count) AS Total_Accidents
- FROM bim_ai_civil_engineering_dataset
- GROUP BY Location
- ORDER BY Total_Accidents DESC;

5. LISTS TOP FIVE MOST EXPENSIVE PROJECTS BY ACTUAL COST

- SELECT Project_ID, Project_Type, Actual_Cost
- FROM bim_ai_civil_engineering_dataset
- ORDER BY Actual_Cost DESC LIMIT 5;

6. SELECTS UNSAFE PROJECTS (LOW COMPLETION <50% AND HIGH SAFETY RISK >5)

- SELECT Project_ID, Project_Type, Completion_Percentage, Safety_Risk_Score
- FROM bim_ai_civil_engineering_dataset
- WHERE Completion_Percentage < 50 AND Safety_Risk_Score > 5;

7. RETRIEVES PROJECTS UNDER SNOWY WEATHER CONDITIONS WITH CLIMATE DETAILS

- SELECT Project_ID, Project_Type, Location, Weather_Condition, Temperature, Humidity
- FROM bim_ai_civil_engineering_dataset
- WHERE Weather_Condition = 'Snowy';

8. SELECTS PROJECTS WITH EXCESSIVE VIBRATION AND CRACK WIDTH

- SELECT Project_ID, Project_Type, Vibration_Level, Crack_Width
- FROM bim_ai_civil_engineering_dataset
- WHERE Vibration_Level > 2.0 AND Crack_Width > 3.0;

9. FINDS PROJECTS WITH ANOMALIES, SORTED BY LOWEST COMPLETION

- SELECT Project_ID, Completion_Percentage, Anomaly_Detected
- FROM bim_ai_civil_engineering_dataset
- WHERE Anomaly_Detected > 0
- ORDER BY Completion_Percentage ASC;

10. FINDS THE PROJECT WITH MAXIMUM SCHEDULE DEVIATION

- SELECT Project_ID, Project_Type, Schedule_Deviation
- FROM bim_ai_civil_engineering_dataset
- ORDER BY Schedule_Deviation DESC
- LIMIT 1;

11. FINDS AVERAGE COMPLETION PERCENTAGE BY RISK LEVEL (DESCENDING ORDER)

- SELECT Risk_Level, AVG(Completion_Percentage) AS Avg_Completion
- FROM bim_ai_civil_engineering_dataset
- GROUP BY Risk_Level
- ORDER BY Avg_Completion DESC;

12. RETRIEVES TOP 3 COSTLIEST PROJECTS PER PROJECT TYPE

```
SELECT Project_ID, Project_Type, Actual_Cost
FROM (
    SELECT Project_ID, Project_Type, Actual_Cost,
        ROW_NUMBER() OVER (PARTITION BY Project_Type ORDER BY Actual_Cost DESC) AS rn
    FROM bim_ai_civil_engineering_dataset
) ranked
WHERE rn <= 3;
```

13. COUNTS HIGH-RISK PROJECTS BY LOCATION (ORDERED BY MOST)

- SELECT Location, COUNT(*) AS High_Risk_Projects
- FROM bim_ai_civil_engineering_dataset
- WHERE Risk_Level = 'High'
- GROUP BY Location
- ORDER BY High_Risk_Projects DESC;