Microsoft Access and Excel for Data-Driven Crime Analysis: A 5-Part Series

Part 2: Creating Helpful Queries and Reports to Streamline Workflows

Welcome to **Part 2** of our 5-part analytical series where we focus on the power of Microsoft Access® in creating helpful queries and building reports that can streamline workflows and improve data accessibility. This session is part of the ongoing collaboration between TxDOT and IADLEST, which has been critical in equipping Texas law enforcement with the tools they need to reduce crashes and improve public safety through data-driven strategies. We'll explore how to use queries to pull relevant crime, traffic, and crash data, and create detailed reports that can be easily shared across agencies. By automating repetitive tasks, you'll be able to improve workflow efficiency, helping both analysts and non-analysts assist detectives, handle traffic reports, and manage case loads more effectively. This session is a vital part of the continued partnership between TxDOT and IADLEST, aimed at providing ongoing support for law enforcement to work more efficiently and make data-driven decisions that have a direct impact on public safety.

Dawn Reeby
Senior Analytical Specialist

Welcome to **Part 2: Helpful Queries and Reports in Microsoft Access**

I'm Dawn Reeby, and I'm honored to guide you through this transformative training. With over 25 years in law enforcement analysis, I've spent nearly 14 of those years collaborating with IADLEST to deliver impactful analytical trainings, webinars, and technical assistance nationwide. Our work focuses on helping agencies implement smarter, data-driven strategies while fostering high-performing teams. As the author of *Bigger Than Data* and the *Building a Crime Analysis Legacy* books, my mission is to empower crime analysts and supervisors to strengthen their careers, build team capacity, and leave lasting legacies in the field.

In this session, we'll dive into tools and techniques using Microsoft Access and Excel to help you manage and analyze data effectively, creating strategies that drive results. I'm here to share my experience and insights with you, and I'm excited to help you take your analytical skills to the next level!

Let's get started!
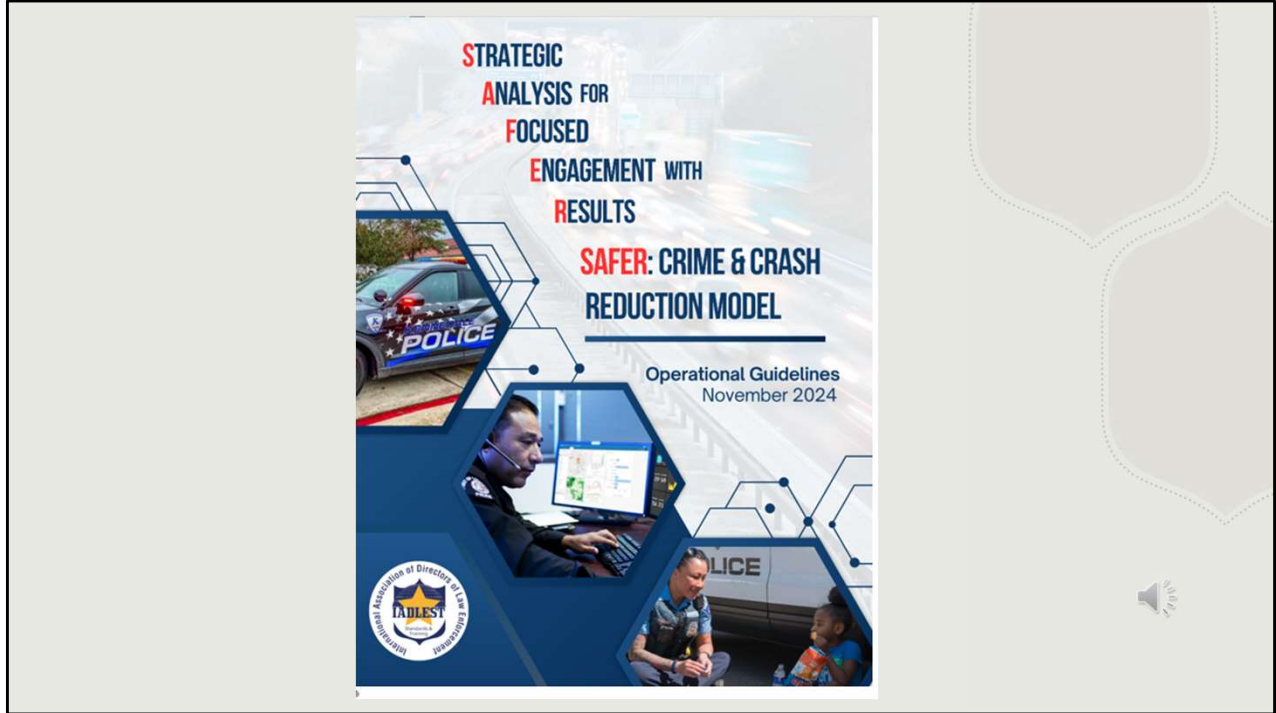
The SAFER (Strategic Analysis for Focused Engagement with Results: Crime and Crash Reduction) model, developed by the International Association of Directors of Law Enforcement Standards and Training (IADLEST) and supported by the Texas Department of Transportation (TxDOT), integrates location-based crime and crash data to create long-term strategies for reducing social harms. It builds on the earlier DDACTS 2.0 model, initially supported by the National Highway Traffic Safety Administration (NHTSA). IADLEST offers a variety of resources, including workshops, literature, webinars, and training, to help law enforcement agencies implement data-driven models like SAFER for more effective crime and traffic safety analysis and deployment.

Part 1: Data-Driven Strategy Basics & SAFER Model in Action RECAP

Welcome back! This session is part of our 5-part series designed to guide you through the practical applications of data-driven strategies in law enforcement. While each part builds on the previous one, every segment is designed to stand on its own, so you can follow along no matter where you start.

In Part 1: Data-Driven Strategy Basics and SAFER Model in Action, we laid the foundation by exploring data-driven strategies and the SAFER model, which helps enhance crime and traffic safety analysis. In today's session, Part 2, we'll dive into how to create helpful queries and reports in Microsoft Access® to streamline your workflow and automate repetitive tasks. Whether you're building on the knowledge from Part 1 or jumping in fresh, you'll walk away with practical skills that you can apply immediately.

Each session is crafted to give you tools and techniques you can use on their own, but together they provide a comprehensive approach to improving your agency's analytical capabilities. So, let's get started with Part 2!

Learning Objectives

1	2	3
Objective 1: Demonstrate how to manually input data into Microsoft Access.	**Objective 2**: Construct essential queries in Microsoft Access® to retrieve relevant crime, traffic, and CRIS data.	**Objective 3**: Develop detailed reports that clearly present analytical findings.

Part 2: Helpful Queries and Reports

This session focuses on creating effective queries and reports in Microsoft Access® to streamline the analysis process for automating repetitive tasks.

Learning Objectives:

1. Demonstrate how to manually input data into Microsoft Access® for agencies lacking direct connections (e.g., ODBC) to empower non-analysts to manage case loads, assist detectives, and handle traffic officer work, complaints, and crash reports.

2. Construct essential queries in Microsoft Access® to retrieve relevant crime, traffic, and CRIS data.

3. Create reports that present findings clearly and automate tasks to improve workflow efficiency.

Access Overview – Why Use Queries and Reports?

STREAMLINE DATA EXTRACTION AND ANALYSIS.

REDUCE MANUAL WORKLOAD AND IMPROVE ACCURACY.

**ENHANCE DATA VISUALIZATION THROUGH STRUCTURED REPORTS.**

Microsoft Access is a powerful tool for organizing and analyzing data. In law enforcement, analysts often manage large volumes of data—whether it's crime records, traffic incidents, or other key datasets. Access provides two important features: **Queries** and **Reports**.
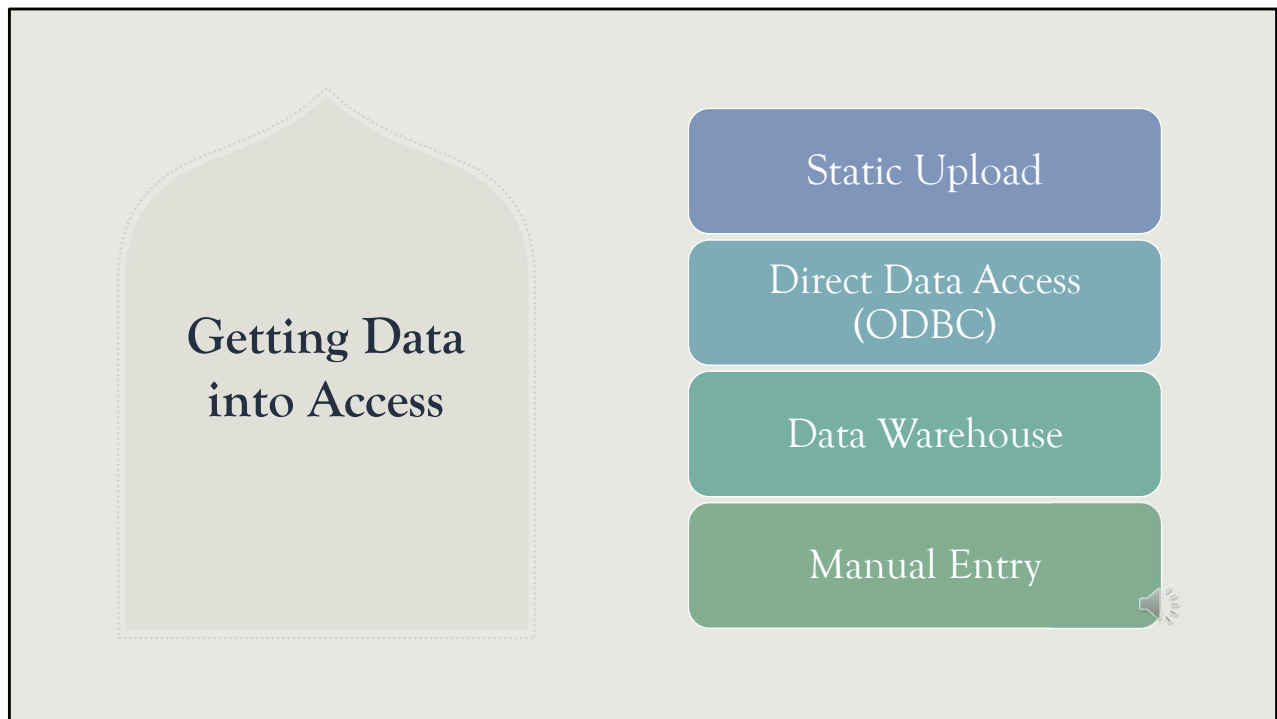
Queries allow us to quickly filter through data to find exactly what we need. This could be specific records, like recent incidents within a particular neighborhood or crimes within a certain date range. Using queries, we can target precise data points without manually searching, saving time and reducing errors.

On the other hand, **Reports** help us present this data visually. With reports, we can take the data from our queries and turn it into structured summaries, charts, or tables that are easy to share and interpret. They're useful for everything from monthly crime summaries to detailed case reports.

Together, queries and reports can help us streamline our analysis, automate repetitive tasks, and ultimately make our work more efficient and impactful. Let's look into how these work in more detail, starting with creating effective queries.
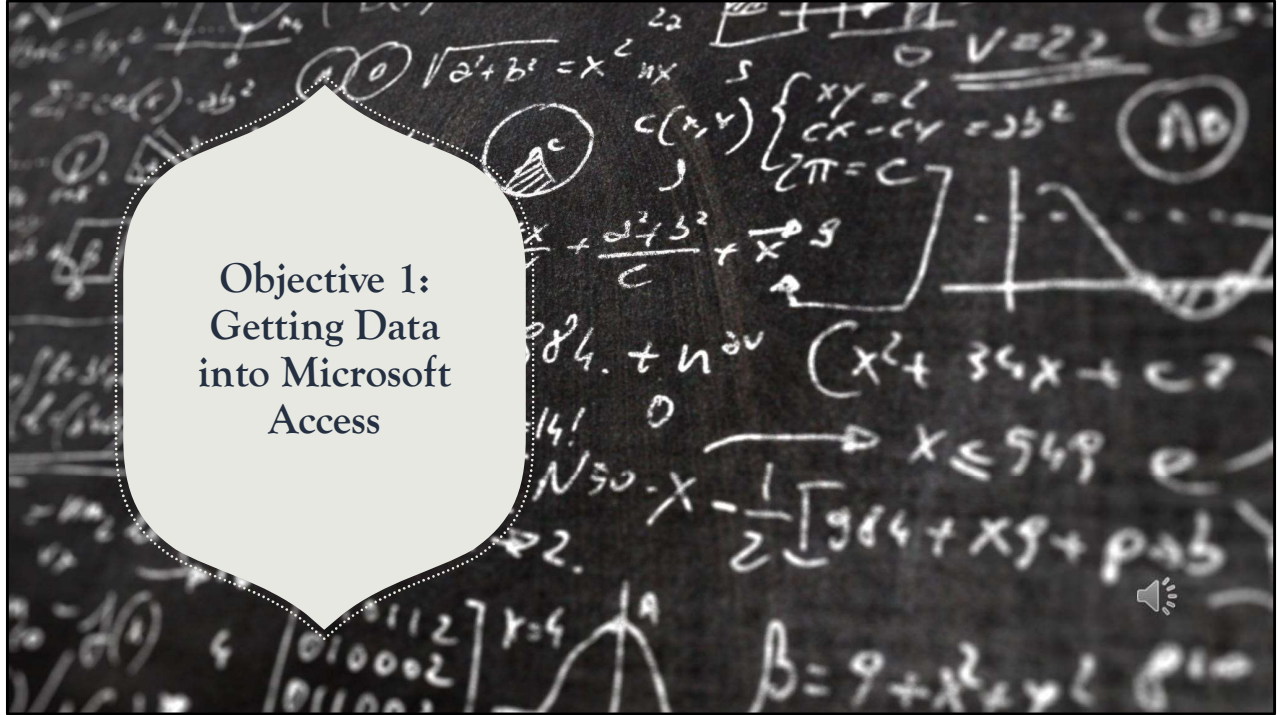
Objective 1: Demonstrate how to manually input data into Microsoft Access® for agencies lacking direct connections (e.g., ODBC) to empower non-analysts to manage case loads, assist detectives, and handle traffic officer work, complaints, and crash reports.

Getting Data into Access

- Static Upload
- Direct Data Access (ODBC)
- Data Warehouse
- Manual Entry

There are 4 ways to gain access to data.

As Christopher Bruce shares in his Modern Crime analysis blog "For @#$&'s Sake, Just Give Me the Data" (http://moderncrimeanalysis.blogspot.com/2022/09/for-sake-just-give-me-data.html): "Imagine being hired as a head chef for a new restaurant. You show up for your first day of work and find the kitchen full of pots and pans but no ingredients. When you ask the facilities manager where the food is, he tells you that it's all locked in a separate room, but if you tell him what you need, one ingredient at a time, he'll bring them out to you when he gets around to it."

"...by far the top issue that I have encountered when evaluating crime analysis units is the simple inability for analysts to access the agency's data at an appropriate level. Everywhere I go, I find analysts fighting with their IT staffs and records management system (RMS) vendors, making do with half-measures, and hand-entering data that already exists in databases into their own, separate, data systems because they can't get at the official data."

"...For crime analysts to do their jobs, they need direct, timely access to the

agency's call-for-service (CAD) and crime (RMS) data in its original relational format."

Getting Data into Access: Static Files Upload
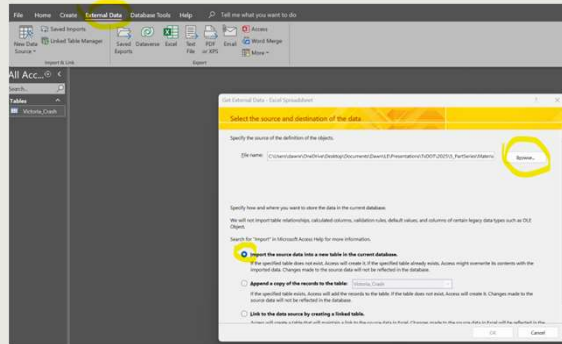
GO TO YOUR VIDEO LIBRARY: "IMPORTING EXCEL INTO ACCESS" VIDEO
GO TO YOUR VIDEO LIBRARY: "FORMATTING DATA"VIDEO

Static file imports refer to the process of importing data from fixed, non-dynamic files into a system or database for analysis or reporting. These files typically contain structured data that doesn't change regularly or in real-time, such as CSV (Comma Separated Values), Excel spreadsheets, or other file formats. The key characteristic of static files is that they are not automatically updated or linked to live data sources.

Here are the main points to understand about static file imports:

1.Fixed Data Source: A static file import involves transferring data from a file that is not connected to any ongoing data feed or live system. The file is usually manually provided, extracted, or generated, and it represents a snapshot of the data at a certain point in time.

2.File Formats: Common file formats for static imports include:
1. **CSV**: Comma-separated text files, often used for tabular data.
2. **Excel**: Spreadsheets with more complex formatting, including multiple sheets, formulas, and data types.
3. **JSON or XML**: Files that store structured data in formats suited for web applications or data interchange.

3. **Data Import Process**: The static file is uploaded or manually imported into a database or analysis system. This is usually a one-time or periodic operation (e.g., weekly, monthly), rather than a continuous data stream.

4. **Limited Updates**: Once the file is imported, it is typically not updated automatically. Any new data must be manually imported from an updated file. For example, an analyst might receive a monthly report in CSV format, and they would manually import the new file each month to keep the data up-to-date.

5. **Use Cases in Law Enforcement**: In law enforcement, static file imports might include reports on arrests, citations, or incident data that were manually exported from an RMS, or data from external sources like crime reports or court documents. Analysts can import this static data to analyze trends, track performance, or generate reports, without needing real-time data from the system.

6. **Data Transformation**: Before importing static files, they may need to be cleaned or transformed to fit the structure required by the system. For example, certain fields might need to be reformatted, missing data handled, or values standardized.

In summary, static file imports are used to bring in a fixed set of data that does not update automatically. This method is useful for integrating periodic reports or external datasets into systems for analysis, but it requires manual intervention to keep the data current.

Getting Data into Access: ODBC
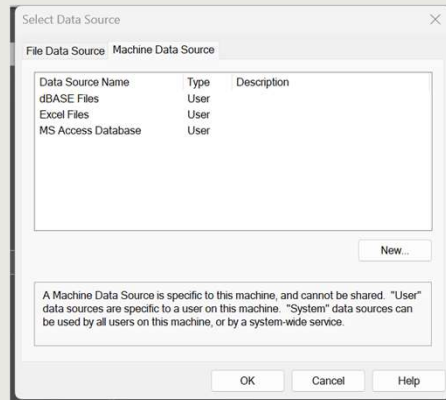
ODBC (Open Database Connectivity) is a standard API (Application Programming Interface) that allows applications to access data in a database management system (DBMS), regardless of the type of database (e.g., MySQL, SQL Server, Oracle). ODBC provides a universal data connection method, enabling analysts and applications to query, update, and manipulate data stored in various databases.

Here's a breakdown of how ODBC works and its role in data access:

1. Data Access Layer
•ODBC acts as an intermediary between an application (such as a crime analysis tool or reporting software) and the database. Instead of the application needing to know specific details about the database (e.g., MySQL or SQL Server syntax), it can use ODBC to communicate with any database that has an ODBC driver installed.

2. ODBC Drivers
•For each database type (like Microsoft SQL Server, PostgreSQL, or MySQL), there is an ODBC driver that translates the standard SQL queries sent by the application into a format that the specific database understands. The driver acts

as a bridge between the application and the database.
•The ODBC driver is essential because it ensures that the application can work with any compatible database without needing custom integration code for each type.

3. Connection Process
•To use ODBC, a user or application sets up a **Data Source Name (DSN)**, which is essentially a configuration that specifies the details needed to connect to a database (e.g., server name, database name, login credentials).
•The application uses the DSN to establish a connection to the database via the ODBC driver.

4. Cross-Platform and Database Independence
•ODBC enables cross-platform compatibility. As long as an ODBC driver is available for the database, the application can run on different operating systems (Windows, macOS, Linux) and access any supported database without needing to be rewritten for each specific database system.

5. Real-Time Data Access
•Unlike static file imports, ODBC provides real-time or on-demand access to data stored in a live database. This means analysts can run queries or pull data into their tools whenever needed, ensuring that they are always working with the most up-to-date information.

6. Use Cases in Law Enforcement
•In law enforcement, ODBC might be used to connect a crime analysis tool to a Records Management System (RMS) or a Computer-Aided Dispatch (CAD) system, enabling real-time access to arrest data, incident reports, or dispatch logs. Analysts can run queries to retrieve specific datasets for analysis, such as pulling records on recent crimes or generating daily incident reports.

7. Advantages
•**Flexibility**: Access data from any supported database without custom development.
•**Efficiency**: Retrieve real-time data from live systems rather than relying on static imports or manual data exports.
•**Standardization**: ODBC provides a standardized way for applications to interact with different types of databases, simplifying integration.

8. Security and Authentication
•ODBC connections can be configured to use secure authentication methods and encryption, ensuring that sensitive law enforcement data is protected during transmission between the application and the database.

In summary:
ODBC allows seamless access to diverse databases by using a standardized interface. It enables analysts to connect to various data sources (like RMS or CAD systems) in real-time, query them for insights, and use the retrieved data for

further analysis or reporting, all while abstracting away the technical details of each specific database system.

Connection in Videos

SEE VIDEO 1

SEE VIDEO 2

GO TO YOUR RESOURCES:

- "Advanced Programming in Access 2013. Creating an ODBC Connection To SQL Server"
- "How to Configure ODBC to Access a Microsoft SQL Server"

Here's are two great videos for your IT staff should they need assistance creating an ODBC connection to SQL Server. The walk you through everything that we did on the previous 7 steps.

- "Advanced Programming in Access 2013. Creating an ODBC Connection To SQL Server" December 2014. https://youtu.be/D7kWjb6AmK0

- "How to Configure ODBC to Access a Microsoft SQL Server" November 2011. Retrieved December 2020. https://www.youtube.com/watch?v=tUiaK5fRH7k

Getting Data into Access: Data Warehouse

A **Data Warehouse** is a centralized repository that stores data from multiple sources, including law enforcement databases like RMS (Records Management Systems) and CAD (Computer-Aided Dispatch), as well as other related systems. The purpose of a data warehouse is to provide a comprehensive, structured, and accessible collection of data that can be used for analysis and reporting.
Here are key aspects of a data warehouse in the context of law enforcement data:

1.**Centralized Data Storage**: It consolidates data from different operational systems, such as RMS, CAD, and other related systems, into one place. This makes it easier for analysts to access a wide range of data without having to search through multiple systems.
2.**Historical Data**: A data warehouse typically stores large amounts of historical data, which allows analysts to conduct trend analyses, comparisons over time, and predictive modeling.
3.**Data Integrity**: The data is often cleaned, transformed, and standardized before being stored in the warehouse, ensuring consistency and reliability for analysis.
4.**Support for Advanced Analytics**: Since a data warehouse integrates various

sources of data, it supports more sophisticated analyses like cross-referencing incidents, linking people, places, and events, and performing trend or hotspot analysis across multiple years of data.

5. **ETL (Extract, Transform, Load)**: Data from various systems is extracted, transformed to fit the format of the data warehouse, and then loaded into the warehouse. This process ensures that the data is clean and properly structured for analysis.

6.Query and Reporting Tools: Analysts can use specialized tools to query the data warehouse and generate reports or conduct complex analyses. These tools often include dashboards and visualizations to aid decision-making.

In summary, a data warehouse allows analysts to perform in-depth analysis on large datasets over time, combining data from various systems into a unified view, which supports better decision-making in law enforcement operations.

Challenges without Direct Data Connections

- Common limitations in smaller agencies.
- Importance of manual data handling for analysts and support staff.

Smaller agencies often face significant challenges when they don't have direct data connections, like ODBC, which can limit the speed and efficiency of data analysis. Without a direct connection, analysts and support staff must rely on manual data handling, which can be both time-consuming and error-prone.

Manual data entry means analysts must take extra steps to pull data from different sources, clean it, and input it into Access. While this process can be cumbersome, it's critical for those agencies without automated systems. For smaller agencies or those new to data analysis, mastering manual data handling is essential to keep operations smooth and ensure they can still support investigators, track cases, and respond to emerging trends effectively.

Importing Data from Excel

One of the most efficient ways to get data into Access is by importing Excel spreadsheets. This allows you to leverage Excel's familiar interface for data entry while taking advantage of Access's powerful database capabilities. We'll cover the step-by-step process for importing Excel data into Access in detail during Part 3 of this training series.

**Getting Data into Access:
Manual Data Entry**
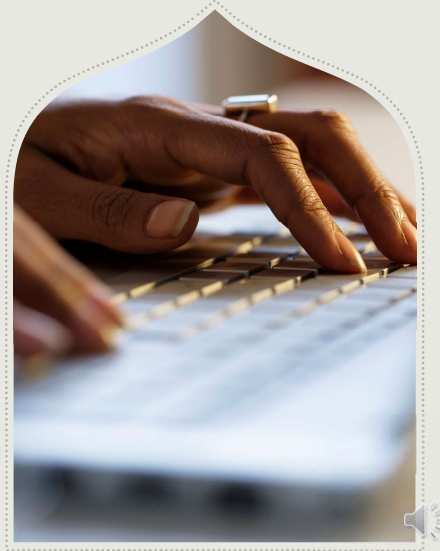
Manual Entry refers to the process of inputting data manually into a system or database. While this method doesn't involve automated data collection or direct system integration (like ODBC or static file imports), it remains a crucial way to input data in situations where automatic data retrieval is not possible or practical. Manual entry involves human interaction to enter and organize data, which makes it important to have strategies and techniques in place to ensure accuracy and consistency.

Strategies for Manual Entry
1.Organizing Data Fields for Consistency
    1. To ensure accurate and consistent data input, it's vital to structure the data fields properly. This includes:
        1. Using clear, standardized field names.
        2. Providing predefined options (drop-down menus, checkboxes) for commonly entered values to avoid free-text errors.
        3. Grouping related fields together logically (e.g., victim information, suspect details, and case status) so that users can easily follow the structure.
    2. Example: In a crime reporting system, having fields like "Case

Number," "Incident Type," "Location," and "Date" consistently formatted across all cases ensures that data entry is uniform and easy to analyze later.

2. **Techniques to Reduce Error Rates**
    1. **Validation Checks**: Use built-in validation rules to catch common mistakes (e.g., ensuring that dates are entered correctly or that mandatory fields are not left blank).
    2. **User Training**: Regular training on proper data entry techniques reduces the likelihood of errors, such as incorrect spelling, missing information, or selecting incorrect options.
    3. **Field-Level Instructions**: Providing short descriptions or help text next to data fields to guide users on what to input and how to format it correctly.
    4. **Regular Audits and Review**: Periodically reviewing entered data for consistency and correctness can help spot trends in mistakes and adjust procedures accordingly.
    5. **Example**: In a traffic reporting system, validating the "Crash Date" to ensure it is a valid date and within an appropriate range helps prevent incorrect entries.

Examples of Manual Entry Applications
1.Detective Support: Logging Case Data and Managing Leads
    1. Detectives often need to manually log case data, such as details about suspects, evidence, leads, or case status. This information is vital for tracking investigations and ensuring that follow-up actions are taken.
    2. **Example**: A detective may manually enter case data into a system like a case management database, noting down leads, dates of interviews, and evidence collected. Organizing these entries in a consistent format ensures that all case-related information can be easily tracked and referenced in the future.

2.Traffic Data Entry: Recording Officer Reports, Crash Details, Complaints
    1. Manual entry is often used for recording reports filed by officers, such as traffic citations, crash reports, or citizen complaints. Data must be entered accurately to create an official record that can be used for analysis or legal purposes.
    2. **Example**: A traffic officer may manually enter crash report data, including the location of the accident, involved vehicles, weather conditions, and the parties involved. This information is entered into a database to track incidents and help with future analysis of accident patterns.

Building User-Friendly Forms for Input
1.Creating Forms to Streamline Manual Entry
1. Designing user-friendly forms can significantly improve the efficiency and accuracy of manual data entry. The goal is to create a system where users can easily navigate and fill out the required fields.
    1. Use **clear labeling** to ensure users understand what each field is asking for.
    2. Group related fields together to improve the flow of data entry.
    3. Use **pre-filled dropdowns** or checkboxes where possible to limit free-text input and reduce errors.
    4. **Example**: A case management system could include a form with clearly labeled sections for incident details, victim information, and officer notes. Predefined options for case types (e.g., "Burglary," "Assault") and dropdown menus for officer names help streamline the process and ensure consistency.

2.Using Access Forms to Ensure Data Accuracy and Accessibility
1. **Microsoft Access Forms** are often used to create structured, user-friendly data entry interfaces. These forms allow users to input data directly into a database without needing to interact with raw tables, which can be difficult for non-technical users to navigate.
    1. **Field Validation**: Access forms can be set up with input masks and validation rules to ensure that data entered into fields meets specific formats (e.g., phone numbers, dates).
    2. **Error Notifications**: If an entry doesn't meet the required criteria, the form can alert the user immediately, reducing the chances of incorrect data being entered.
    3. **Example**: An Access form for entering traffic citations might include fields for date, time, vehicle details, and violation type. The form can restrict the "Date" field to only accept valid dates and highlight missing fields, ensuring accuracy before submission.

In Summary:
Manual entry remains a key method for inputting important data into systems where automation isn't feasible. By using organized strategies, validating data, and creating intuitive input forms, organizations can reduce error rates and maintain the accuracy of data entered by users. For law enforcement, this could include entering crime reports, traffic data, or case information, all of which require careful attention to detail and consistency to support effective analysis and decision-making.

# Check-In Question #1

All analysts should work to gain ODBC

a) Yes, through static uploads.

b) Yes, through data warehouses.

c) Yes, through manual entry.

d) Not necessarily as each agency, depending on size, outcomes desired, and accessibility, will utilize an open database connection to the RMS/CAD system.

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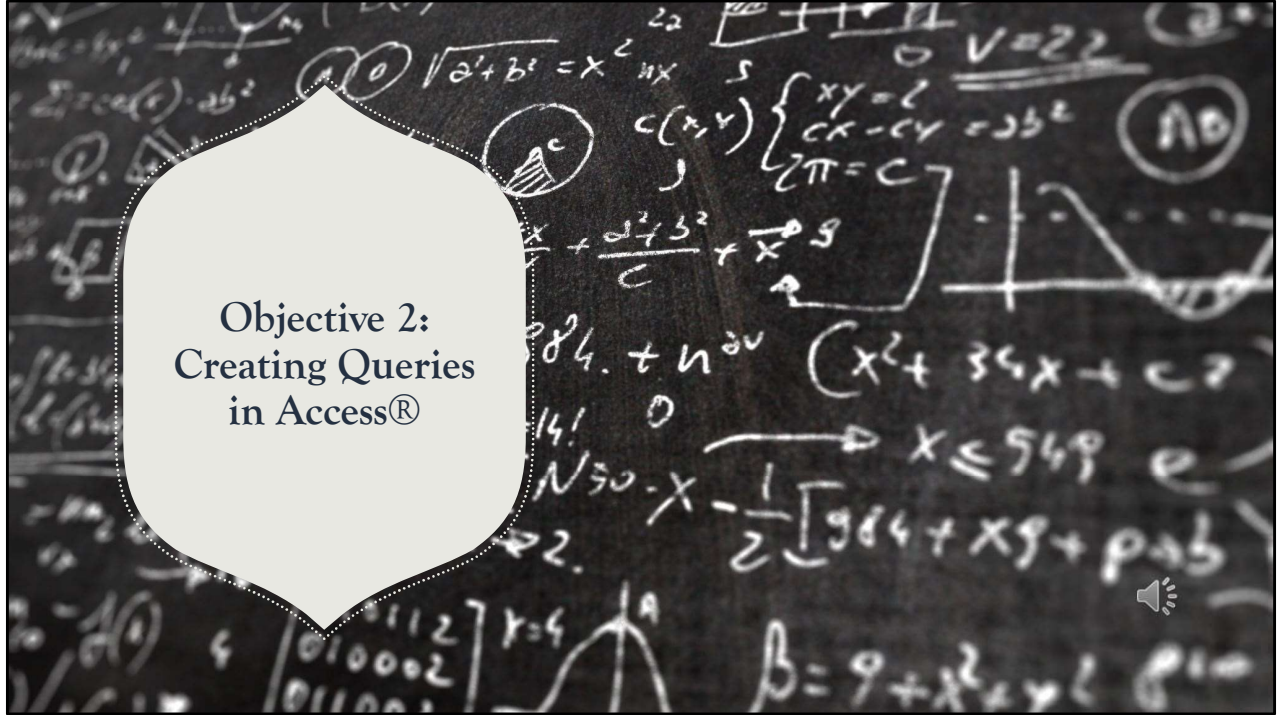
Objective 2: Construct essential queries in Microsoft Access® to retrieve relevant crime, traffic, and CRIS data

What Queries Can Do

Pull specific datasets, filter by criteria, and join tables for detailed analysis.

Key Query Types in Access

Select Queries: Retrieve specific data fields.

Action Queries: Update, append, or delete data.

Parameter Queries: Dynamic filtering for targeted reports.

SELECT QUERIES

Select queries allow you to retrieve specific data fields from one or more tables based on criteria you set. This type of query is useful when you only need certain columns or records, helping you focus on relevant data without manually filtering through the entire dataset.

Key Features of Select Queries:
•**Field Selection:** You can choose only the fields you need to display, such as IncidentType, Date, or Location in an IncidentReports table.
•**Filtering Criteria:** You can add conditions (e.g., show only incidents from "2024") to narrow down results.
•**Sorting and Grouping:** Organize data by sorting fields or grouping similar data for easier analysis.

Example Use Case:
If you need to pull only "Theft" incidents that occurred in a specific neighborhood, a select query can be set to retrieve only those records, showing only relevant fields like Date, Location, and OfficerID.

ACTION QUERIES
Action queries are used to modify the data in your tables by updating, appending, or deleting records. These queries allow you to make bulk changes to your data efficiently, without manually updating each record.

Types of Action Queries:
1.Update Query:
1. **Purpose**: Modify existing records in a table based on a set of conditions.
2. **Example**: Updating the status of all "Pending" cases to "Closed" where the closure date is today.
3. **Syntax Example**:sql
4. Copy code
5. UPDATE Cases SET Status = "Closed" WHERE Status = "Pending" AND ClosureDate = Date();

2.Append Query:
1. **Purpose**: Add new records to a table from another table or query.
2. **Example**: Appending new customer data from a temporary staging table to the main customer database.
3. **Syntax Example**:sql
4. Copy code
5. INSERT INTO Customers (CustomerID, Name, Email) SELECT CustomerID, Name, Email FROM TempCustomers;

3.Delete Query:
1. **Purpose**: Remove records from a table based on specific criteria.
2. **Example**: Deleting all records where the "Status" field is marked as "Archived."
3. **Syntax Example**:sql
4. Copy code
5. DELETE FROM Cases WHERE Status = "Archived";

Summary:
Action queries are powerful tools for bulk data manipulation. They streamline data management tasks such as updating records, appending new data, and deleting unnecessary records, making them essential for maintaining the accuracy and relevance of your database.

PARAMETER QUERIES
Parameter query allows you to create a query that prompts you to enter criteria each time you run it. This is especially useful for creating dynamic, targeted

reports where you need to filter data based on different criteria at different times without having to edit the query design repeatedly. (EXAMPLE: Between [Enter Start Date:] And [Enter End Date:])

Scenario:
Suppose you have a table called IncidentReports that includes fields for IncidentType, Date, Location, and OfficerID. You want to create a report that allows you to filter incident records by a specific date range and by incident type (e.g., "Theft" or "Assault").

Steps to Create a Parameter Query:
1.Open a Query in Design View:
1. Go to **Create > Query Design**.
2. Add the IncidentReports table to the query.

2.Add Fields:
1. Drag the fields IncidentType, Date, Location, and OfficerID from the table to the query grid.

3.Set Up Parameter Prompts:
1. In the **Criteria** row under the IncidentType field, enter the following:csharp
2. Copy code
3. [Enter Incident Type:]
4. In the **Criteria** row under the Date field, enter:mathematica
5. Copy code
6. Between [Enter Start Date:] And [Enter End Date:]

4.Run the Query:
1. Click **Run**. When prompted, enter the specific incident type, start date, and end date.

5.View Results:
1. Access will display the records that match the criteria you entered, providing a dynamic filter each time you run the query.

Example Prompt:
When you run the query, you'll see prompts like:
•**Enter Incident Type:** (You might type "Theft")
•**Enter Start Date:** (For example, "2024-01-01")
•**Enter End Date:** (For example, "2024-12-31")
Benefits:
•**Flexibility:** You can use different values each time you run the query.
•**Efficiency:** Avoids the need to create multiple queries for each filter combination.
Using parameter queries in this way allows you to generate highly targeted

reports based on user input, making it a powerful tool for crime analysis and other data-driven decision-making in Microsoft Access.

Building a Select Query Step-by-Step

1. Access the Query Design view.

2. Add tables (e.g., crime, traffic, CRIS).

3. Define fields and set criteria.

4. Run and review results.
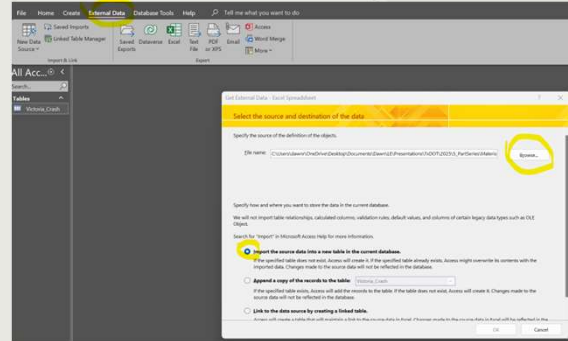
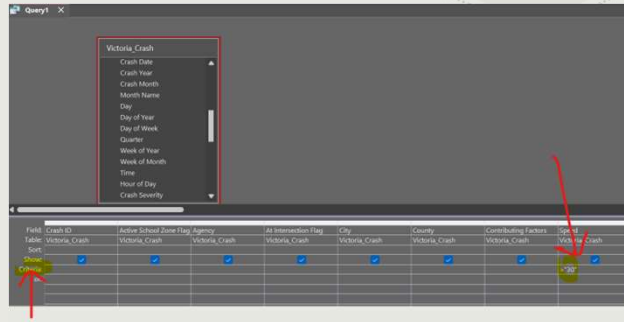GO TO YOUR VIDEO LIBRARY: "CREATING SIMPLE SELECT QUERIES"

Filtering Queries by Criteria

Examples: Date range, crime type, location, officer ID.

GO TO YOUR VIDEO LIBRARY: "FILTERING QUERIES"

Combining Data from Multiple Tables

Joins and Relationships:
How to pull data from multiple sources.
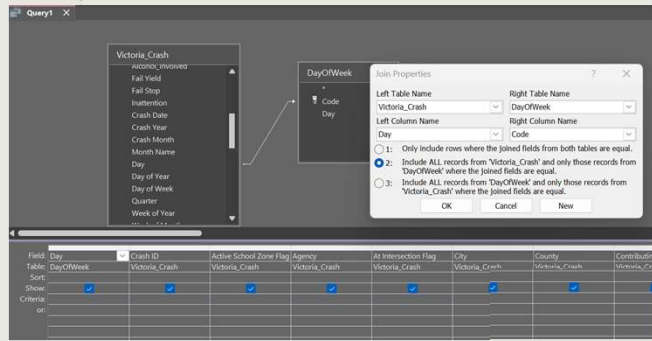
GO TO YOUR VIDEO LIBRARY: "JOINING TABLES"
GO TO YOUR VIDEO LIBRARY: "BUILDING COMPLEX QUERIES"

Check-In Question #2

What does ODBC enable in terms of database access?
a. Manual data input only
b. Static uploads of Excel sheets
c. Real-time access to live databases
d. Visualization of GIS data

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Objective 3: Create reports that present findings clearly and automate tasks to improve workflow efficiency.

Introduction to Access Reports

Purpose of reports: Visualizing and summarizing findings.

Example: Monthly crime summaries, traffic incident overviews.

Let's now take a look at Access Reports, which are essential for transforming raw data into clear, visual summaries that support data-driven decisions.

Reports help us visualize and summarize our findings in an accessible way, which is especially useful for sharing insights with decision-makers. For instance, we can create monthly crime summary reports to show incident patterns or generate traffic incident overviews that highlight peak times and locations.

These reports aren't just data—they're tools for communicating insights and making our analyses actionable. As we go through this section, we'll explore how to build and customize reports in Access to make data more impactful for everyone who relies on it.

Designing Reports

- **Essentials**
- **Step-By-Step Process**
- **Formatting**
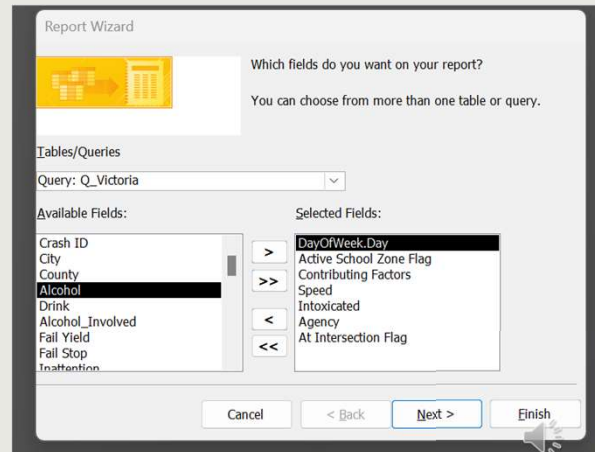
GO TO YOUR VIDEO LIBRARY: "REPORT WIZARD"
GO TO YOUR VIDEO LIBRARY: "EDITING REPORTS"

REPORT ESSENTIALS
- **Headers and Footers**: Organize report sections.
- **Grouping and Sorting**: Structuring data by categories (e.g., type of crime).

STEP-BY-STEP TO CREATE A REPORT
1. Choose a query as the report source.
2. Select fields to display.
3. Customize layout and format.
4. Generate and save the report.

FORMATTING
- **Tips**: Font choices, colors, alignment, and spacing. Naming conventions.

DayOfWeek.Day	Active School Zo	Contributing Fac	Speed	Intoxicated	Agency	At Interse
	No	Unsafe Speed	8	0	Victoria Police D	False
	No	Unsafe Speed;U	8	14	Victoria Police D	False
	No	Unsafe Speed	8	0	Victoria Police D	False
	No	Unsafe Speed	8	0	Victoria Police D	False
Monday	No	Unsafe Speed	8	0	Victoria Police D	False
	No	Failed To Yield Ri	42	0	Victoria Police D	True
	No	Backed Without	42	49	Victoria Police D	False
	No	Unsafe Speed	8	0	Victoria Police D	False
Monday	No	Unsafe Speed	8	0	Victoria Police D	False
	No	Disregard Stop S	75	0	Victoria Police D	True
	No	Disregard Stop S	49	0	Victoria Police D	True
	No	Unsafe Speed	8	0	Victoria Police D	False

This slide presents an example of **crash data** from **Victoria, Texas**, with a specific focus on **speed-related incidents**. This is the beginning of a **Microsoft Access report** that analyzes key factors influencing traffic crashes. The **design view** in Access allows users to make adjustments and fine-tune the layout and content of the report. By customizing fields, filters, and calculations, crime analysts can create detailed, actionable reports tailored to specific needs.

In **Design View**, users can:
- **Modify field selections** to include additional variables like road conditions, time of day, and weather.
- **Set criteria** to filter data for specific types of crashes, such as those involving speeding.
- **Format the report layout**, adjusting how the data is presented, whether in tables, graphs, or charts.

Benefits of Automated Reports for Crime Analysts:
Automated reports bring significant advantages to crime analysts, enhancing both efficiency and accuracy. Here are some key benefits:
1. **Time Savings**: Automated reports eliminate the need for manual data

entry and repetitive tasks, allowing analysts to focus on higher-level analysis and decision-making.

2. **Consistency and Accuracy**: Automated systems ensure that reports are generated based on consistent, up-to-date data, reducing the risk of human error and improving the reliability of the findings.

   3.Customization and Flexibility: With tools like **Microsoft Access**, analysts can tailor reports to meet specific needs, whether tracking trends in speed-related crashes or identifying patterns in crime hotspots. The ability to adjust data filters and criteria ensures reports stay relevant over time.

   4.Real-Time Insights: Automated reporting systems can pull real-time data, providing decision-makers with up-to-date information for timely responses to emerging trends.

   5.Enhanced Collaboration: Automated reports can be shared easily with other departments, community stakeholders, or policymakers, ensuring all parties have access to the same reliable information.

In summary, leveraging automated reports in Microsoft Access allows crime analysts to effectively monitor trends, identify patterns, and deliver actionable insights that inform strategic decision-making. By utilizing design features to customize these reports, analysts can ensure they provide relevant and precise data for their agencies.

Check-In Question #3

Which of the following is NOT a benefit of automated reports for crime analysts?

a) Time savings through eliminating repetitive tasks

b) Ensuring consistency and accuracy in data analysis

c) Manually customizing reports for every request

d) Providing real-time insights for decision-making

Check-In Question #3

Which of the following is NOT a benefit of automated reports for crime analysts?

a) Time savings through eliminating repetitive tasks

b) Ensuring consistency and accuracy in data analysis

c) Manually customizing reports for every request

d) Providing real-time insights for decision-making

Recap of Key Takeaways

- Getting data into Access.
- Queries are essential for pulling and filtering data.
- Reports communicate findings effectively.
- Automating reporting saves time and enhances accuracy.

Let's take a moment to recap today's main points and the ways they can make a real impact in your daily work.

Starting with *getting data into Microsoft Access,* we touched on various ways to bring data in such as static file uploads, ODBC, data warehouses, and manual entry. Getting access to your data is priority!

Moving on to *queries*—these are essential for pulling and refining data specific to your needs. By using targeted queries, you're able to filter out irrelevant information and focus only on the critical data points, whether that's crime trends, traffic incidents, or any other set of data you need to analyze.

Next, we discussed *reports*—we've seen how Access reports can transform data into meaningful visuals and summaries, making it much easier to communicate findings to your team, leadership, or stakeholders. Monthly crime summaries and traffic overviews, for example, can highlight patterns and support decision-making without getting lost in numbers.

We also highlighted *automation* - Automated reports were developed to save

time and efficiently share information with various audiences and stakeholders.

Finally, together, these tools make your workflows more streamlined, your reports clearer, and your time better spent. Thanks for being part of today's session, and I hope these insights help you implement even more effective data practices in your work.

Next Steps: Part 3: Master Tables and Data Quality Tips

In **Part 3**, we'll dive into creating master tables to consolidate and organize your data efficiently. You'll also learn essential data cleaning techniques to ensure high-quality datasets that can be trusted for accurate analysis. This session will equip you with best practices for data quality control, including validation and error-checking processes, ensuring your data remains consistent and reliable. Mastering these skills will enhance your ability to manage large datasets and maintain their accuracy, providing a solid foundation for effective analysis.

IADLEST is proud to support law enforcement agencies with a variety of resources designed to promote the implementation of data-driven operational policing. In addition to this training series, IADLEST offers in-person and virtual workshops, literature, webinars, and other valuable resources aimed at enhancing the effectiveness of law enforcement through data-driven strategies. We encourage you to explore these opportunities to continue your professional development and further strengthen your agency's ability to make informed, impactful decisions based on reliable data.

Thank you for your participation in this session, and we look forward to seeing you in **Part 3**!