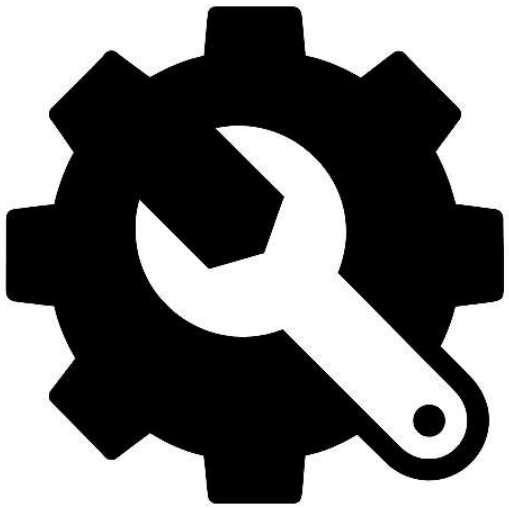
TECHNICAL MANUAL



CUE TIME SYSTEMS

Table Rental System

Version 2.0

Section 1: System Overview

1.1 System Name

CueTime Systems Application

1.2 System Purpose

CueTime Systems is a dual-interface software application designed for use in billiard halls. It supports both staff-facing functions (bartender-side table rentals and customer management) and managerial features (reporting, user creation, waitlist management, and pricing administration).

The system provides a simple, fast way to manage hourly rentals, track table usage, and view business performance — eliminating the need for paper logs or manual calculations.

1.3 System Scope

- Customer check-in and player tracking
- Table rental timer with pricing calculations
- Waitlist management
- SMS customer notifications
- Admin portal for pricing, users, and reporting
- Dual-access front-end: bartender and manager interfaces
- Azure-hosted SQL Server backend with cloud backups

1.4 Key Features

- Table availability dashboard
- Real-time rental timer and automated pricing
- Group and individual rate structures
- Data synchronization across interfaces
- Reporting dashboard with exportable metrics
- Configurable admin controls and user permissions

1.5 Deployment Status

This is the final production version (v2.0) of the CueTime system.

- Installed locally on manager and bartender workstations
- Connected to a live Azure SQL Server database
- All functionality and documentation are complete and tested

1.6 Version History

Version	Date	Notes
v1.0	03/18/2025	Initial development version
v1.1	04/12/2025	Mid-stage beta release
v2.0	05/03/2025	Final production-ready version

Section 2: System Architecture & Requirements

2.1 System Components and Architecture

Overview: CueTime Systems is a locally hosted dual-interface application connected to a cloud-based Azure SQL Server database. The bartender and manager interfaces are installed on separate Windows-based workstations and communicate with a shared backend.

Components:

- **Frontend:**
  - PHP-based web applications (Bartender and Manager apps)
  - Hosted via local XAMPP server
- **Backend:**
  - Microsoft Azure SQL Server
  - External data access via SQLSRV driver and connection string
- **Administration Tools:**
  - SQL Server Management Studio (SSMS)
  - SQL Backup Master for backups

2.2 Hardware Requirements

Component	Requirement
Operating System	Windows 10 or higher
RAM	8 GB minimum
Storage	250 GB+ (with OneDrive sync optional)
Network	Internet access for Azure + backups
Backup Location	OneDrive (configured per machine)

2.3 Software Requirements

Software	Version / Notes
XAMPP	v3.3.0 — includes Apache & PHP
PHP Extensions	sqlsrv, pdo_sqlsrv must be enabled in php.ini
SQL Server Management Studio	SSMS 18+ for Azure DB management
SQL Backup Master	Free or paid version used for automated cloud backups
BitLocker (Optional)	Enables full disk encryption on Windows workstations

2.4 Azure SQL Server Configuration

ECU Microsoft Azure SQL Server

- Link: https://portal.azure.com/?feature.msaljs=true#@studentsecuedu66932.onmicrosoft.com/resource/subscriptions/ca98c334-2d79-47b5-b6c8-48cfb871bb45/resourceGroups/bennys/providers/Microsoft.Sql/servers/mis4173/databases/bennys/queryEditor
- PirateID Access with VPN to connect to Azure DB directly (**Figure 1**)

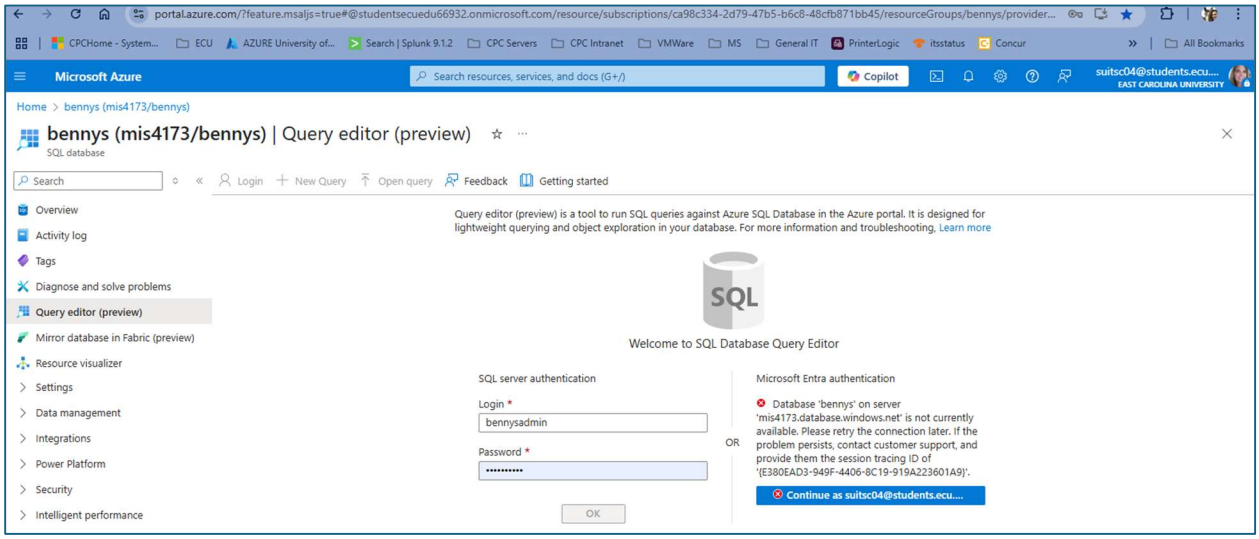


Figure 1: Bennys database

Install XAMPP and Connect to Reporting Web Interface

Cue Time Systems - Local Setup Guide (XAMPP + Azure SQL Connection)

For Examples and demo purposes we are connected to an Azure Database in the ECU Microsoft Coud

This section of the document provides step-by-step instructions to set up the Cue Time Systems Reporting (web) project using XAMPP and connect it to the Azure-hosted "bennys" database.

- **Install XAMPP** Version 3.3.0
  - Go to https://www.apachefriends.org/index.html (Version 3.3.0 to match the functions for Azure DB)
  - Download version 3.3.0 (Azure DB and PHP) of **XAMPP for Windows**.
  - Run the installer and install XAMPP in the default directory: C:\xampp
  - After installation, launch the **XAMPP Control Panel**.
  - Start the following services:
    - **Apache** (required)

- **Required PHP Add-ins / Extensions**

  To connect to Azure SQL Server from PHP, ensure these extensions are enabled:

  - Open C:\xampp\php\php.ini
  - Search for and **uncomment** (remove ' **;** ' from) the following lines:
    3. extension=pdo_sqlsrv and extension=sqlsrv
  - Save the file and restart **Apache** from the XAMPP control panel.

  If these extensions are not available:

  - Download the SQLSRV and PDO_SQLSRV extensions for your PHP version from Microsoft's GitHub: https://github.com/microsoft/msphpsql/releases
  - Choose the **ts** (Thread Safe) versions for your installed PHP version (e.g., php_pdo_sqlsrv_80_ts.dll for PHP 8.0)
  - Copy the .dll files into C:\xampp\php\ext\
  - Then edit php.ini to enable them as shown above. (repeat step 2 above)

- **Stop and Start XAMPP Apache** (**Figure 2**)

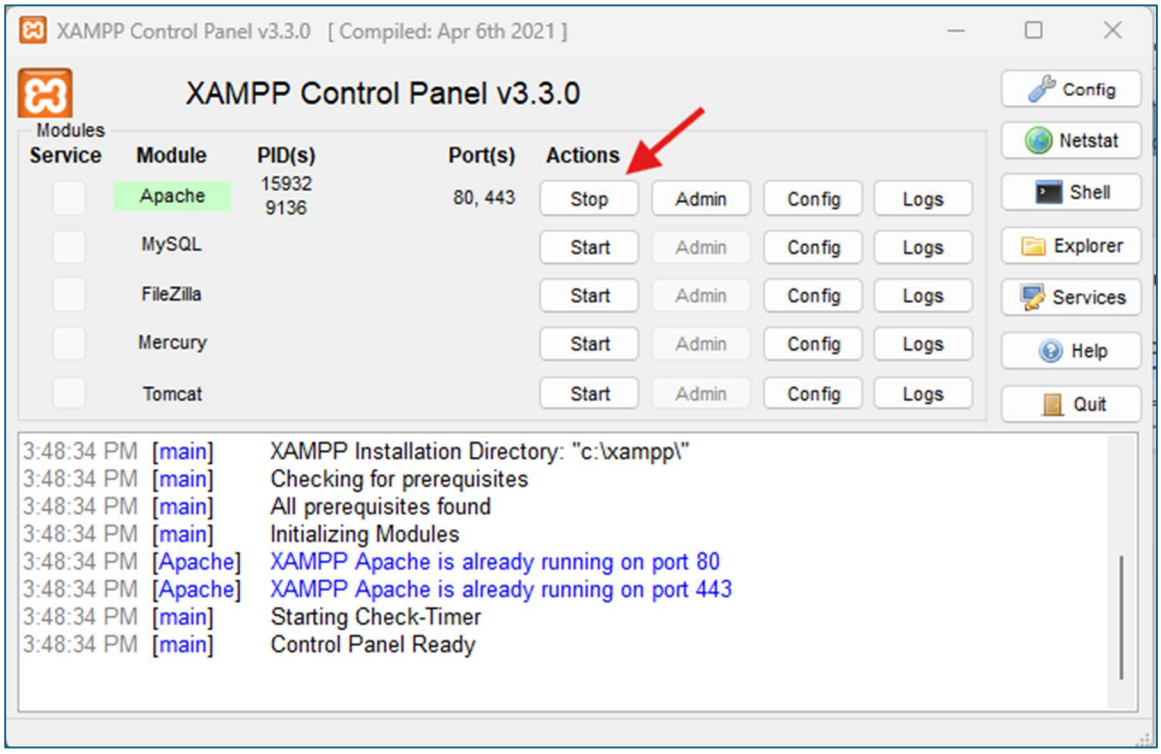


Figure 2: XAMPP Dashboard

2.5 File Structure and Local Setup

- **Place Project Files**
  - Copy the entire “Bennys_clean” (this is the PHP code for the reporting and customer database project) folder into C:\xampp\htdocs\
  - Final path should be: **C:\xampp\htdocs\Bennys_clean** (**Figure 3**)

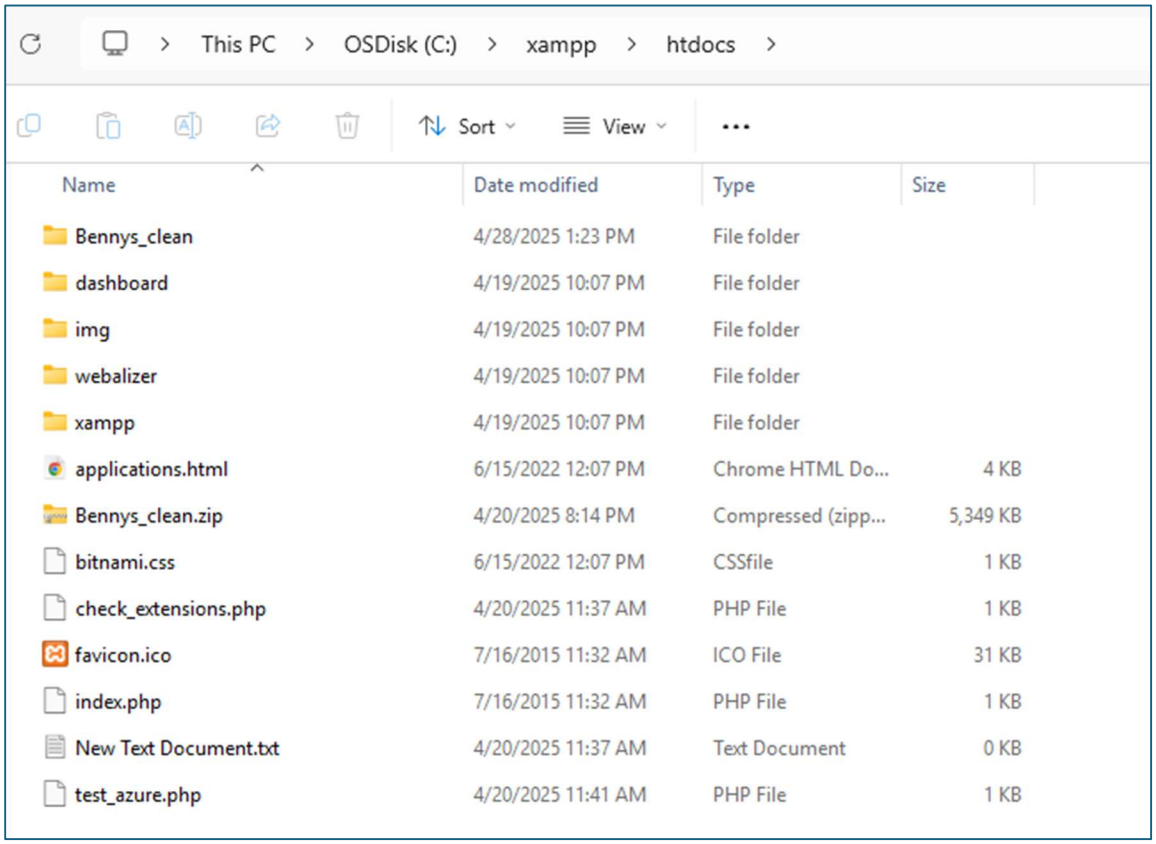


Figure 3: File Explorer

- **Access the Project in a Browser**

  Once Apache is running and project files are in place:
  - Open your web browser
  - Navigate to: http://localhost/Bennys_clean/index.php (**Figure 4**)

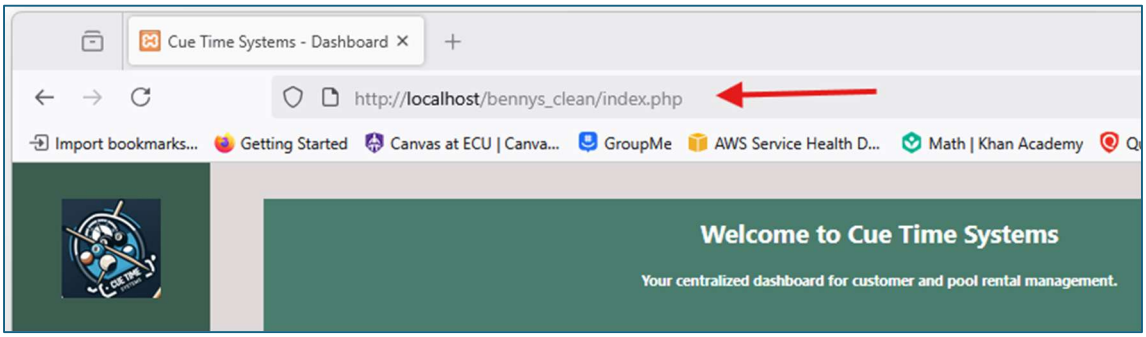


Figure 4: Navigate to Application URL

- CueTime System dashboard will load (**Figure 5**)

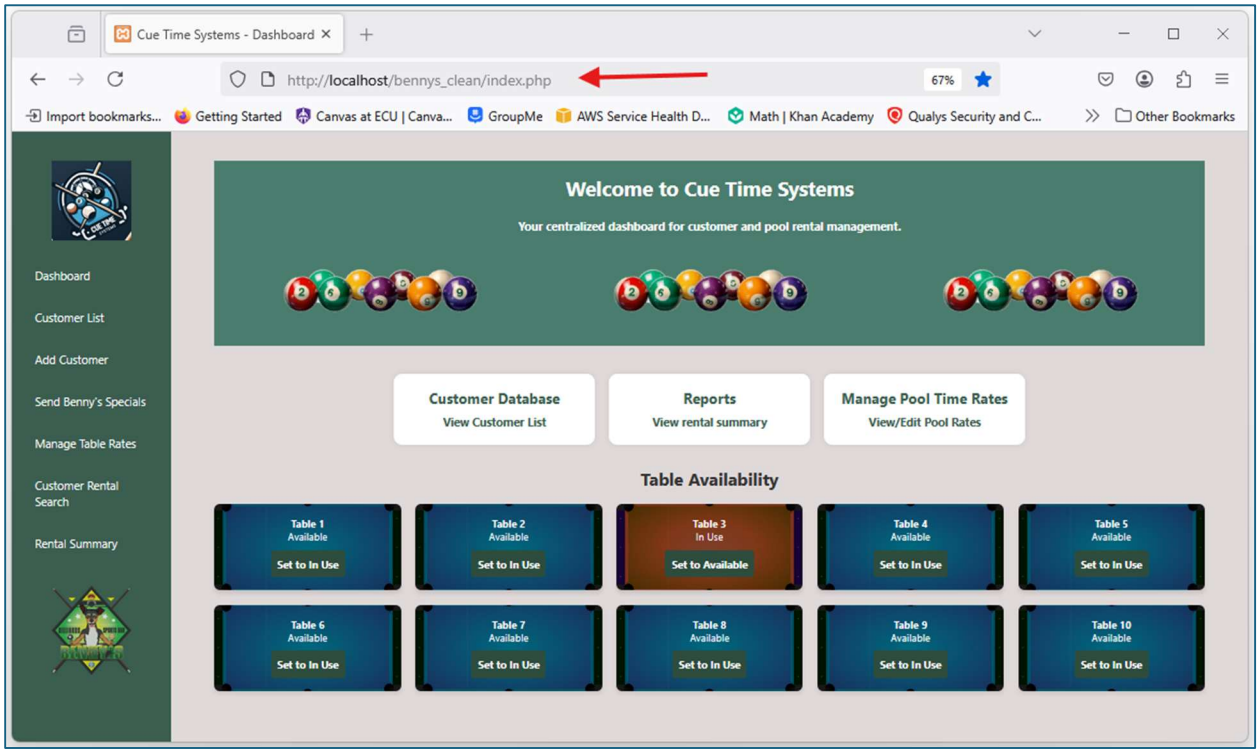


Figure 5: Home Page

Connection Error: If the connection fails, the Azure database may be waking from idle. Wait a few seconds and refresh the browser.

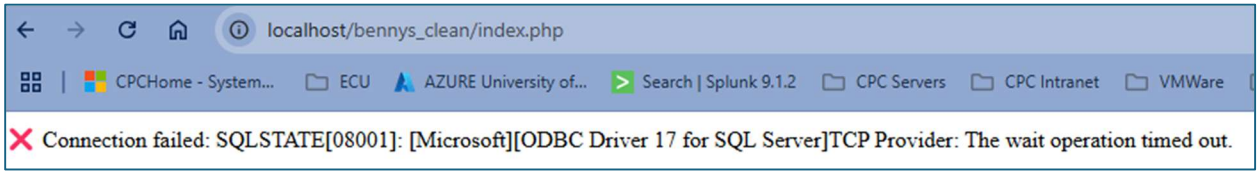


Figure 6: Connection Error

- If you get error and page does not load (**Figure 6**)
  - Refresh the link about 3 times
  - The page will load when the database connection connects.....the Database takes a second to respond, when not in use.

2.6 Backup and Recovery Practices

Backing Up the Database to OneDrive

Your SQL database contains all customer, rental, and waitlist information — making it the heart of the CueTime system. Regularly backing up this data to OneDrive ensures that in the event of system failure, the business can quickly recover with minimal disruption.

Setting Up OneDrive for Business

OneDrive for Business provides secure, cloud-based storage that automatically backs up important files and folders. By syncing files between your PC and the cloud, it protects against data loss due to hardware failure, accidental deletion, or theft.

- **Key Features:**
    - **File Storage and Sharing:** Store files securely in the cloud and share them with colleagues or external partners.
    - **Synchronization:** Automatically synchronize files between your PC and the cloud, ensuring you always have access to the latest versions.
    - **Access Anywhere:** Access your files from any device with an internet connection, including PCs, tablets, and smartphones.
    - **Collaboration:** Collaborate on documents in real-time with features like co-authoring and version history.
    - **Security:** Protect your data with advanced security features, including encryption and compliance with industry standards.
- **Usage:**
    - **Backing Up Data:** Use OneDrive for Business to back up important files and ensure they are safe in case of hardware failure or loss.
    - **Hosting Applications:** Host applications and their data in the cloud, providing a reliable and scalable environment.

Steps to Back Up SQL Database to OneDrive:

1. **Set Up OneDrive Account:**
    - If you do not already have a OneDrive account, create one by navigating to the Microsoft OneDrive homepage https://onedrive.com and signing in with your Microsoft account credentials. (**Figure 7**)

Figure 7:MS OneDrive Sign In

2. **Install SQL Backup Master:**
    - Download and install SQL Backup Master, a free tool that simplifies the process of backing up SQL databases to OneDrive. You can find it here https://www.sqlbackupmaster.com. (**Figure 8**)

Figure 8: SQL Backup Master

3. **Connect to SQL Server:**
    - Open SQL Backup Master.
    - Navigate to the Backup and Restore window and select the 'New Backup' button. (**Figure 9**)

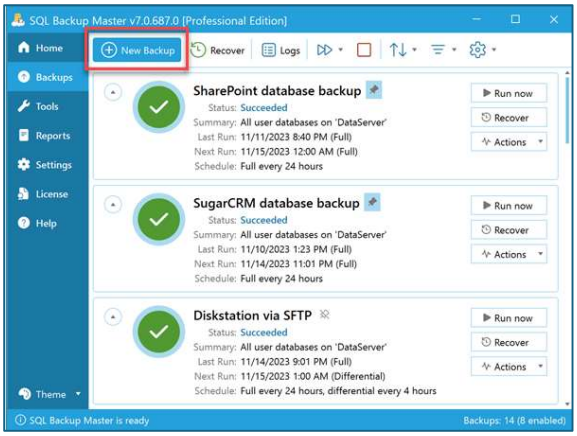


Figure 9: New Backup

- In the Database Backup Editor window, click the 'Choose SQL Server' button. (**Figure 10**)

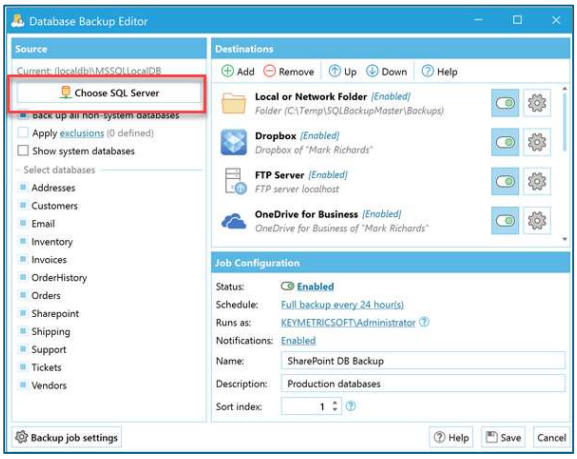


Figure10: Choose SQL Server

- Enter the name of the SQL Server instance you are connecting to (e.g., (local)\SQLExpress for a local SQL Express instance).
- Test the SQL connection to ensure it is successful, then click 'OK'.

4. **Select Databases to Back Up:**
    - In the Database Backup Editor window, select the databases you want to back up.
    - You can enable the 'Back up all non-system databases' option to automatically back up all new databases created on the targeted SQL Server in the future.
5. **Add OneDrive as Backup Destination:**
    - Click the 'Add' button under the Destinations window header.
    - Double-click the selection box labeled 'OneDrive'.

- In the OneDrive Destination Settings window, select 'Authorize Now' and input your Microsoft login information.
- Confirm SQL Backup Master's access to your OneDrive account.
- Copy the unique authentication code provided, then paste it into the Authorization Code window in SQL Backup Master.
- Test the connection to ensure it is successful, then click 'OK'.

6. **Run the Backup:**
    - In the main window of SQL Backup Master, select your newly created backup job.
    - Click the 'Back up now' button to begin the backup process.
    - Monitor the progress and ensure the backup completes successfully.

Additional Tips:

- **Scheduling Backups:** Use SQL Backup Master to schedule regular backups to OneDrive, ensuring your data is consistently protected.
- **Monitoring Backups:** Periodically check the backup logs to verify that backups are running smoothly and address any issues promptly.
- **Restoring Data:** In case of data loss, you can easily restore your database from the OneDrive backup using SQL Backup Master.

2.7 Security Considerations

Enabling BitLocker

Encryption is essential for protecting devices in case they are lost or stolen.

Windows Encryption:

- Use BitLocker for full disk encryption.
- **Steps to enable BitLocker:**
    1. In the Windows search bar, type **Manage BitLocker** and open. (**Figure 11**)

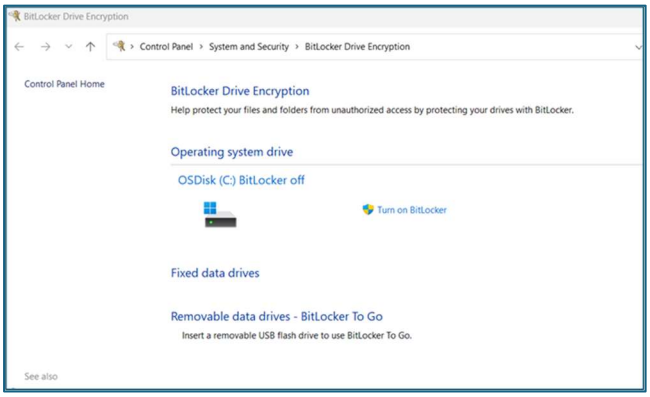


Figure 11: Manage BitLocker

    2. Turn on BitLocker for the entire disk.
    3. BitLocker Recovery Keys will be stored in your Office 365 online account found at https://account.microsoft.com/devices/recoverykey.

2.8 SQL Server Management Studio (SSMS) Usage

Accessing and Querying Data Using SSMS

SQL Server Management Studio (SSMS) allows managers or IT support to view, maintain, and troubleshoot the CueTime database. With SSMS, you can query rental data, manage customer records, and back up or restore the database if needed — all through a secure interface.

Cue Time System Application Data:

- Stored in the SQL database.

Accessing and Managing the Database:

- Use Microsoft SQL Server Management Studio.
- **Steps to connect:**

- Open Microsoft SQL Server Management Studio (**Figure 12**).
    - Found in Start-> All Programs

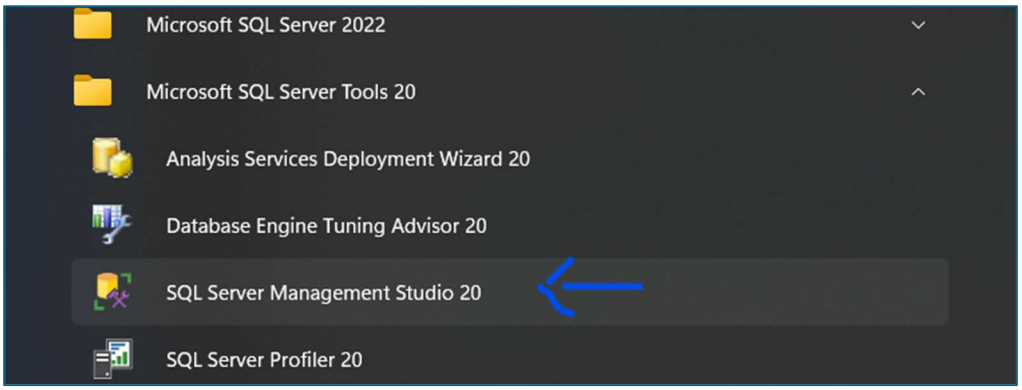


Figure 12:SQL Server Management Studio

- Sign in and connect to the database with your credentials.
- Input:
- Server Name: CueTimeSystems
- Username: (your username)
- Password: (your db password)
- Click 'Connect' (**Figure 13**)

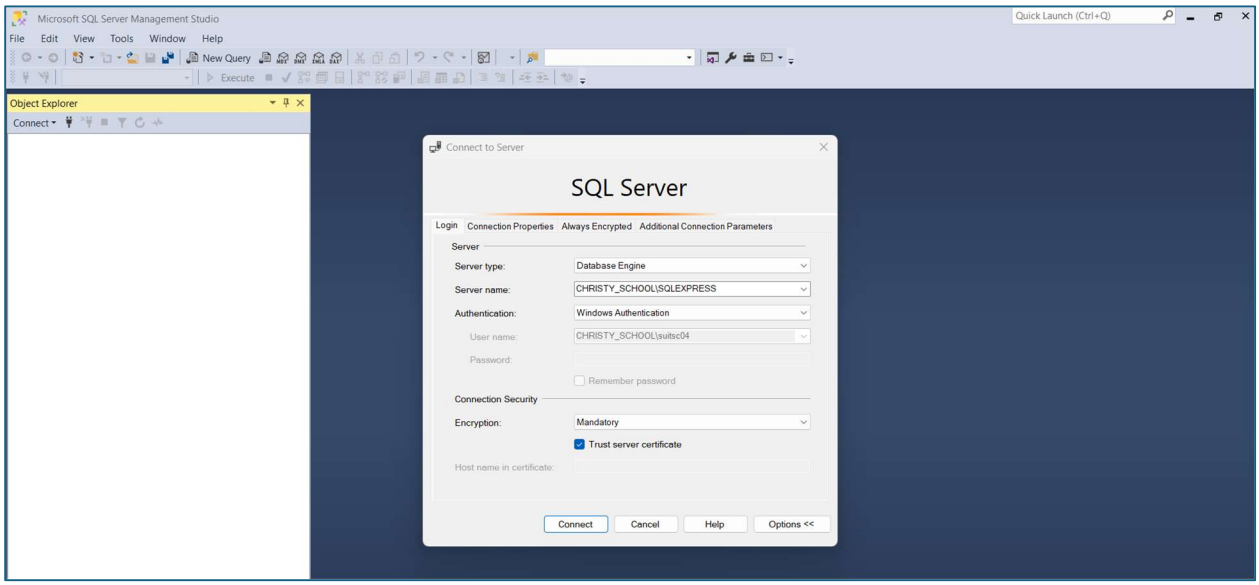


Figure13: Logging into SQL Server

Managing Database Tables:

- Open and connect to your database container: bennys.
- **Customer Database (Figure 14 and 15):**

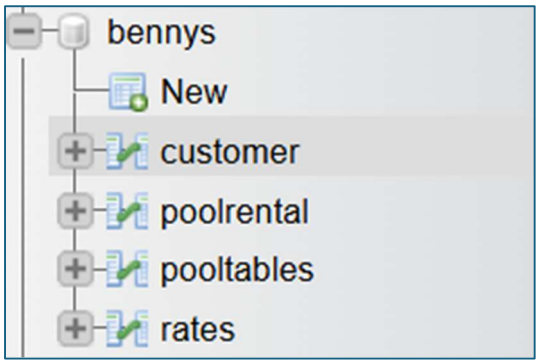


Figure14: Database Directory

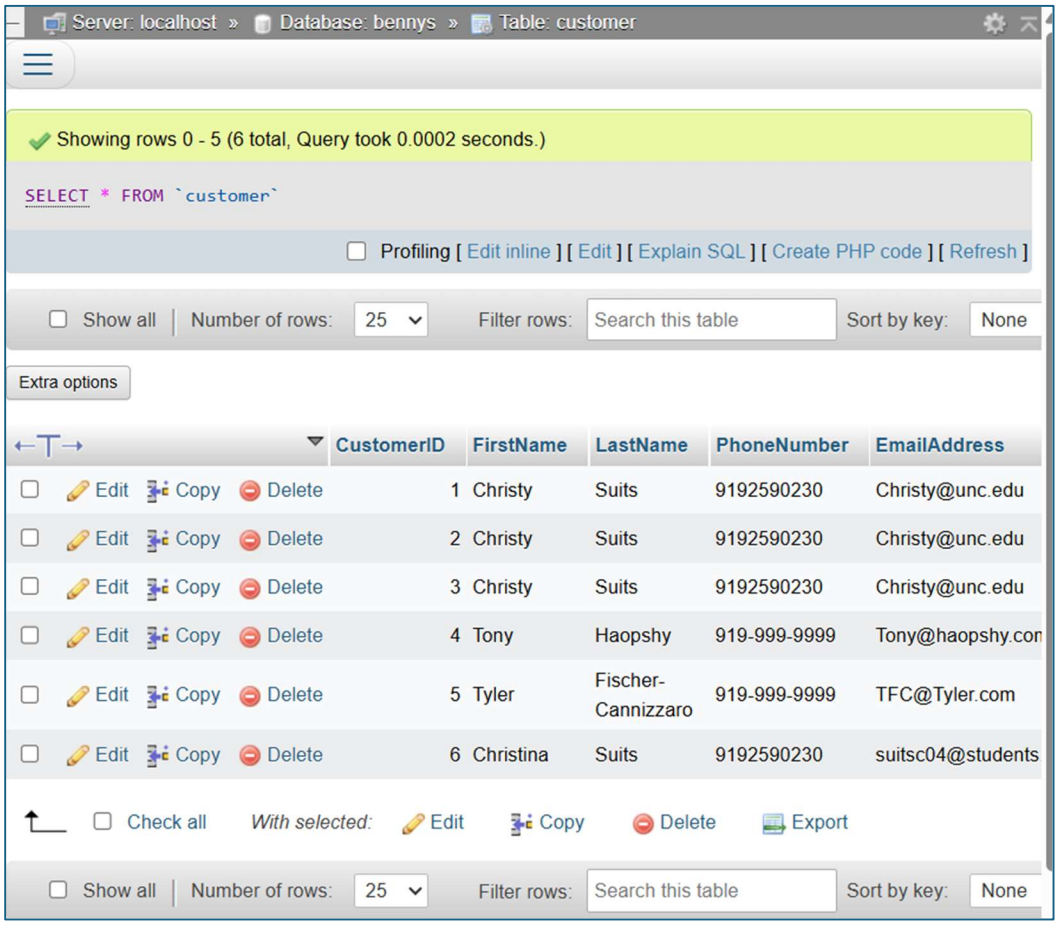


Figure 15: Customer Table

Microsoft SQL Server Management Studio (SSMS)

SQL Server Management Studio (SSMS) is an integrated environment for managing any SQL infrastructure, from SQL Server to Azure SQL Database. It provides tools to configure, monitor, and administer instances of SQL Server and databases.

Key Features:

- **Object Explorer:** View and manage all objects in one or more instances of SQL Server.
- **Template Explorer:** Build and manage files of boilerplate text to speed the development of queries and scripts.
- **Solution Explorer:** Build projects to manage administration items such as scripts and queries.
- **Visual Database Tools:** Use visual design tools to build queries, tables, and diagram databases.
- **Query and Text Editors:** Interactively build and debug queries and scripts.
- **Business Intelligence:** Manage Analysis Services, Integration Services, and Reporting Services.

Capabilities:

- **Configuration:** Configure SQL Server instances and databases.
- **Monitoring:** Monitor the performance and health of SQL Server instances.
- **Administration:** Administer SQL Server instances, including backup and restore operations.
- **Development:** Develop and deploy queries, scripts, and data-tier applications.
- **Security Management:** Manage security settings, including user roles and permissions.
- **Performance Tuning:** Optimize query performance and troubleshoot issues.
- **Data Import/Export:** Import and export data between SQL Server and other data sources.
- **Automation:** Automate routine tasks using SQL Server Agent and other tools.

Usage:

- **Connecting to SQL Server:**
    1. Open SSMS.

2. Sign in with your credentials.
3. Input server name, username, and password.
4. Click 'Connect'.

- **Managing Databases:**
  - Use Object Explorer to navigate and manage database objects.
  - Create, modify, and delete tables, views, store procedures, and other objects.
  - Execute queries and scripts using Query Editor.
- **Security Management:**
  - Manage user roles and permissions.
  - Perform security audits and generate reports.
- **Performance Monitoring:**
  - Use built-in tools to monitor server performance.
  - Analyze query execution plans and optimize performance.
- **Backup and Restore:**
  - Perform backup and restore operations to protect data.
  - Schedule automated backups using SQL Server Agent.

References

[1] SQL Server Management Studio (SSMS) | Microsoft Learn

[2] Download SQL Server Management Studio (SSMS) | Microsoft Learn

[3] SQL Server Management Studio 20 New Features and Functionality

[4] Back Up SQL Databases to OneDrive – SQL Backup Master

Section 3: System Maintenance & Support

3.1 Maintenance Responsibilities

Ongoing system maintenance responsibilities include monitoring backups, ensuring system updates are applied to the local machines, and confirming consistent database connectivity. While day-to-day usage is handled by the end users, a designated administrator should periodically check system health.

Key responsibilities:

- Verifying backup jobs run as scheduled
- Confirming stable Azure SQL connectivity
- Applying Windows, XAMPP, and PHP updates as needed
- Addressing user access or login issues in coordination with CueTime Solutions

3.2 Backup Monitoring

SQL Backup Master is configured to create scheduled backups of the Azure SQL database and store them in a OneDrive folder accessible to the system administrator. It is recommended that the administrator check the SQL Backup Master logs at least weekly to confirm successful completion.

Backup tips:

- Use daily or weekly backup frequency depending on business volume
- Ensure OneDrive sync is active and successful
- Store at least 30 days of rolling backup history

3.3 Troubleshooting Summary

This section provides a quick reference for resolving technical problems related to installation or system function. For user-facing issues (e.g., lost customer data, button not working), see the Training Manual.

Issue	Cause	Solution
Application won't open	Apache not running	Restart XAMPP and verify Apache is enabled
Database connection error	Azure SQL timeout or VPN issue	Retry after a few seconds or verify VPN/IP
Reports not displaying	Corrupted browser cache	Refresh browser, restart app
Backups not syncing	OneDrive sync paused or failed	Re-authenticate OneDrive and restart sync

3.4 Technical Support Contacts

Contact Type	Name/Email	Notes

Business Owner	Shara Adams – bennysbilliards22@gmail.com	Local operations lead
CueTime Support	support@cuetimesolutions.com	Technical questions, updates, bugs

If technical issues occur outside business hours, email support is monitored during weekday business hours.

3.5 Disaster Recovery

In the event of a local system crash, file loss, or workstation replacement:

1. Reinstall XAMPP on the new machine
2. Copy the latest version of the application to C:\xampp\htdocs\Bennys_clean
3. Restore the database from the latest .bak file using SSMS
4. Reconnect the system to Azure SQL using the saved connection string
5. Verify OneDrive is syncing the correct folders and backup tools are reinstalled

Best Practice: It is recommended that administrators test the restore process annually using a staging device.