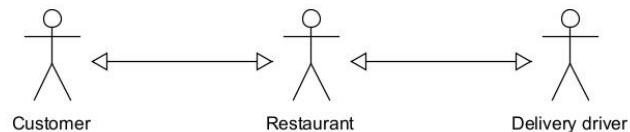


Manual

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Introduction

This system facilitates the connection between the customer to the restaurant and the restaurant to the customer. Additionally customers of whom pay for a membership subscription can create accounts and restaurants can create accounts accessed by managers to see and edit food items, as well as to check daily reports.

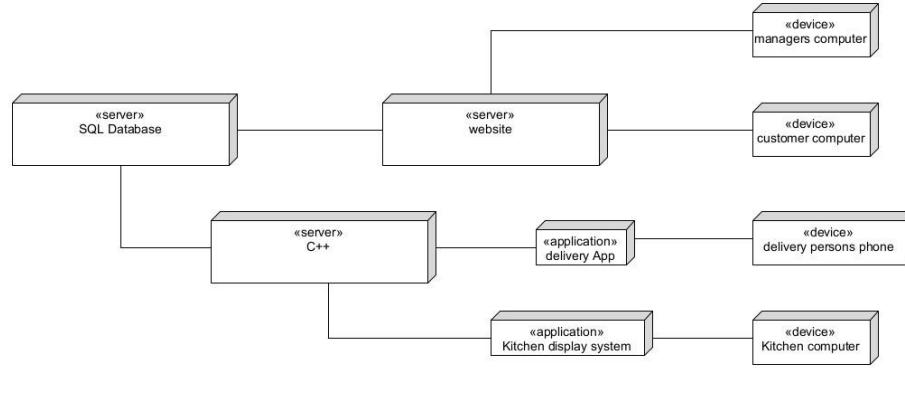


System layout

This system has 1 database, 2 servers and 3 separate applications one being a web based. The Web-based application is where customers can search for, create or edit their orders. The web-based application is also where customer and restaurant accounts reside. The other 2 applications are the delivery application where a delivery driver

with the app can get notified of new orders and can dispatch orders and fully complete orders. Next application is the kitchen display

application where restaurants receive order details of the order and where they can accept, reject and complete orders. The 2 servers are a php server for the web based application and a c++ server that connects the kitchen display application and delivery application to the database.



Search Function

To understand the search function, you must understand what the item is in the system, an item is made up of attributes consisting of: name, description, keywords, price, category, ect. The search function takes in many of these attributes as well as the first 5 words separated by spaces in the search bar for the keywords. Note that both restaurants and items have keywords that can be searched for.

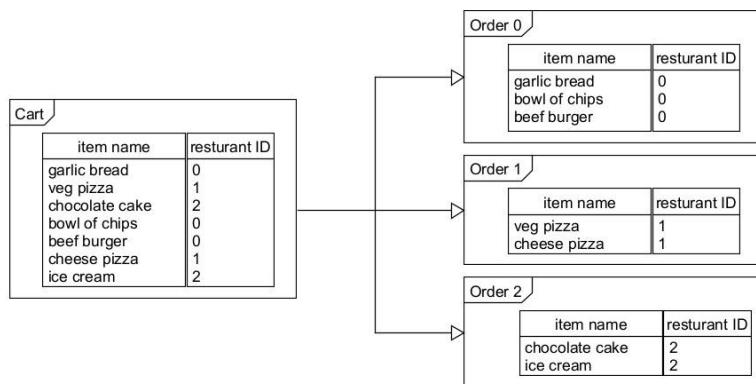
The Cart

The cart is the array of items selected dynamically (the array is passed from page to page not stored on the users computer or on the server). The cart consists of the item, the price and the quantity.

Payment

After completing an order the customer is given an option to log in with a membership subscription or pay on demand. For the pay on demand field the customer has to enter values to create a temporary customer on the database and is given additional details on the right of their screen showing them the gst, service fee and membership discount which would be 0%. The membership subscription field requires the customer to enter their email and password after which they are given their additional details on the right of their screen showing them the gst, service fee and membership discount which may be different depending on their subscription level. For both membership subscription and pay on demand customers they are given a notes field of which they can add alongside the order for the restaurant.

Order Structure



After a customer pays for an order that order is split into different order objects according to the restaurant ID of the items selected. After they are grouped together, each order object has an order Detail object which is each item in that order object. Additionally each order has a payment object denoting details that would be on the header of a receipt.

Order – Customer

After paying for their order a customer will be transitioned to the order page, where they can write a review for each item they bought, see their receipt or refund their order. When writing a review, the customer can choose a rating between 0-5 and write some text of which will be paired to the item object in the database. Refunds can only be done if the status of the food is either being processed or cooking, not when completed or dispatched. The customer can also see the arrival time of the order and the order status of which stage it's at. After an order is completed the customer, if they chose to pay on demand, will be deleted from the database.

Reviews

An item's rating is the average rating of all reviews on the object and the restaurants rating is an average rating of all ratings on their items.

Restaurant Accounts

Managers of restaurants can access the restaurant details by logging into their account. They can also edit details of the restaurant like:

- Changing operating hours
- Adding/deleting restaurant or item keywords
- See Daily report of all orders
- Change item details
- Create/delete items

Customer Accounts

Membership Customers, after logging into their account, can also:

- Edit their own details
- See their previous orders
- Cancel/renew their subscription
- Change membership status or make new payment on current

Kitchen Display Application

The Kitchen display application allows restaurants to:

- Display their orders
- Display the customer contact of that order
- Change the arrival time of the order
- Accept orders
- Reject orders
- Complete orders

Delivery Application

The delivery application allows the delivery driver to:

- Accept to deliver orders
- Display the order
- Change the arrival time of the order
- Display customer and restaurant details such as addresses
- Deliver the order; thus notifying the restaurant

Once the restaurant completes an order ready for a delivery driver to pick it up that request is sent to the server, which is then added to a queue, then sent to the delivery driver application. A delivery driver can only choose the oldest order and once chosen, the request is sent to the server which then gets updated in the queue

so that no other delivery driver can choose that order, if they put in a request. An order is only deleted from the queue once that order is completed.

Security

The system has many security features like:

- Prevention of SQL injection
- Prevention of XML hacking
- Hashing and using Salt & peppers
- Permission Handling in the database
- Use of PHP (server-side programming)

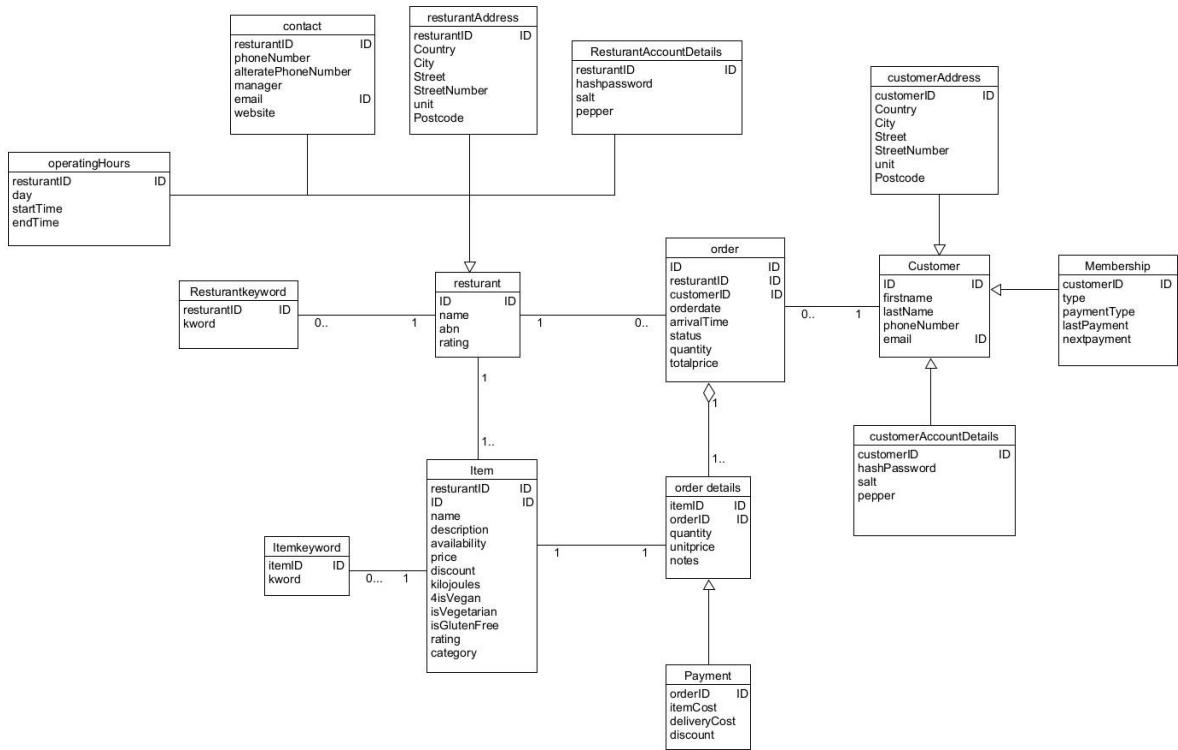
About the Server

The C++ server is programmed using the ASIO library in the boost framework to handle such things as sockets and low level connectivity and an odbc for connection with the database. ASIO stands for asynchronous input/output and odbc stands for open database connectivity.

One of the main problems with the use of ASIO for servers are: 1. You don't know when data will reach a node (server or client), 2. You may be unsure of how much data is going to be sent, and 3. Data may be read after another packet of data is sent overwriting that initial data sent. To fix this a queue was made with a specific limit of data so that when data reaches a node it will bank up behind each other and read it in order. This queue, part of the connection class, is a buffer of data that is read until NULL is present and thus, it can read most primitive data types and some simple made classes.

The odbc is a parent class of the connection class and handles connectivity with the database. One small unresolved problem with this method is that the functions on the odbc library take in wide chars and wide integers as the sql language has more characters than the standard ascii ($2^8=256$). It tends to be a little bit unstable with modern c++ as microsoft was the first to adopt extended chars before the c++ language did in the late 90s and due to this they never changed the language in the syntax since the early 2000s. This can result in some errors in the database that could not be fixed easily, most being a memory corruption error after reading in data from the database, but can mostly be ignored and won't crash the application.

Database Schema

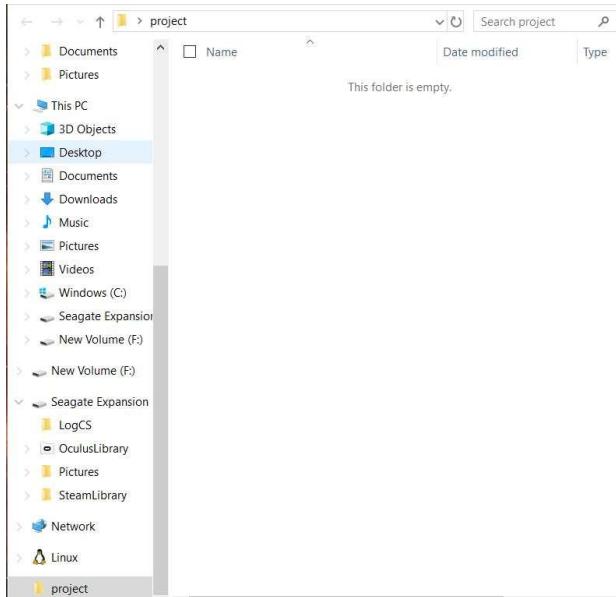


Installation

There are multiple parts to the installation process as the system uses multiple different languages, servers and applications, you will need to install:

- PHP
- TSQL server
- C++
- C++ ASIO

1. First create a folder called **project** that most of the files will reside in.



2. Next go to the github link and download the source code:

<https://github.com/UnknownClient03/314Project>

A screenshot of a GitHub repository page for '314Project'. The top navigation bar includes links for Code, Issues, Pull requests, Actions, Projects, Security, Insights, and Settings. A yellow banner at the top informs users about two-factor authentication requirements. The main content area shows the repository's structure with branches 'main', 'Branches', and 'Tags'. The 'Code' tab is selected. On the right, there is an 'About' section with a note: 'No description, website, or topics provided.' It also shows activity metrics: 31 commits, 0 stars, 1 watching, and 0 forks. The 'Releases' section lists '314 group project v1 (Latest)' from last week. The 'Languages' section shows a progress bar with a single segment. The footer of the page includes a copyright notice and links for GitHub Help, GitHub Premium, and GitHub Enterprise.

3. _____

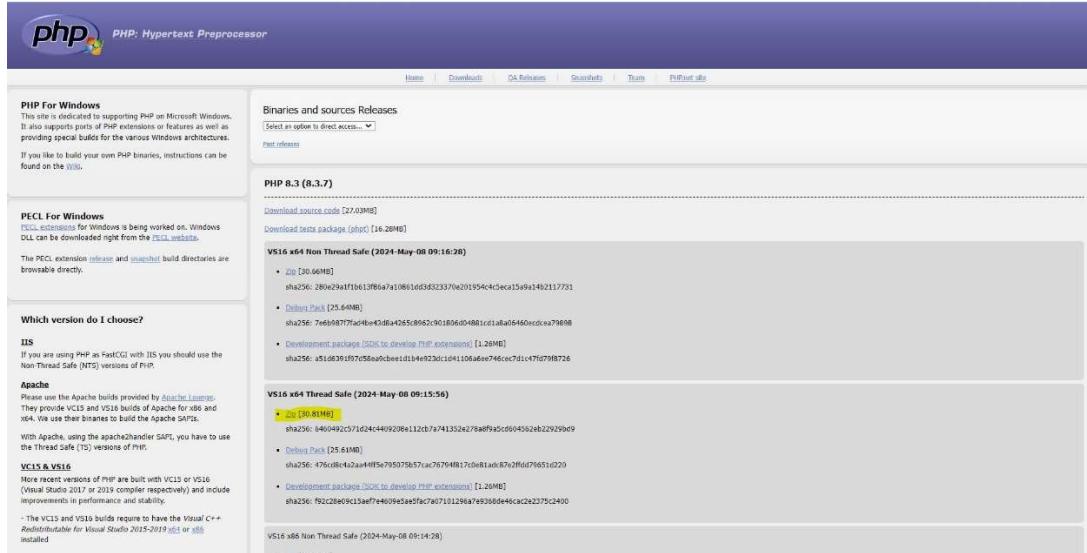
This PC > Windows (C:) > Users > unkno > Downloads > 314Project-main.zip > 314Project-main					
	Name	Type	Compressed size	Password p..	Size
	server	File folder			18/05/2024 8:57 AM
	sqlQueries	File folder			18/05/2024 8:57 AM
	website	File folder			18/05/2024 8:57 AM
	createDatabase.bat	Windows Batch File	1 KB	No	1 KB 67% 18/05/2024 8:57 AM
	dropDatabase.bat	Windows Batch File	1 KB	No	1 KB 2% 18/05/2024 8:57 AM
	log into sql server.brd	Text Document	1 KB	No	1 KB 0% 18/05/2024 8:57 AM
	set up php server.txt	Text Document	1 KB	No	1 KB 45% 18/05/2024 8:57 AM
	SQSRVRS12				
	Favorites				
	Links				
	Music				
	OneDrive				
	Pictures				
	Saved Games				
	Searches				
	source				
	Tracing				
	Videos				
	VirtualBox Vms				
	Windows				
	XboxGames				
	Seagate Expansion				
	New Volume (F:)				
	New Volume (F:)				
	Seagate Expansion				
	LogCS				
	OculusLibrary				
	Pictures				
	SteamLibrary				

4. Next extract folders contents into the project file.

project					
	Name		Date modified	Type	
	Documents		25/05/2024 5:22 PM	File folder	
	Pictures		25/05/2024 5:22 PM	File folder	
	This PC		25/05/2024 5:22 PM	File folder	
	3D Objects				
	Desktop				
	Documents				
	Downloads				
	Music				
	Pictures				
	Videos				
	Windows (C:)				
	Seagate Expansion				
	New Volume (F:)				
	New Volume (F:)				
	Seagate Expansion				
	LogCS				
	OculusLibrary				
	Pictures				
	SteamLibrary				
	Network				
	Linux				
	project				

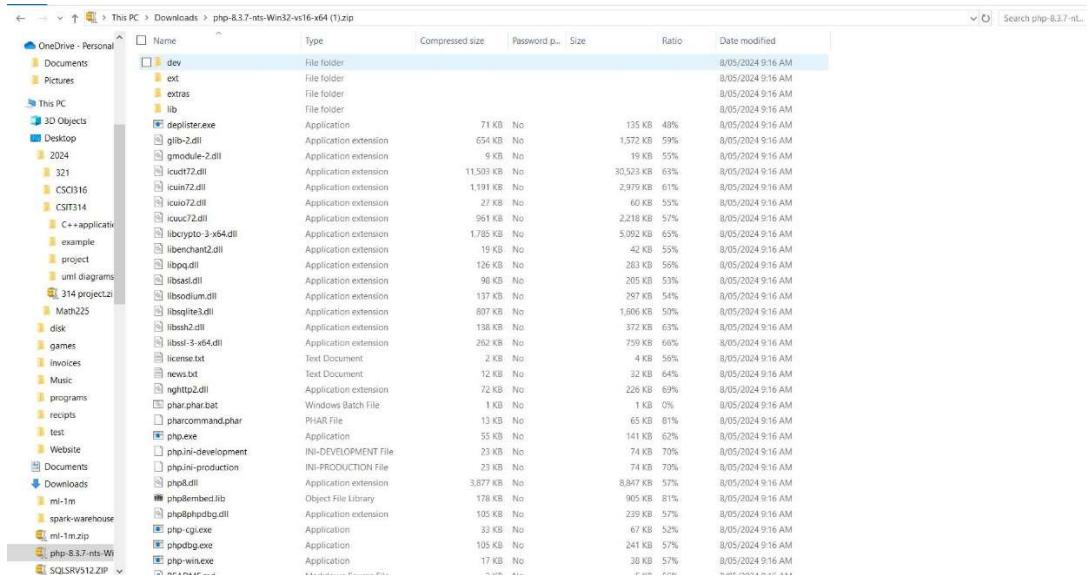
Installing PHP

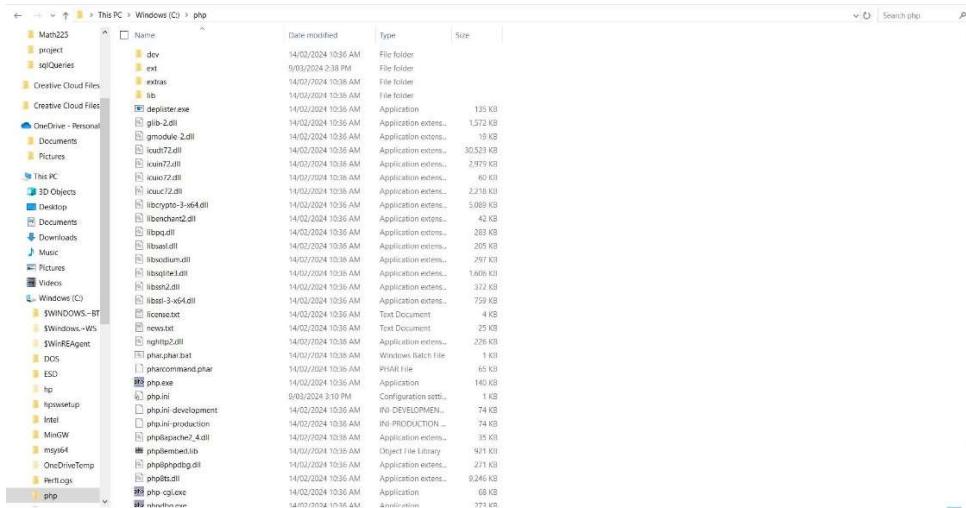
1. Download the PHP 8.3 – VS16 x64 thread safe zip file from the following link
<https://windows.php.net/download#php-8.3>



The screenshot shows the official PHP For Windows download page. At the top, there's a navigation bar with links for Home, Downloads, QA Releases, Screenshot, Team, and PHPUFFLE. Below the navigation, there's a section for "Binaries and sources Releases". A dropdown menu is open, showing "Select an option to direct access...". Below this, there's a "PHP 8.3 (8.3.7)" section with a "Download source code (272.0MB)" link. Underneath, there are two main download options: "VS16 x64 Non Thread Safe (2024-May-08 09:16:20)" and "VS16 x64 Thread Safe (2024-May-08 09:15:59)". Each section has a "Download ZIP [20.6MB]" link and a "Download Deb包 [25.6MB]" link. The "Non Thread Safe" section also includes a "Development package (SDK to develop PHP extensions) [1.20MB]" link.

2. After downloading the zip file extract **all** the contents into your main directory eg windows C: drive.





3. Then download the **sqlsrv** library (.dll file) for sql connectivity from the following link <https://learn.microsoft.com/en-us/sql/connect/php/download-drivers-php-sql-server?view=sql-server-ver16>

Version

SQL Server 2022

Filter by title

PHP

Microsoft Drivers for PHP for SQL Server

- > Getting started
- Overview
- Overview
- Download
- Installation on Linux and macOS
- Release notes
- System requirements
- Support matrix
- Loading the drivers
- Support resources
- About code samples
- > Programming guide
- Security considerations
- > Code samples
- Python
- Ruby
- Spark
- ADO

Note

Make sure you have the latest version of the ODBC driver installed to ensure optimal performance and security. For download information, see [Download ODBC Driver for SQL Server](#).

Version information

- Release number: 5.12.0
- Released: January 31, 2023

If you have feedback, the best way to contact the Microsoft Drivers for PHP for SQL Server team is by filing an issue on the GitHub repository [here](#).

Release notes

For details about what has changed in this release, see [the release notes](#).

Additional resources

Events

Take the challenge

May 22, 2 AM - Jun 22, 2 AM

Grow your AI skills with the Microsoft Learn Challenge: Build Edition — Microsoft Fabric. Register now

Documentation

Microsoft Drivers for PHP Support Matrix - PHP drivers for SQL Server

This page contains the support matrix and support lifecycle policy for the Microsoft PHP Drivers for SQL Server.

System requirements - PHP drivers for SQL Server

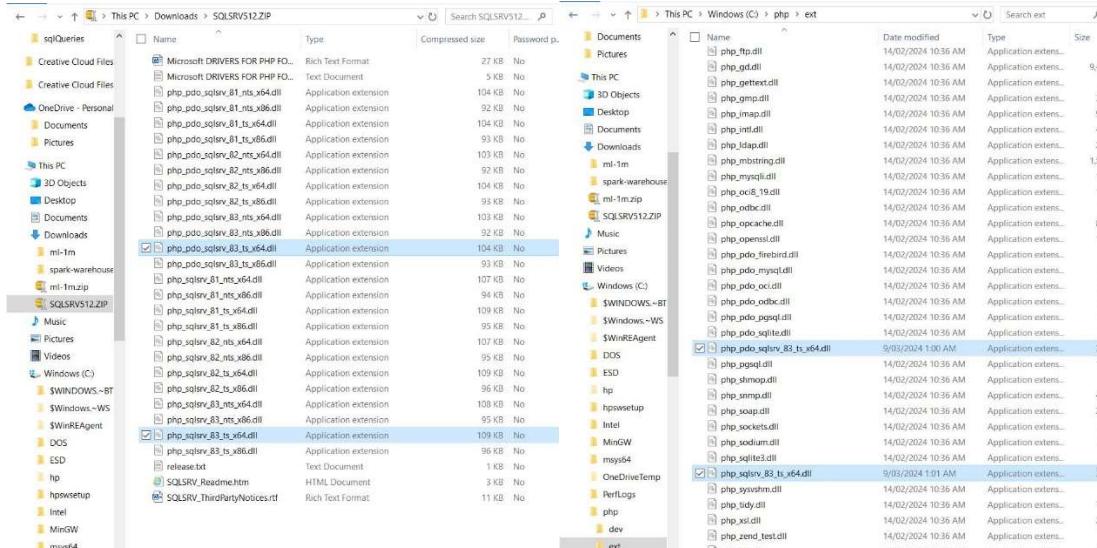
The Microsoft Drivers for PHP for SQL Server support a wide range of PHP versions, operating systems, and SQL Server versions.

Loading the Microsoft Drivers for PHP - PHP drivers for SQL Server

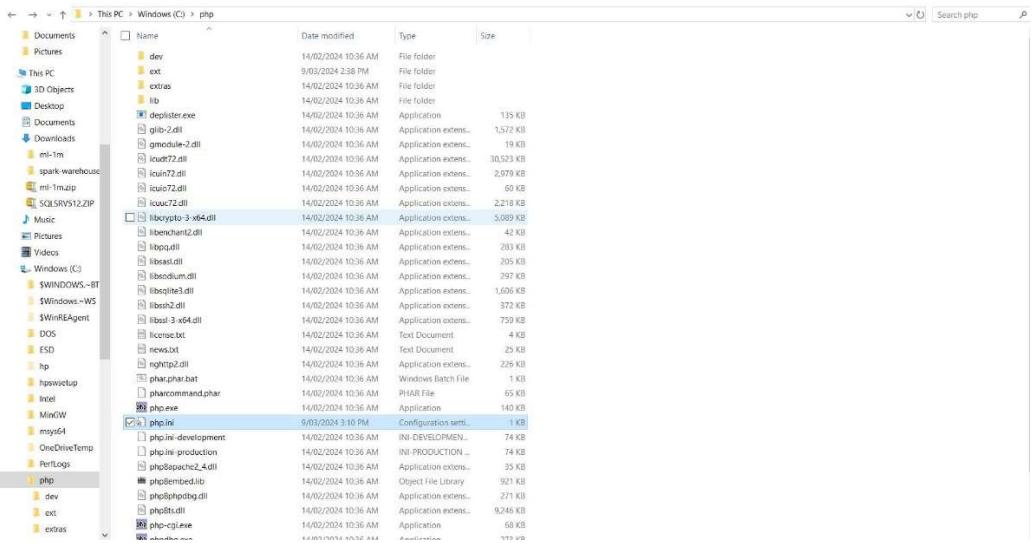
This page provides instructions for loading the Microsoft Drivers for PHP for SQL Server into the PHP process space.

Show 4 more

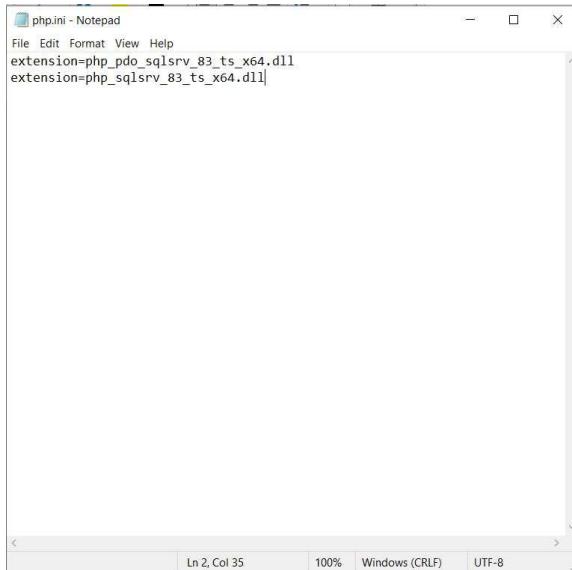
4. Open the zip file and extract the 2 files “**php_pdo_sqlsrv_83_ts_x64.dll**” and “**php_sqlserv_83_ts_x64.dll**” into the ext folder in the php direcotry.



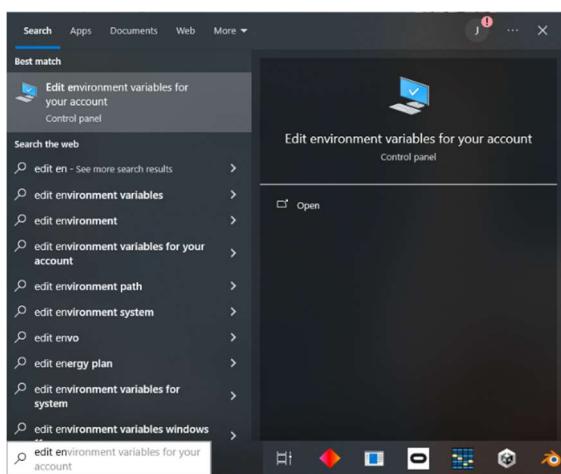
5. After that create a file in the php directory called “php.ini” **Note:** if “php.ini” already exists in the directory **don’t** delete it.

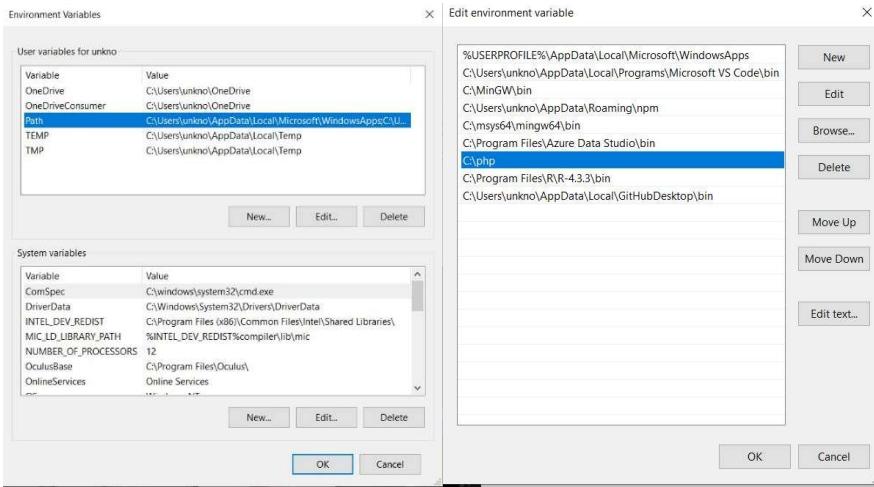


6. Next in the “php.ini” file add two new lines and write “extension=php_pdo_sqlsrv_83_ts_x64.dll” and “extension=php_sqlsrv_83_ts_x64.dll”.



7. Add a new line in environment variables path and add the php path.





8. Restart computer to update environment variables.
9. To check if php is installed properly quickly run a php server through the command prompt by writing “php -S localhost:8000 -t C:\php”.

```
C:\Users\unkno>php -S localhost:8000 -t C:\php
[Sat May 25 16:29:48 2024] PHP 8.3.3 Development Server (http://localhost:8000) started
```

10. If the command prompt **only** displays from the file above then everything is installed correctly for example if you get the image below the ini file is incorrect.

```
C:\Users\unkno>php -S localhost:8000 -t C:\Users\unkno\Desktop\2024\CSIT314\project
<br />
<b>Warning</b>: PHP Startup: Unable to load dynamic library 'php_pdo_sqlsrv_83_ts_x65.dll' (tried: C:\php\ext\php_pdo_sqlsrv_83_ts_x65.dll (The specified module could not be found), C:\php\ext\php_pdo_sqlsrv_83_ts_x65.dll (The specified module could not be found)) in <b>Unknown</b> on line <b>0</b><br />
<br />
<b>Warning</b>: PHP Startup: Unable to load dynamic library 'php_sqlsrv_83_ts_x65.dll' (tried: C:\php\ext\php_sqlsrv_83_ts_x65.dll (The specified module could not be found), C:\php\ext\php_sqlsrv_83_ts_x65.dll (The specified module could not be found)) in <b>Unknown</b> on line <b>0</b><br />
[Sat May 25 16:33:15 2024] PHP 8.3.3 Development Server (http://localhost:8000) started
```

Installing TSQL Server

1. Download tsql developer from the following link <https://www.microsoft.com/en-au/sql-server/sql-server-downloads>

Or, download a free specialized edition



Developer

SQL Server 2022 Developer is a full-featured free edition, licensed for use as a development and test database in a non-production environment.

[Download now](#)



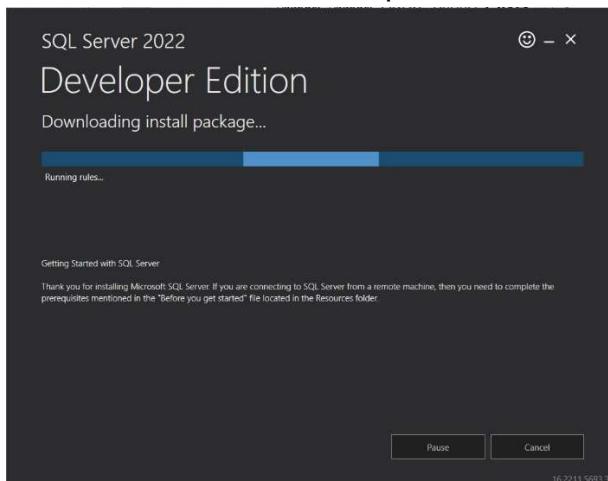
Express

SQL Server 2022 Express is a free edition of SQL Server, ideal for development and production for desktop, web, and small server applications.

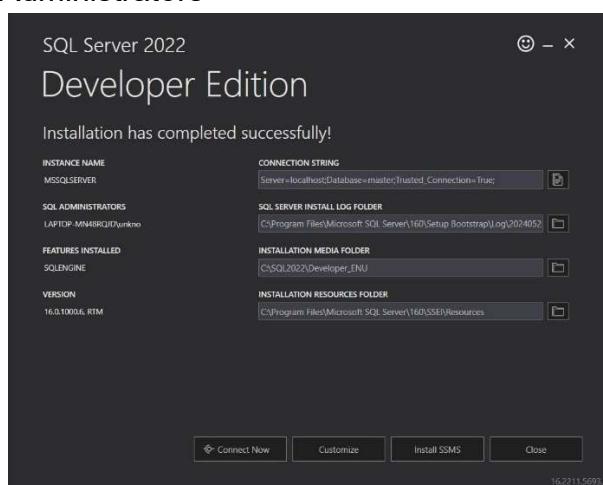
[Download now](#)

SQLBits 2023 - A hybrid conference in Wales and online, 13-18 March. [Find out more >](#)

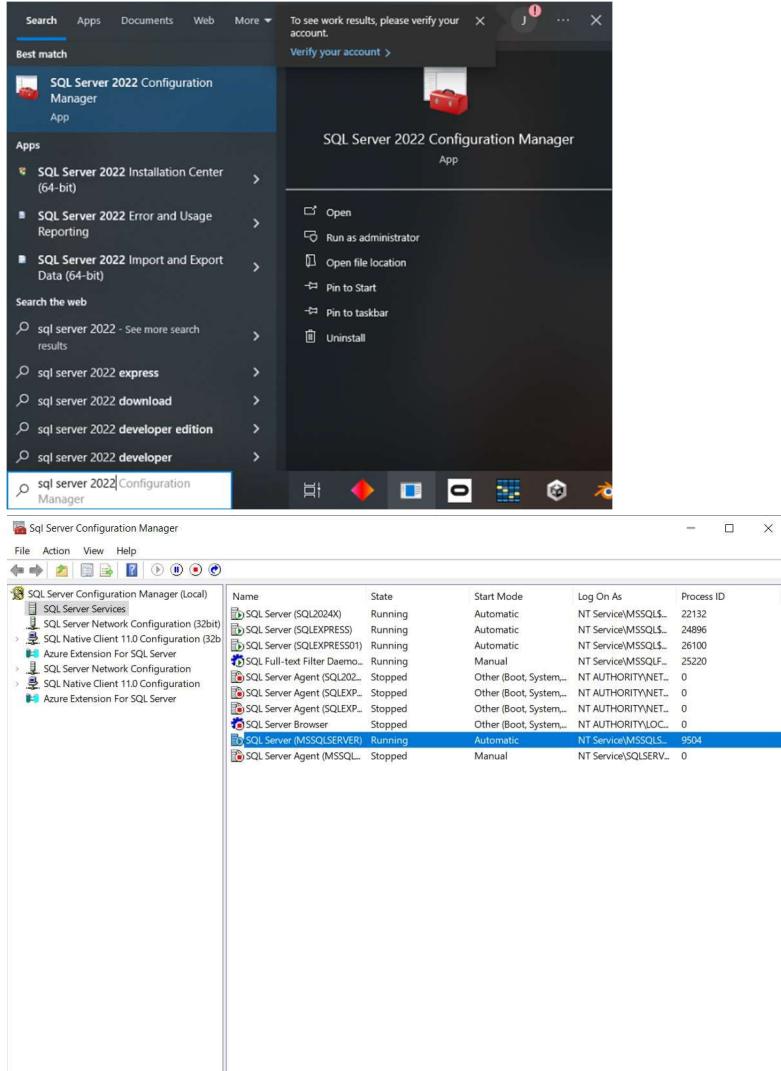
2. Next follow the installation process and create a basic sql server.



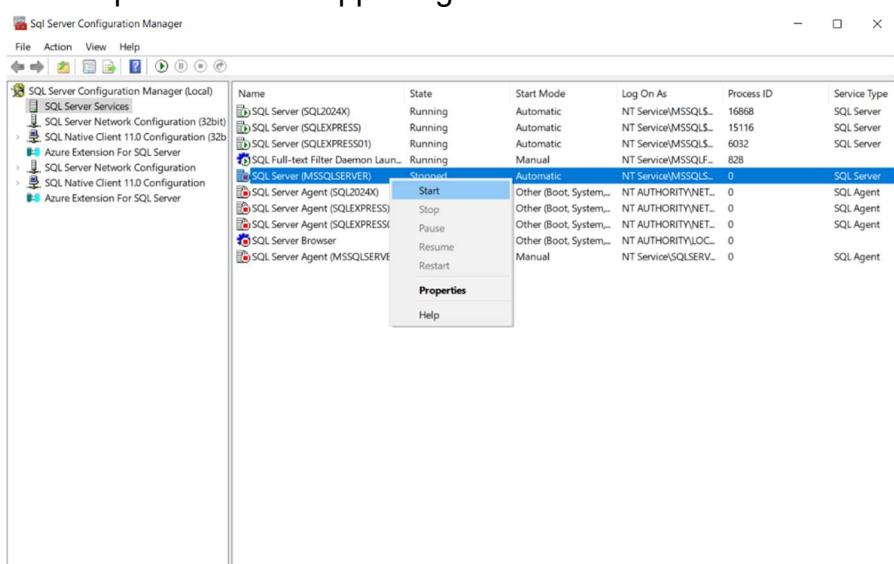
3. Take note of the **sql instance** and your **machine address** under SQL Administrators



4. Optionally you can install sql server management studio if you wish but you don't need to. Take note of the instance name "MSSQLSERVER".
5. To check your sql server is running open "SQL server 2022 configuration" manager and check if the sate is running.



6. If the sql server has stopped right click the server and click start.



7. To connect to the SQL server to check connectivity open command prompt and put in your machine address/sql instance so for example you would put in “sqlcmd -S MYLAPTOP-ABC123\MSSQLSERVER -E”

```
Command Prompt - sqlcmd -S LAPTOP-MN48RQJD\SQL2024X -E - SQLCMD
Microsoft Windows [Version 10.0.19045.4412]
(c) Microsoft Corporation. All rights reserved.

C:\Users\unkno>sqlcmd -S LAPTOP-MN48RQJD\SQL2024X -E
1>
```

8. After that with command prompt still open run the query “CREATE DATABASE RESTURANTS” on one line and type “GO” on the next to run the query

```
Command Prompt - sqlcmd -S LAPTOP-MN48RQJD\SQL2024X -E - SQLCMD
Microsoft Windows [Version 10.0.19045.4412]
(c) Microsoft Corporation. All rights reserved.

C:\Users\unkno>sqlcmd -S LAPTOP-MN48RQJD\SQL2024X -E
1> create database restaurants
2> go
```

9. Next you can exit the command prompt after no error presented

```
2> go
1>
```

Installing C++

1. Download the c++ installer from the following link

<https://code.visualstudio.com/docs/cpp/config-mingw>

1. You can download the latest installer from the MSYS2 page or use this [direct link to the installer](#).

2. Run the installer and follow the steps of the installation wizard. Note that MSYS2 requires 64 bit Windows 8.1 or newer.

3. In the wizard, choose your desired Installation Folder. Record this directory for later. In most cases, the recommended directory is acceptable. The same applies when you get to setting the start menu shortcuts step. When complete, ensure the **Run MSYS2 now** box is checked and select **Finish**. This will open a MSYS2 terminal window for you.

4. In this terminal, install the MinGW-w64 toolchain by running the following command:

```
pacman -S --needed base-devel mingw-w64-ucrt-x86_64-toolchain
```

5. Accept the default number of packages in the **toolchain** group by pressing **Enter**.

```
$ pacman -S --needed base-devel mingw-w64-ucrt-x86_64-toolchain
Warning: base-devel-2022.12-2 is up to date -- skipping
:: There are 19 members in group mingw-w64-ucrt-x86_64-toolchain:
   :: Repository ucrt64
      1) mingw-w64-ucrt-x86_64-binutils 2) mingw-w64-ucrt-x86_64-crt-git
      3) mingw-w64-ucrt-x86_64-gcc 4) mingw-w64-ucrt-x86_64-gcc-ada
      5) mingw-w64-ucrt-x86_64-gcc-objc 6) mingw-w64-ucrt-x86_64-gcc-fortran
      7) mingw-w64-ucrt-x86_64-gcc-objc-1 8) mingw-w64-ucrt-x86_64-gcc-objc-jit
      9) mingw-w64-ucrt-x86_64-gdb 10) mingw-w64-ucrt-x86_64-gdb-multiarch
     11) mingw-w64-ucrt-x86_64-headers-git 12) mingw-w64-ucrt-x86_64-libcgit
     13) mingw-w64-ucrt-x86_64-libmangle-git 14) mingw-w64-ucrt-x86_64-libwinpthread-git
     15) mingw-w64-ucrt-x86_64-make 16) mingw-w64-ucrt-x86_64-pkgconf
     17) mingw-w64-ucrt-x86_64-tools-git 18) mingw-w64-ucrt-x86_64-winpthreads-git
     19) mingw-w64-ucrt-x86_64-winstorecompat-git
```

Enter a selection (default=all):

6. Enter **y** when prompted whether to proceed with the installation.

2. Run the .exe file to install the c++ compiler and save the location folder in your windows directory.

Downloads

Name	Date modified	Type	Size
Today (3)			
spark-waren...	29/05/2024 1:47 PM	Application	77,00 KB
314Project-i...	29/05/2024 1:41 PM	Application	938 KB
aso-1.30.2.2...	29/05/2024 12:56 PM	Microsoft Edge PD...	152 KB
Earlier this week (1)			
ml-1maz...	27/05/2024 8:05 PM	Microsoft Edge PD...	88 KB
Last week (13)			
SQLSRV512...	26/05/2024 9:48 PM	Microsoft Edge PD...	217 KB
Favorites	26/05/2024 9:42 PM	Jupyter Source File	487 KB
Links	26/05/2024 8:56 PM	Microsoft Excel Cu...	32,4950 KB
Music	26/05/2024 8:54 PM	WinZip File	9,711 KB
OneDrive	26/05/2024 8:49 PM	Jupyter Source File	386 KB
Pictures	25/05/2024 9:20 PM	WinZip File	91 KB
Saved Games	25/05/2024 9:12 PM	WinZip File	10,760 KB
Searches	25/05/2024 9:11 PM	WinZip File	3,401 KB
source	25/05/2024 4:37 PM	Application	4,191 KB
Tracing	25/05/2024 4:18 PM	WinZip File	2,493 KB
Videos	22/05/2024 3:49 PM	Jupyter Source File	45 KB
VirtualBox V...	20/05/2024 11:09 PM	Microsoft Edge PD...	370 KB
VirtualBox V...	20/05/2024 7:55 PM	Microsoft Excel Cu...	8 KB

MSYS2 Setup

Welcome

Welcome to the MSYS2 Setup.

Installation Folder

Please specify the directory where MSYS2 will be installed.

C:\msys64

Next Quit

MSYS2 Setup

Welcome

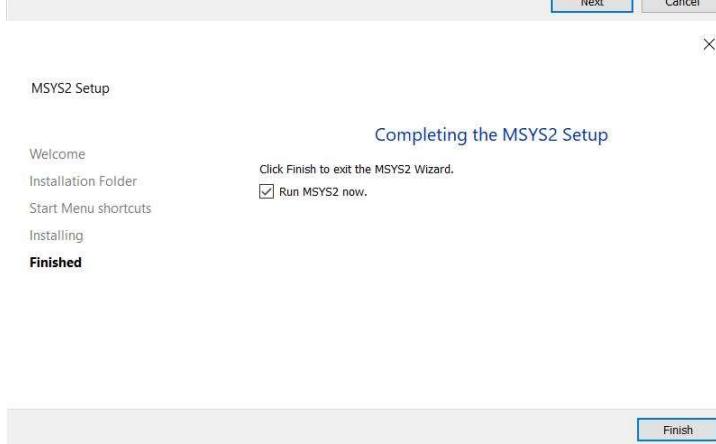
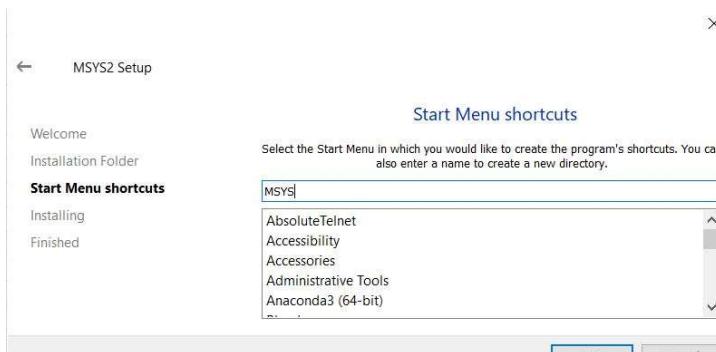
Installation Folder

Please specify the directory where MSYS2 will be installed.

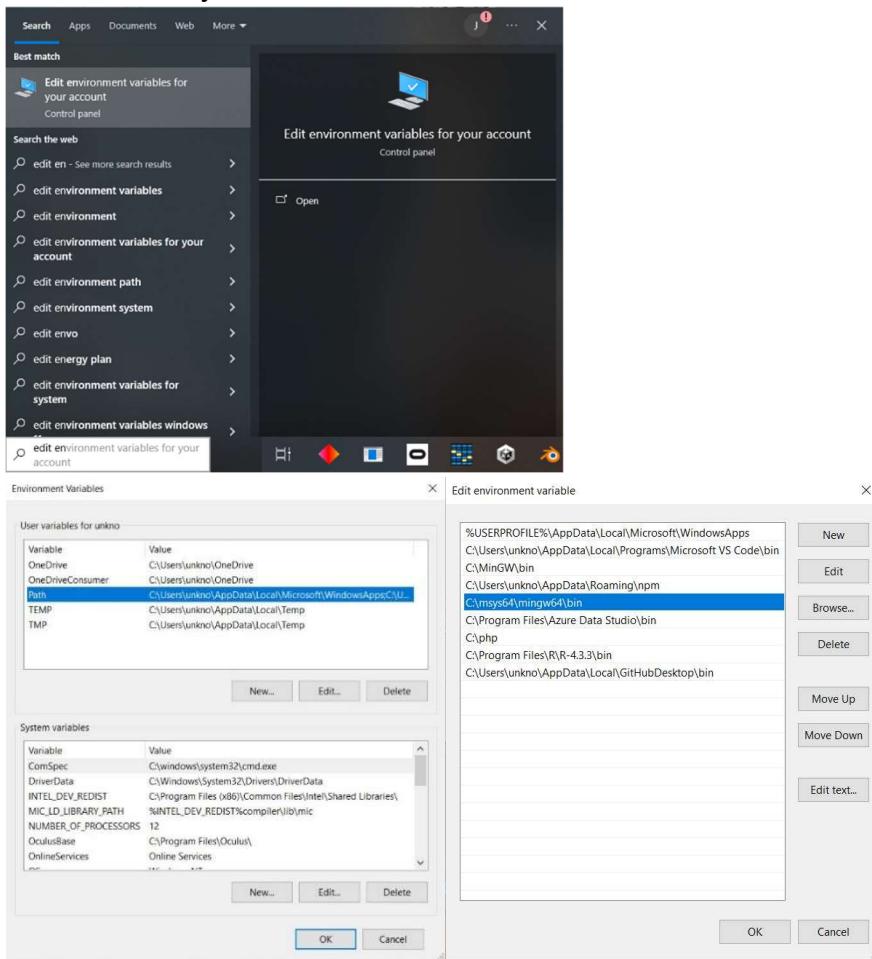
C:\msys64

Browse...

Next Cancel



3. Open environment variables and add the directory "C:\msys64\ucrt64\bin" then click okay.

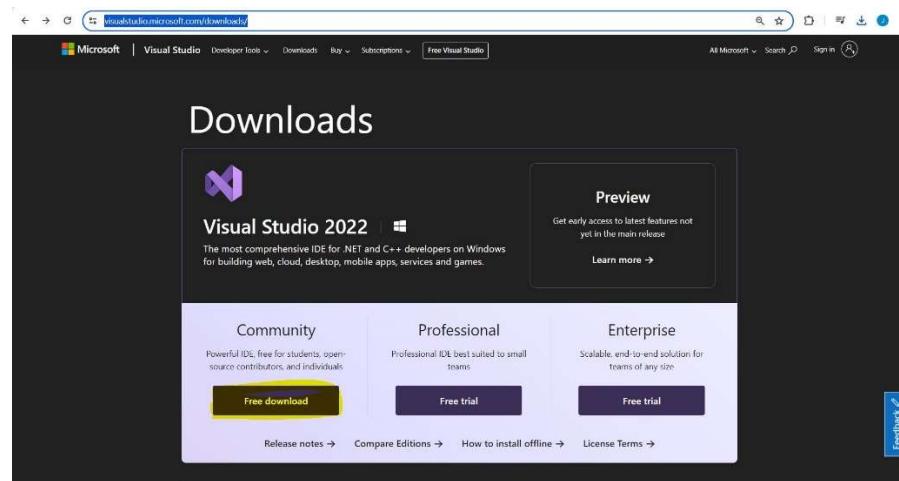


4. Restart computer to update environment variables.
5. To check weather everything is installed correctly open command prompt and run the command “g++ --version”, and it should show you the c++ version

```
Command Prompt
Microsoft Windows [Version 10.0.19045.4412]
(c) Microsoft Corporation. All rights reserved.

C:\Users\unkno>g++ --version
g++ (GCC) 11.2.0
Copyright (C) 2021 Free Software Foundation, Inc.
This is free software; see the source for copying conditions. There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
```

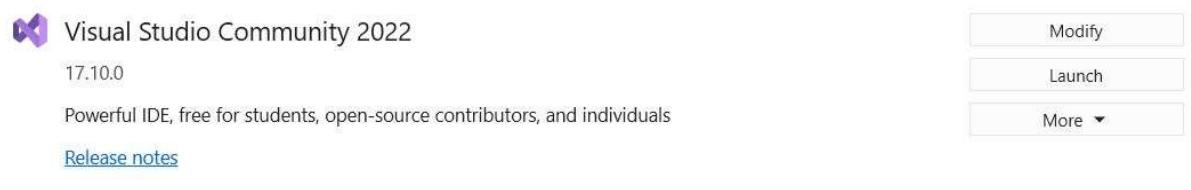
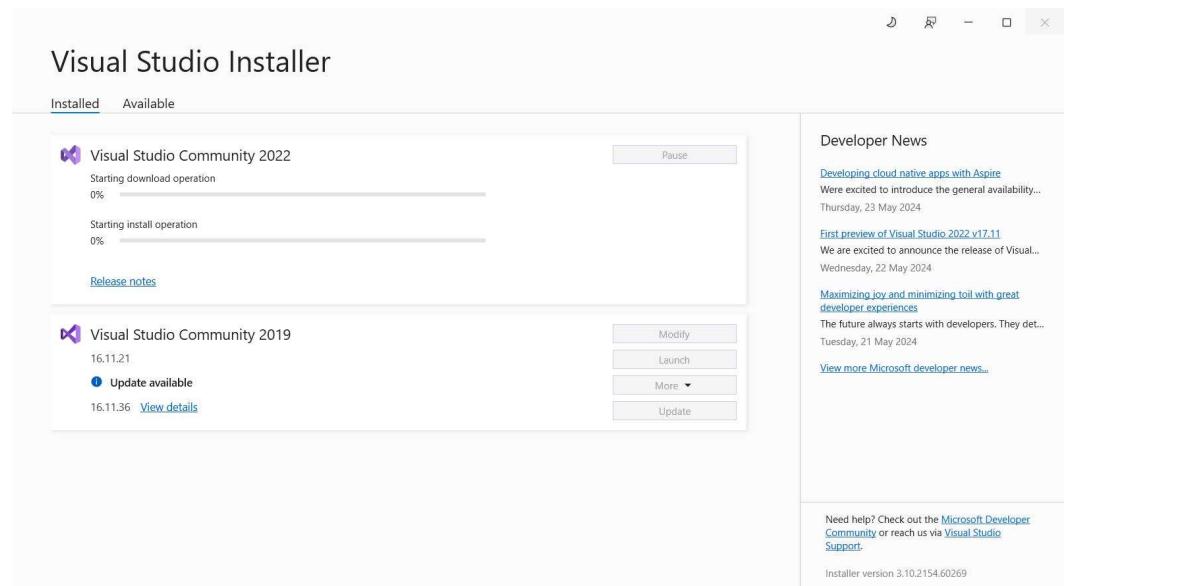
6. Next we will install visual studio. To do so go the link and download the community free download <https://visualstudio.microsoft.com/downloads/>



7. Next open the .exe file and follow instructions to the installer.

The screenshot shows a Windows File Explorer window titled 'Downloads'. It lists several files, with 'VisualStudioSetup.exe' being the selected item, indicated by a checked checkbox. To the right of the file list, there's a 'Visual Studio Installer' window. The window has a progress bar at the top that says 'Getting the Visual Studio Installer ready.' and 'Downloading: 4.58 MB of 27.51 MB' with a speed of '2.05 MB/sec'. Below the progress bar, it says 'Installing'.

8. After that you can install visual studio 2022 community



Installing ASIO

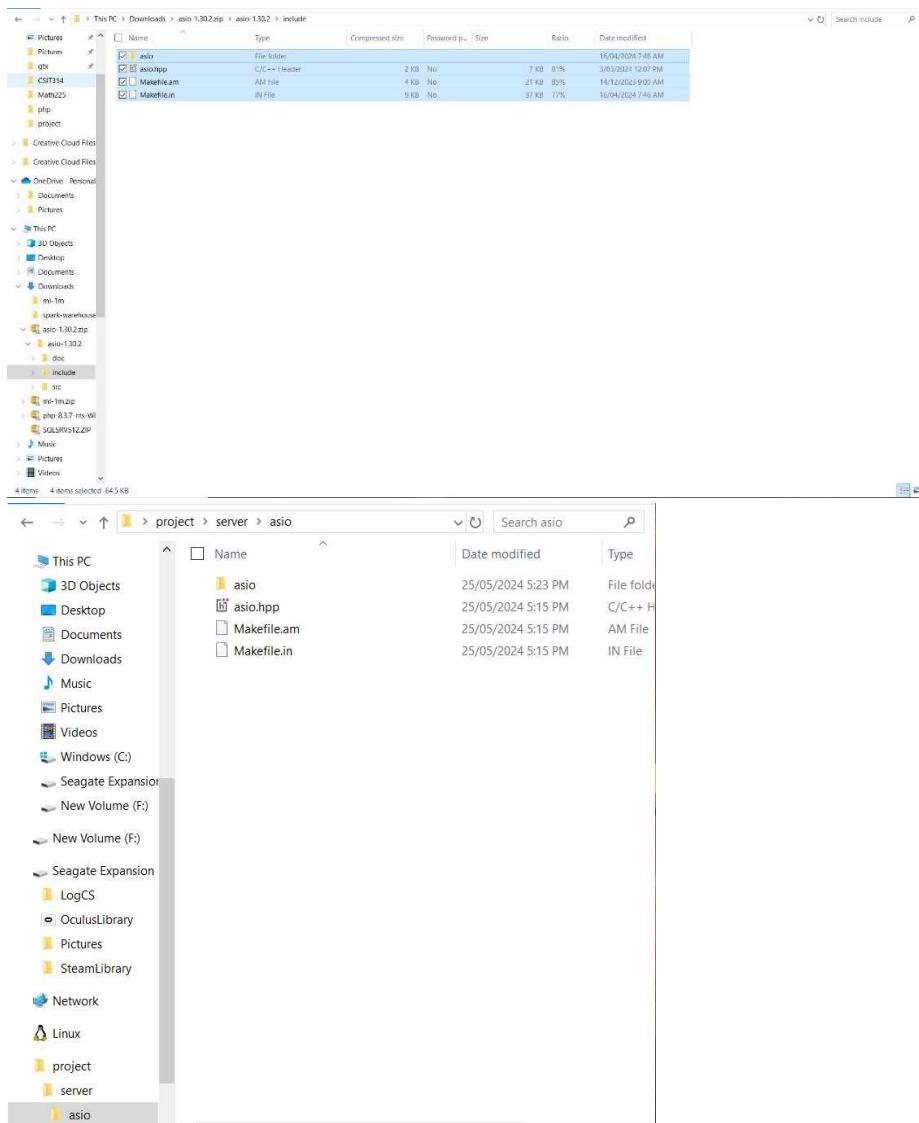
1. Download asio-1.30.2.zip from the following link <https://think-async.com/Asio/>

The screenshot shows the Asio C++ library website's latest stable release page. At the top, there is a navigation bar with links to Home, Download, Documentation, Source, Mailing List, and Blog. Below the navigation bar, the title "Asio C++ Library" is displayed, followed by a brief description: "Asio is a cross-platform C++ library for network and low-level I/O programming that provides developers with a consistent asynchronous model using a modern C++ approach." A large green button labeled "START" is prominently displayed, with instructions: "Three simple steps: 1. Click on 'Start' 2. Activate your account 3. Access your content". Below this, there is a video player showing a video titled "Talking Async Ep1: Why C++20 is the A...". The main content area shows a table of files for download:

Name	Modified	Size	Downloads / Week
asio-1.30.2.tar.bz2	2024-04-15	3.2 MB	73
asio-1.30.2.zip	2024-04-15	11.0 MB	333
asio-1.30.2.targz	2024-04-15	4.5 MB	269
boost_asio_1_30_2.zip	2024-04-15	13.9 MB	39
boost_asio_1_30_2.targz	2024-04-15	6.5 MB	6
boost_asio_1_30_2.tar.bz2	2024-04-15	4.8 MB	1
Totals: 6 items		43.9 MB	721

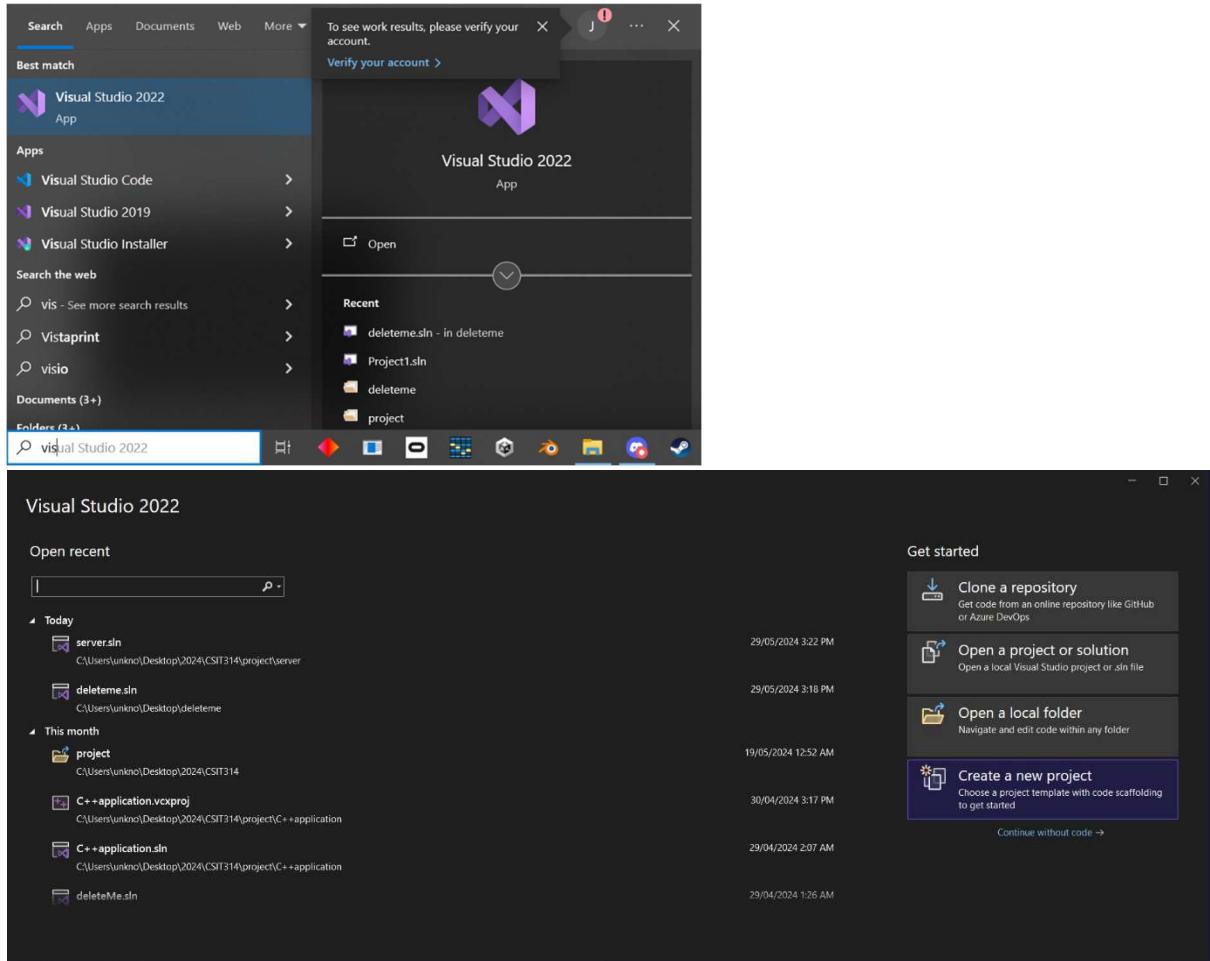
On the right side of the page, there are recommended projects: "asio samples", "Boost C++ Libraries", and "POCO C++ Libraries".

2. Next extract all the files from the include directory into a new folder called asio in the server folder.

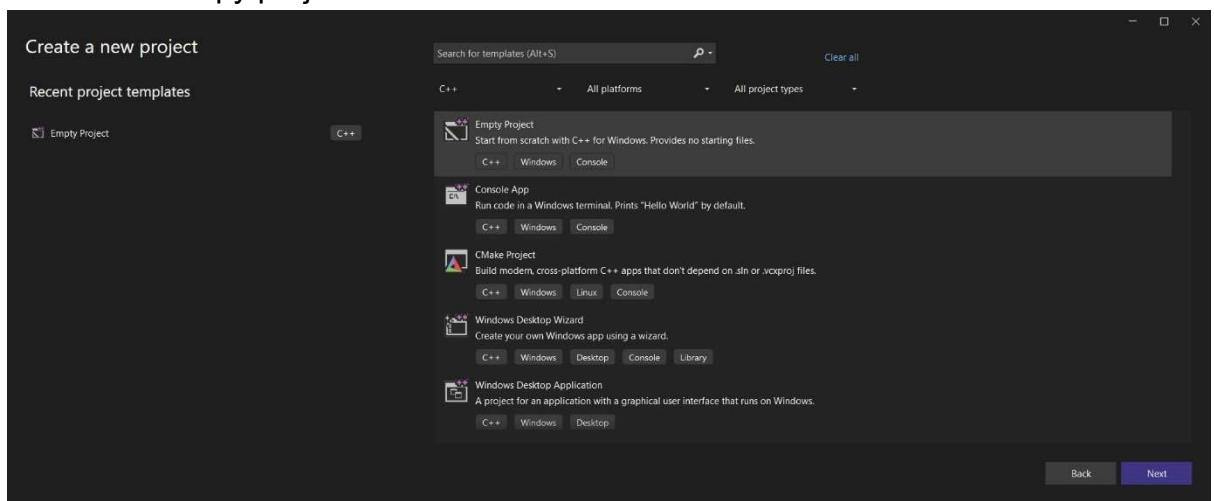


Setting Up application project

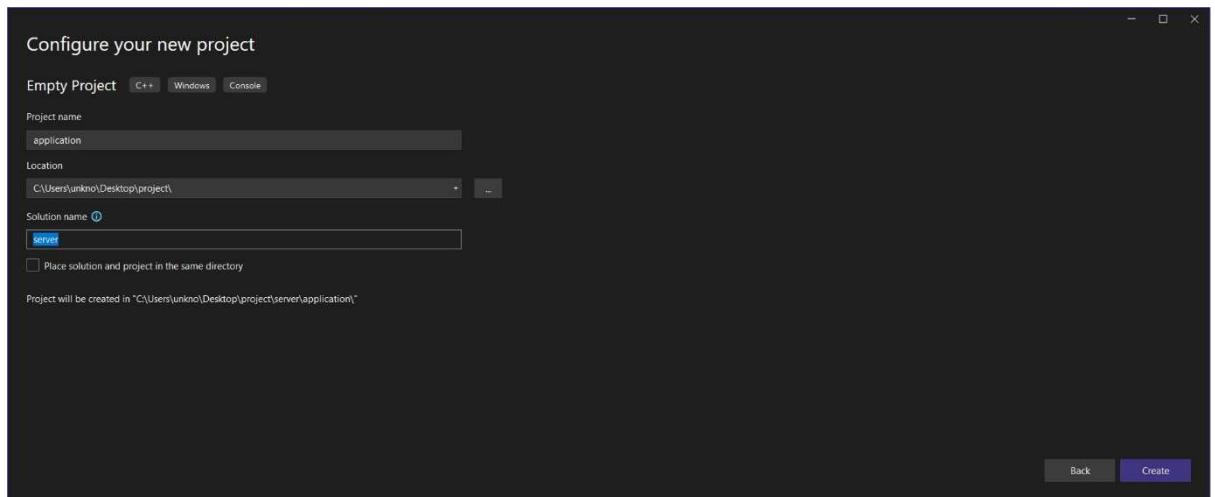
1. Open visual studio 2022 and create a new project



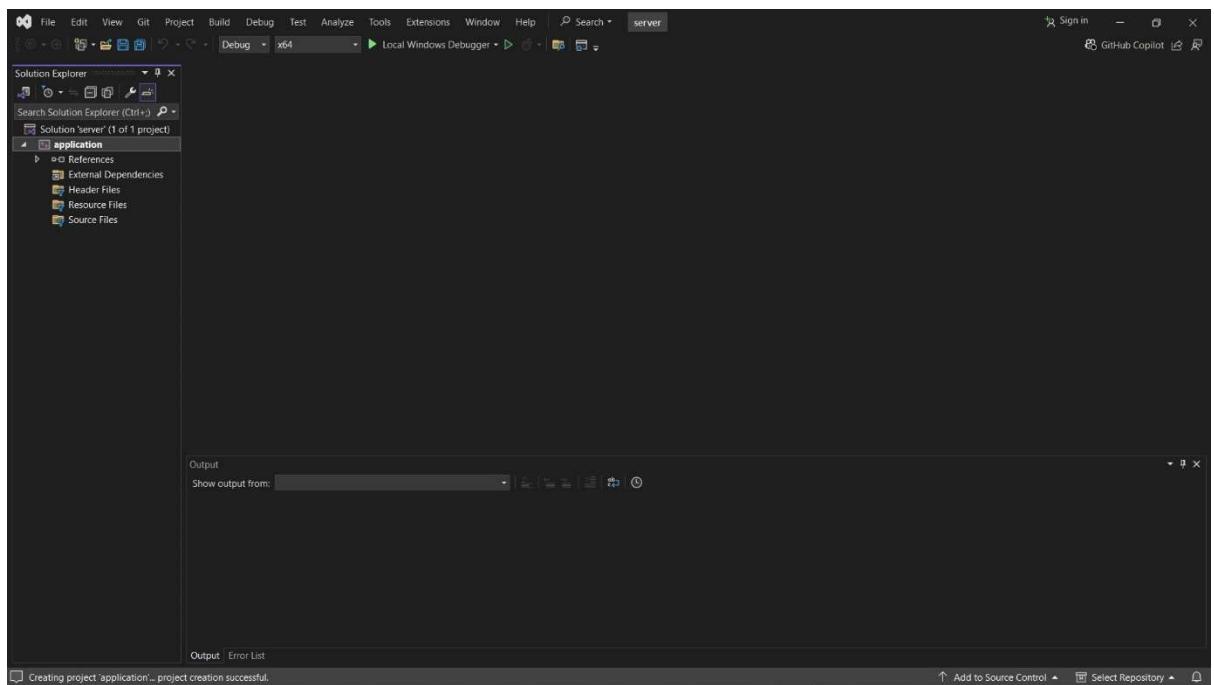
2. Choose an empty project and click next



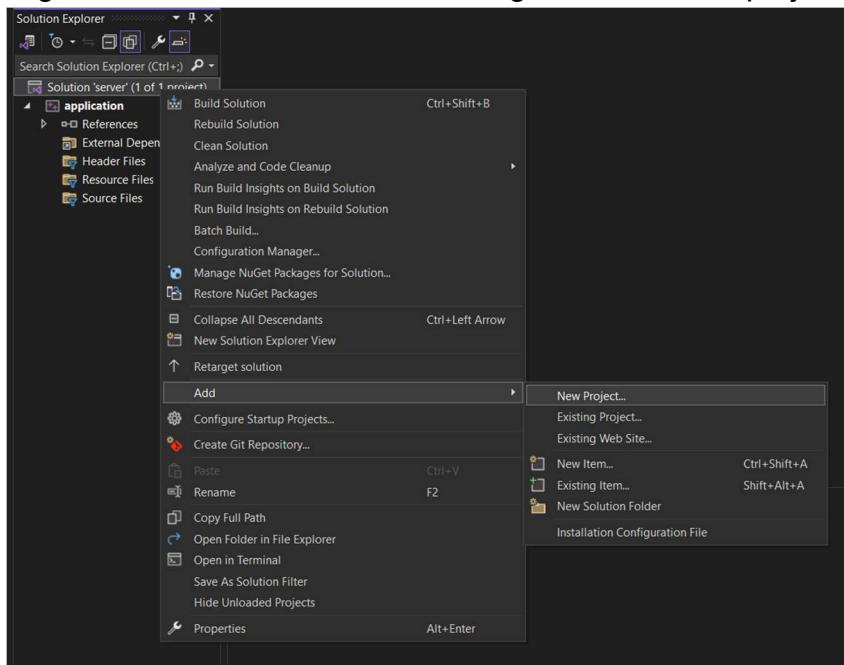
3. Call the project name whatever you want, but the location must be in the project directory and the solution name must be server, then click next.



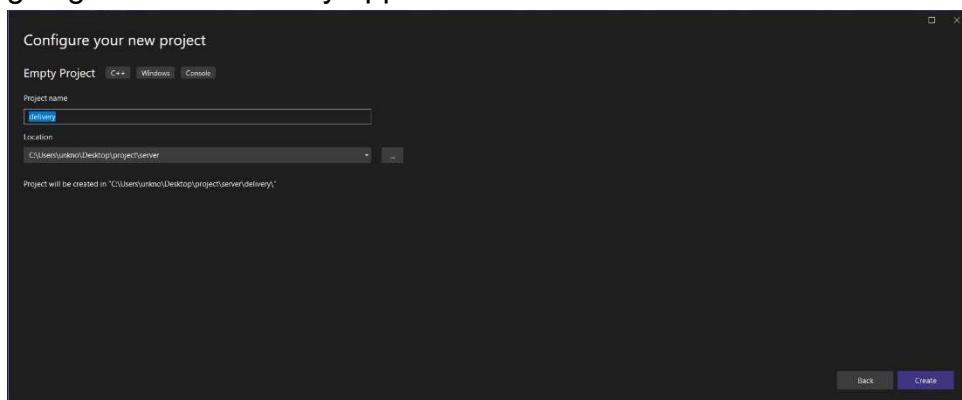
4. You should see this screen.



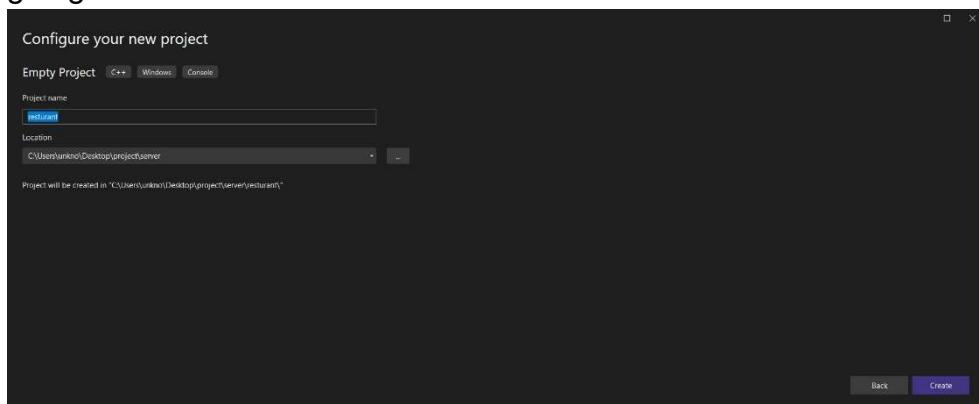
5. Right click the solution 'server' and go to new – add project and click it.



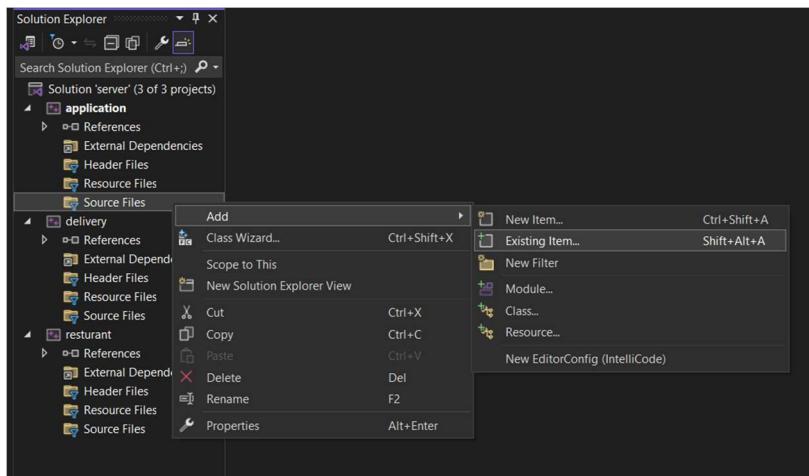
6. Add an empty project and make sure the projects name is delivery as its going to be the delivery application.



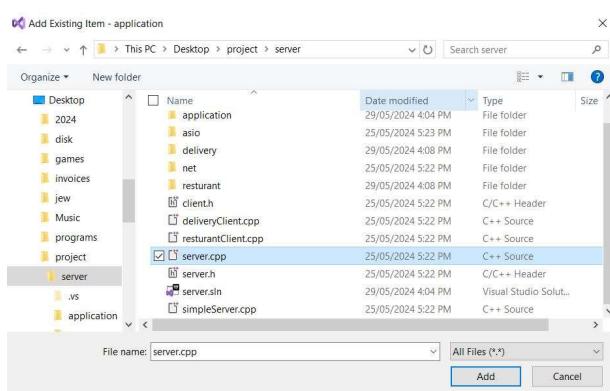
7. Next add another empty project the same way but name is resturant as its going to be the resturant client.



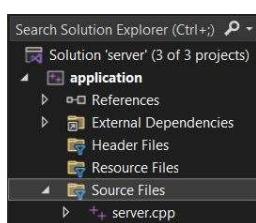
8. Next right click the source files filter in the application and click add – existing item.



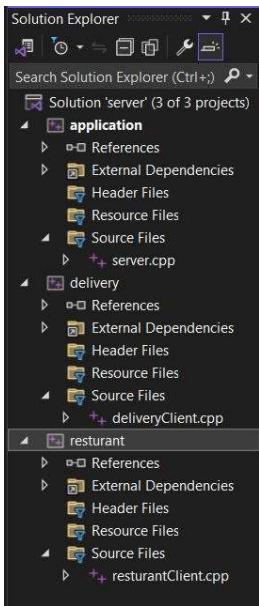
9. Choose server.cpp in the server folder (should be one level up from where it puts you in the file explorer).



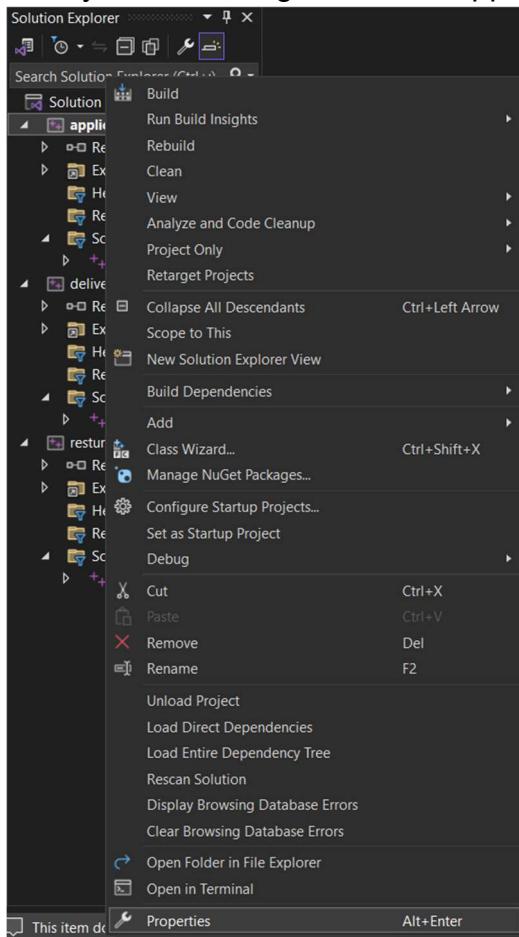
10. You should see this under the source files filter.



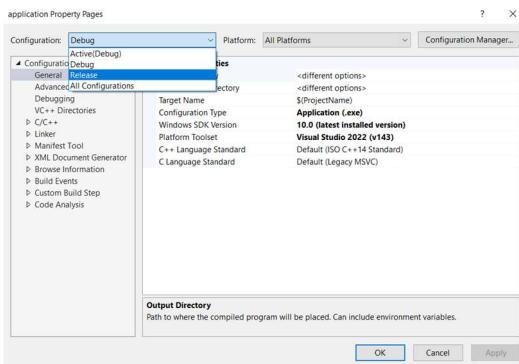
11. Do the same process for the delivery and restaurant projects but pick the 2 files accordingly. The delivery project should be deliveryClient.cpp and the restaurant project should be restaurantClient.cpp. the resulting explorer on the side should look like this.



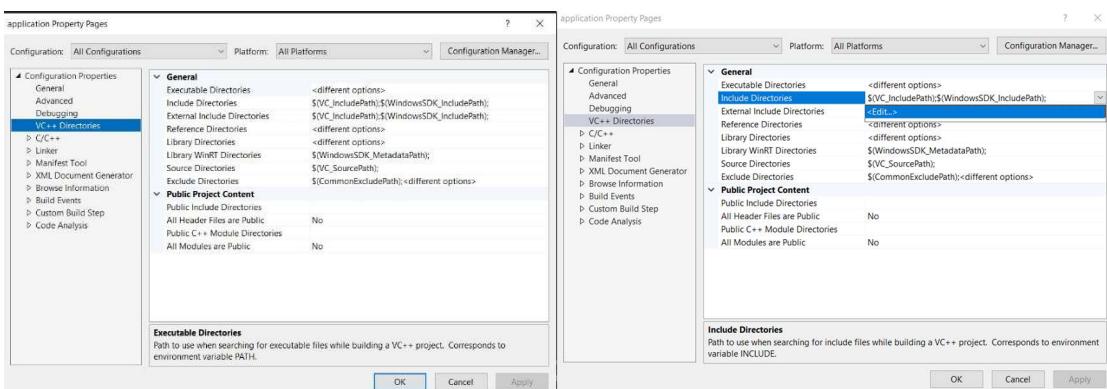
12. Next you need to right click the application header and go to properties.



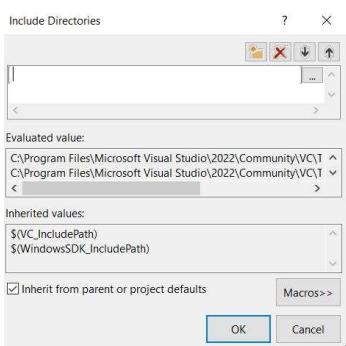
13. At the top of the properties click the all configurations and click release.



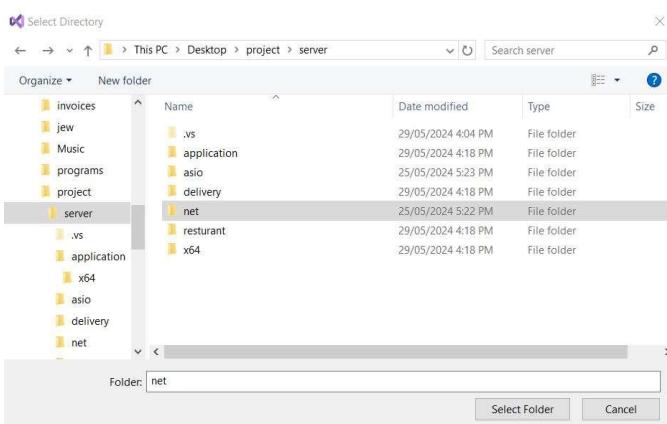
14. In the properties go to VC++ Directories and edit the include directories.



15. In the new window click a new line and again click the 3 dots.

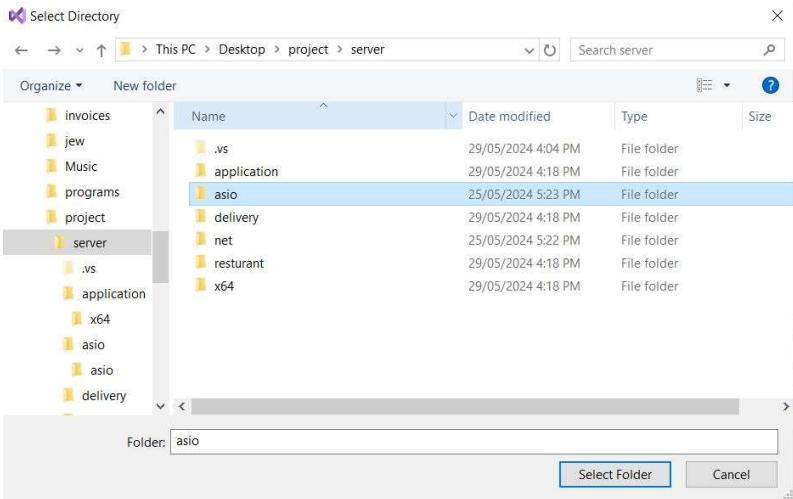


16. Navigate to the net folder and click the folder once and then click select folder.

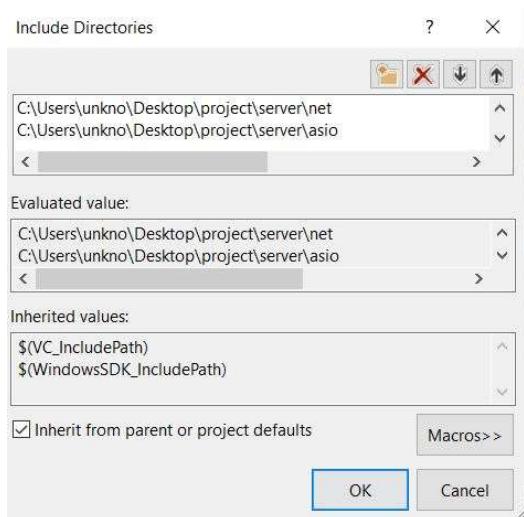


17. Again click the 3 dots in a new line to make another include directory.

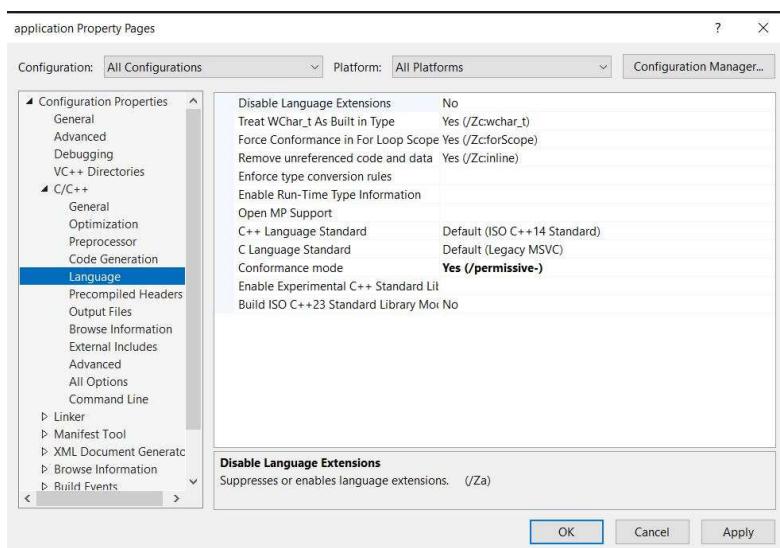
18. Click the asio file we put in the server folder.



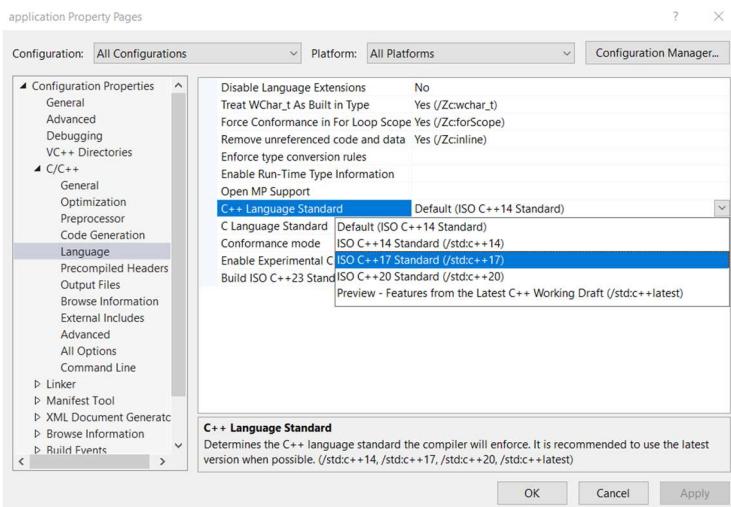
19. After that click okay.



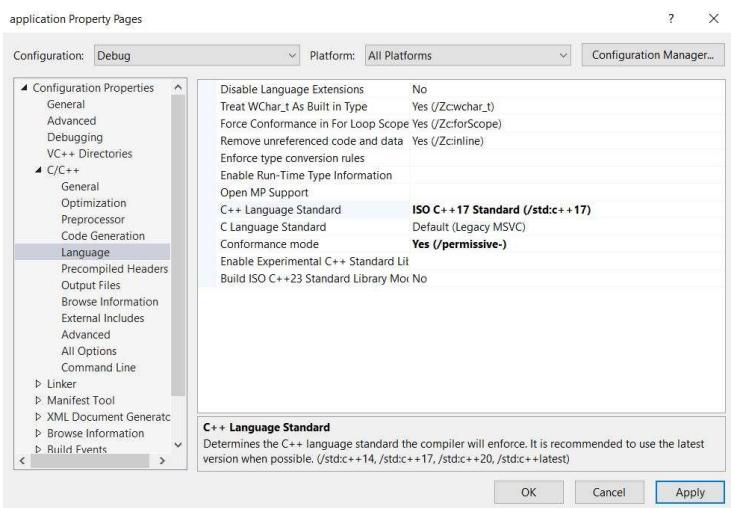
20. Then after that navigate to the language header under c/c++



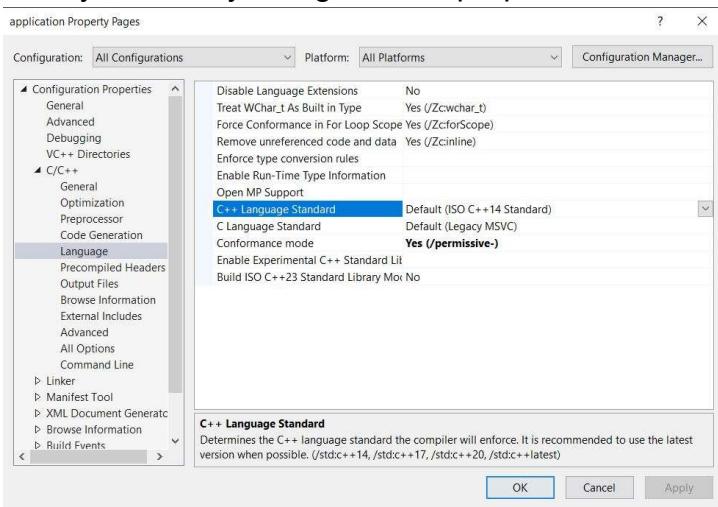
21. Click the c++ language standard and change it to c++ 17 Standard.



22. Next click apply to all changes

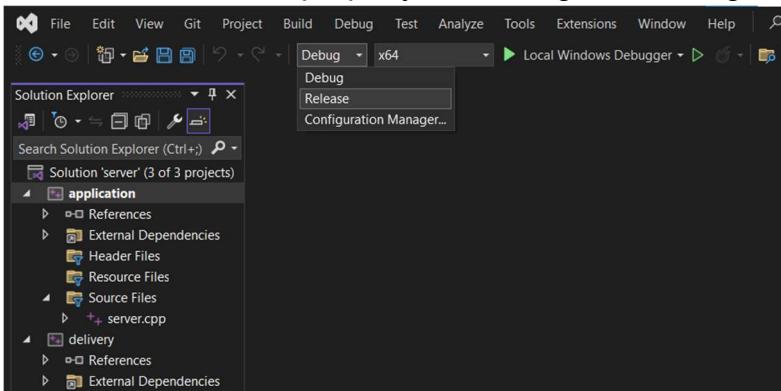


23. Finally click okay and get out of properties.

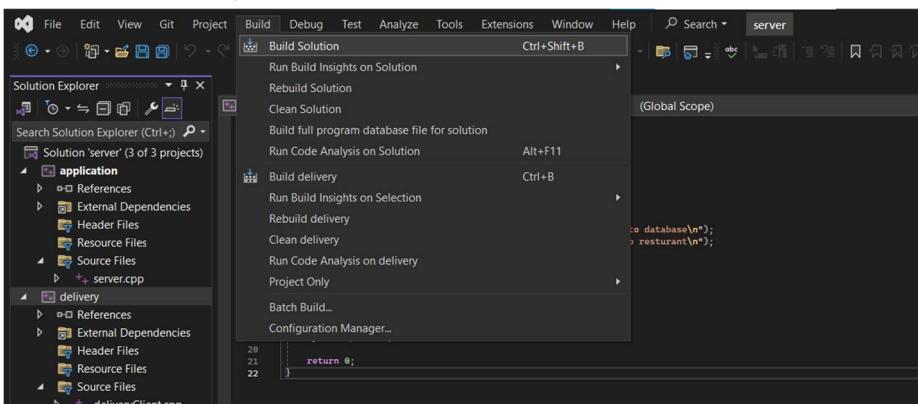


24. Next change the exact same properties for the other 2 projects (12-23)

25. To check if it all runs properly first change the debug to release.



26. Then Click build, then build solution.



27. Make sure there is no error at the bottom of the console, you should get something like this.

```
Output
Show output from: Build
=====
3>All 2156 functions were compiled because no usable IPDB/IOBJ from previous compilation was found.
2>All 2262 functions were compiled because no usable IPDB/IOBJ from previous compilation was found.
3>Finished generating code
2>Finished generating code
3>application.vcxproj -> C:\Users\unkno\Desktop\project\server\x64\Release\application.exe
2>delivery.vcxproj -> C:\Users\unkno\Desktop\project\server\x64\Release\delivery.exe
2>Done building project "delivery.vcxproj".
3>Done building project "application.vcxproj".
===== Rebuild All: 3 succeeded, 0 failed, 0 skipped =====
===== Rebuild completed at 5:11 PM and took 08.389 seconds =====
```

Setting Up TSQL tables

1. To set up the tables in the database open command prompt and forward to the sql directory.

```
Command Prompt  
Microsoft Windows [Version 10.0.19045.4412]  
(c) Microsoft Corporation. All rights reserved.  
C:\Users\unkno>cd Desktop\2024\CSIT314\project  
C:\Users\unkno\Desktop\2024\CSIT314\project>cd sqlQueries  
C:\Users\unkno\Desktop\2024\CSIT314\project\sqlQueries>
```

2. Run a new line and using the **machineAddress** and **Servername** from before write “sqlcmd -S **machineAddress\Servername** -i create.sql”.
machineAddress – your machine address
Servername – the instance name of the sql server

```
C:\Users\unkno\Desktop\2024\CSIT314\project\sqlQueries>sqlcmd -S LAPTOP-MN48RQJD\SQL2024X -i create.sql  
Changed database context to 'RESTURANTS'.  
C:\Users\unkno\Desktop\2024\CSIT314\project\sqlQueries>
```

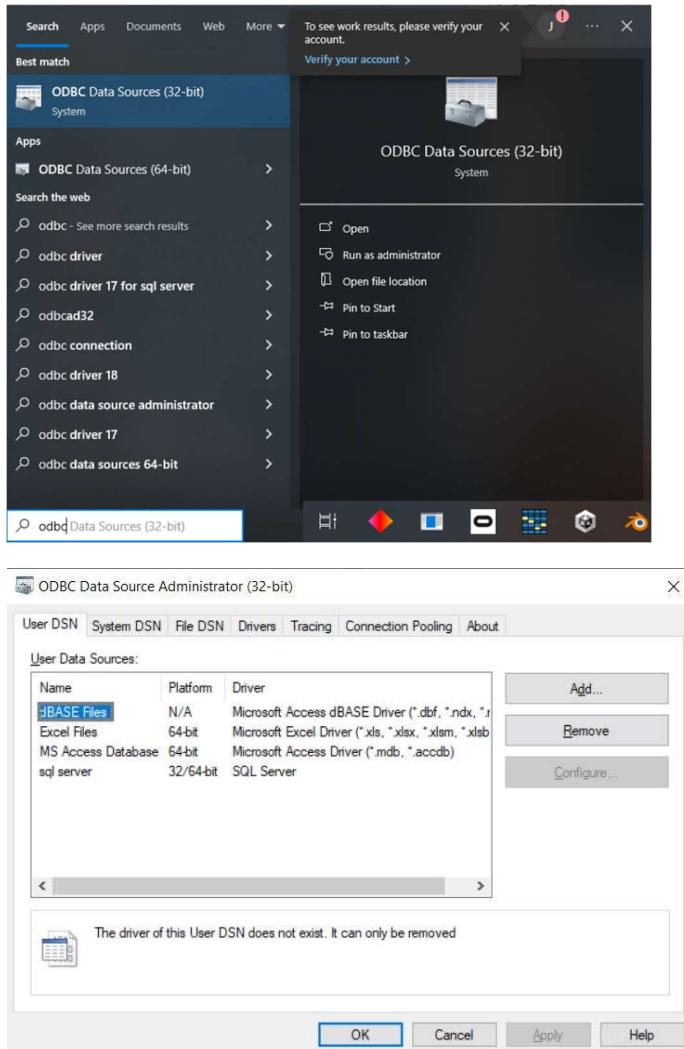
3. Next run three more commands to add procedures, triggers and users/permissions in the database.

```
"sqlcmd -S machineAddress\Servername -i resturantprocedures.sql"  
"sqlcmd -S machineAddress\Servername -i createUser.sql"  
"sqlcmd -S machineAddress\Servername -i resturantTriggers.sql"
```

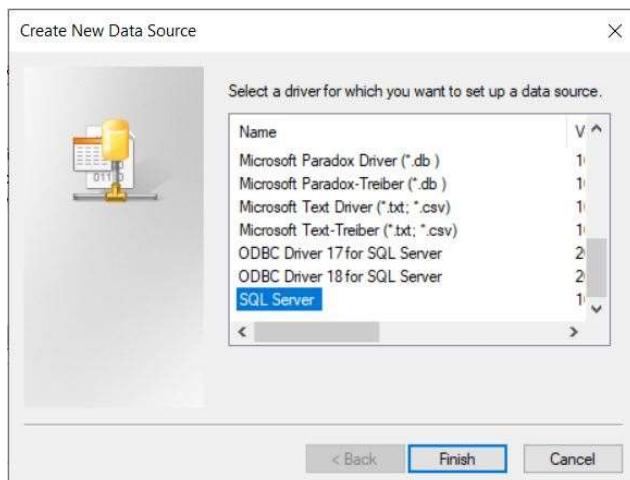
```
C:\Users\unkno\Desktop\2024\CSIT314\project\sqlQueries>sqlcmd -S LAPTOP-MN48RQJD\SQL2024X -i resturantprocedures.sql  
Changed database context to 'RESTURANTS'.  
C:\Users\unkno\Desktop\2024\CSIT314\project\sqlQueries>sqlcmd -S LAPTOP-MN48RQJD\SQL2024X -i createUser.sql  
Changed database context to 'RESTURANTS'.  
C:\Users\unkno\Desktop\2024\CSIT314\project\sqlQueries>sqlcmd -S LAPTOP-MN48RQJD\SQL2024X -i resturantTriggers.sql  
Changed database context to 'RESTURANTS'.  
C:\Users\unkno\Desktop\2024\CSIT314\project\sqlQueries>
```

Setting UP SQL Data Source

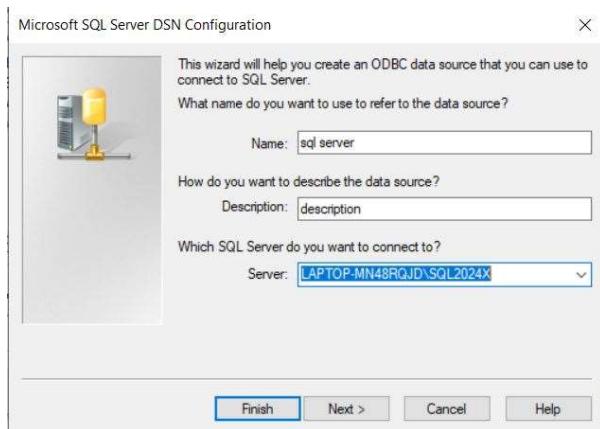
1. To create an sql data source open the ODBC data sources administrator on windows.



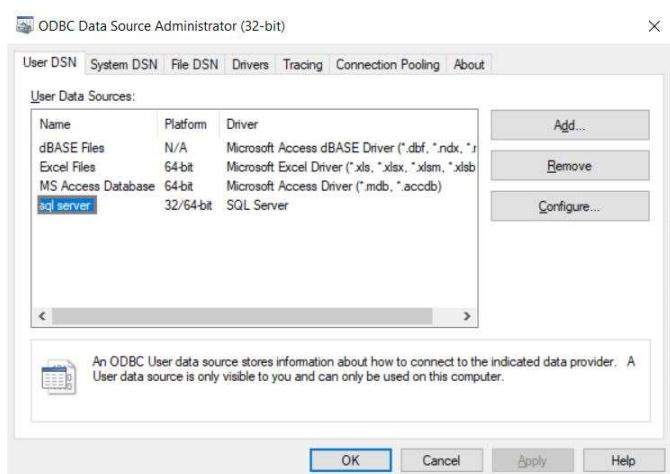
2. Add a new data source by pressing add and selecting SQL server at the bottom of the name list.



3. Press finish and type the server name the description (optional) and the Server field should be your **machineAddress\Servername** from before.



4. Click finish and the data source should be updated.

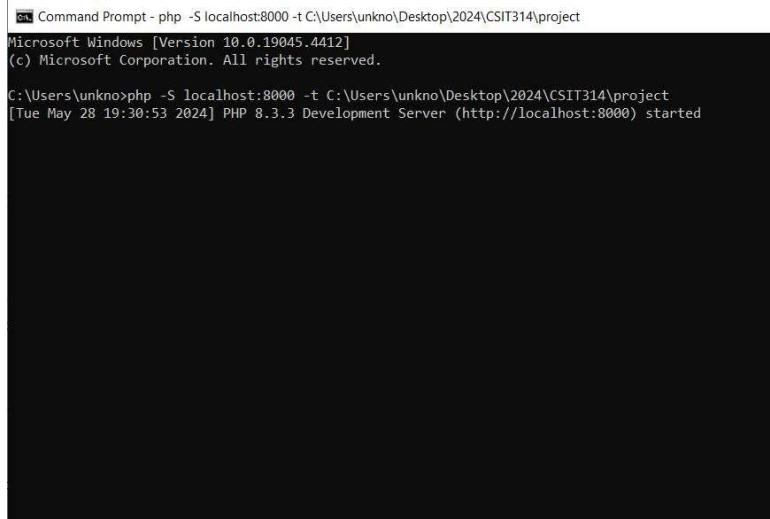


Setting Up php server

1. To set up the php server open the command prompt and write on a new line "php -S"0.0.0.0":**port** -t **location**".

port – The port you want the server to go through

location – Location of the project



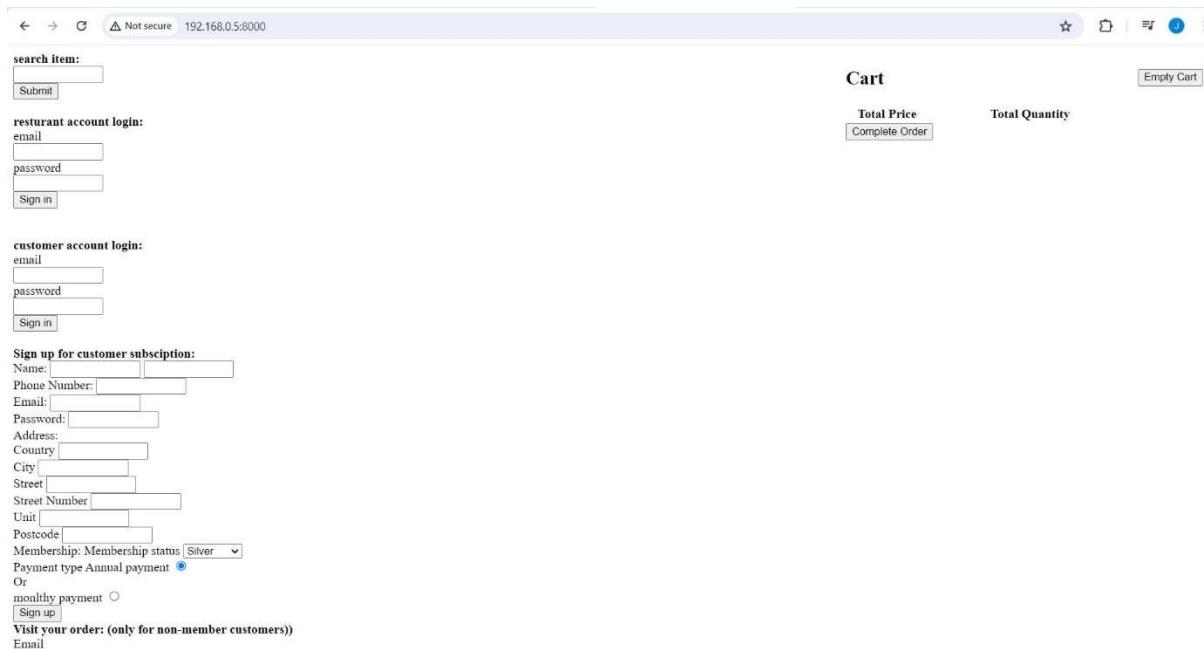
```
Command Prompt - php -S localhost:8000 -t C:\Users\unkno\Desktop\2024\CSIT314\project
Microsoft Windows [Version 10.0.19045.4412]
(c) Microsoft Corporation. All rights reserved.

C:\Users\unkno>php -S localhost:8000 -t C:\Users\unkno\Desktop\2024\CSIT314\project
[Tue May 28 19:30:53 2024] PHP 8.3.3 Development Server (http://localhost:8000) started
```

2. To see the website on the url type <http://ipAddress:port>.

ipAddress – ip address of the network the php server is hosted on.

Port – port you chose for the server.



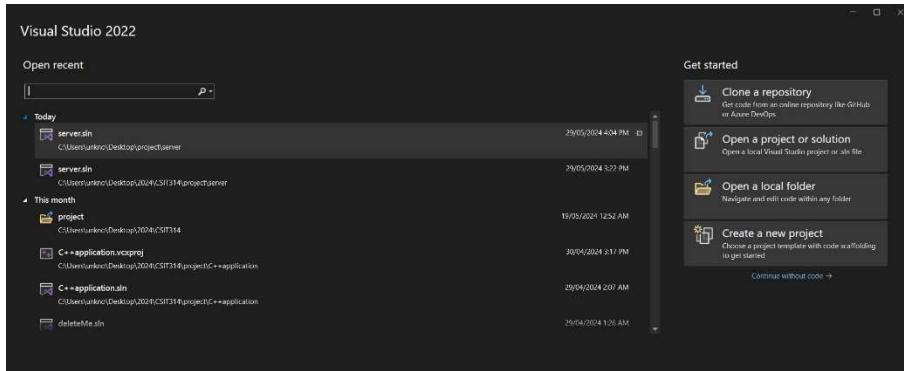
The screenshot shows a web browser window with the following details:

- Address Bar:** Not secure 192.168.0.5:8000
- Left Side (Logins):**
 - search item:
 - Submit
 - restaurant account login:
 - email
 - password
 - Sign in
 - customer account login:
 - email
 - password
 - Sign in
 - Sign up for customer subscription:
 - Name:
 - Phone Number:
 - Email:
 - Password:
 - Address:
 - Country:
 - City:
 - Street:
 - Street Number:
 - Unit:
 - Postcode:
 - Membership: Membership status: Silver
 - Payment type: Annual payment
 - Or
monthly payment
 - Sign up
 - Visit your order: (only for non-member customers)
Email:
- Cart:** Total Price: Complete Order Total Quantity:

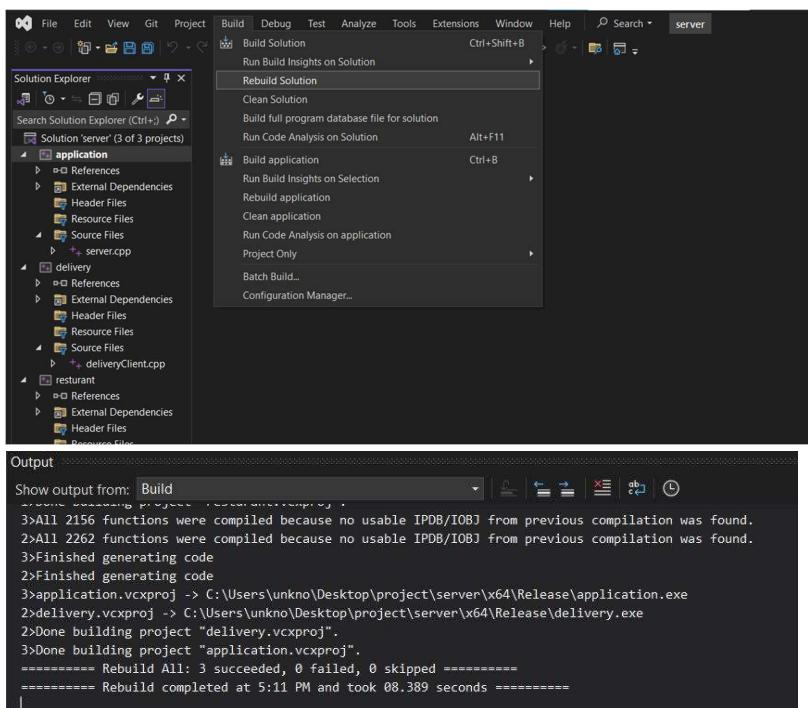
Note: Make sure the port chosen example 8000 is open by using port forwarding in your router if you want to access from outside of the network.

Setting up C++ Server and Applications

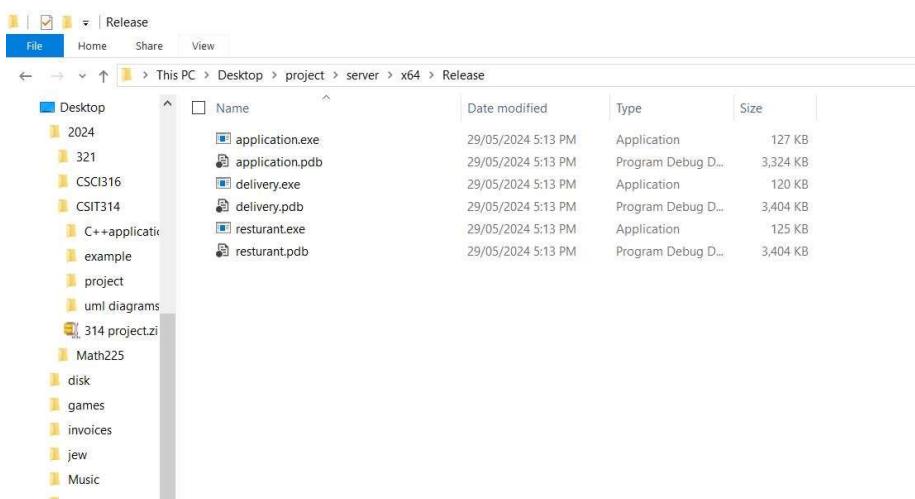
1. Open the visual studio project.



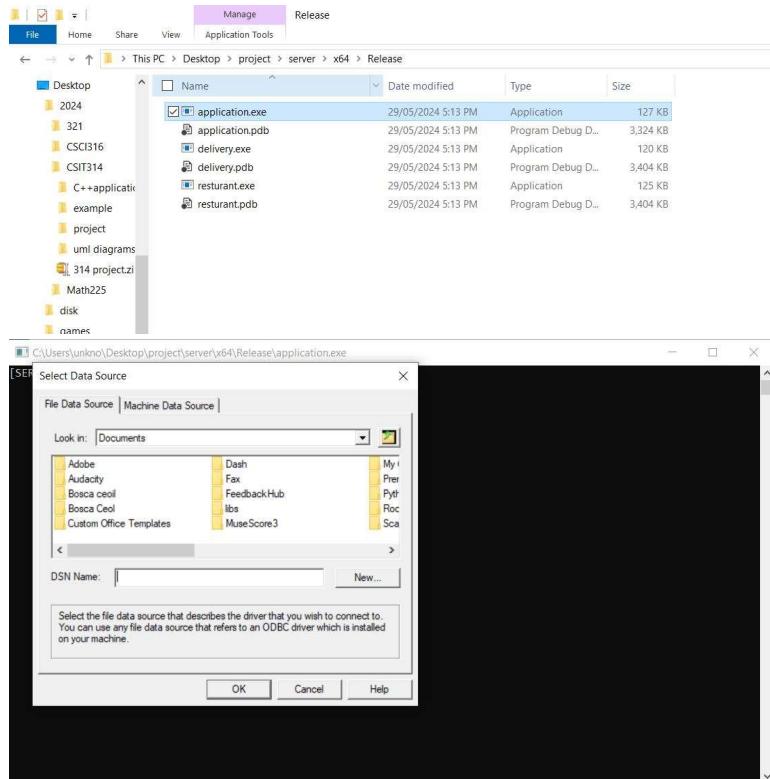
2. Click the Build-Rebuild solution.



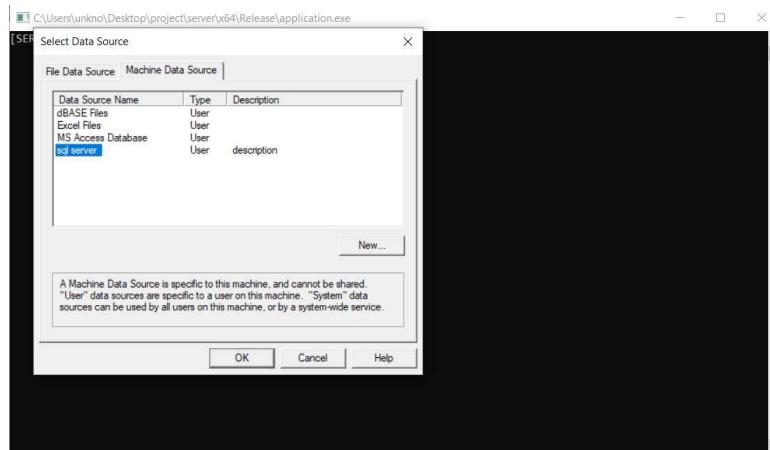
3. The application/server files should be in the x64 folder which is in the server folder.



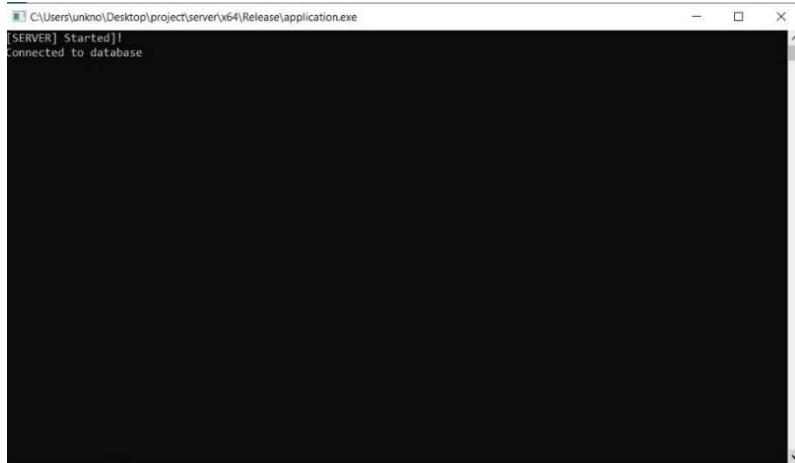
4. Open the application.cpp



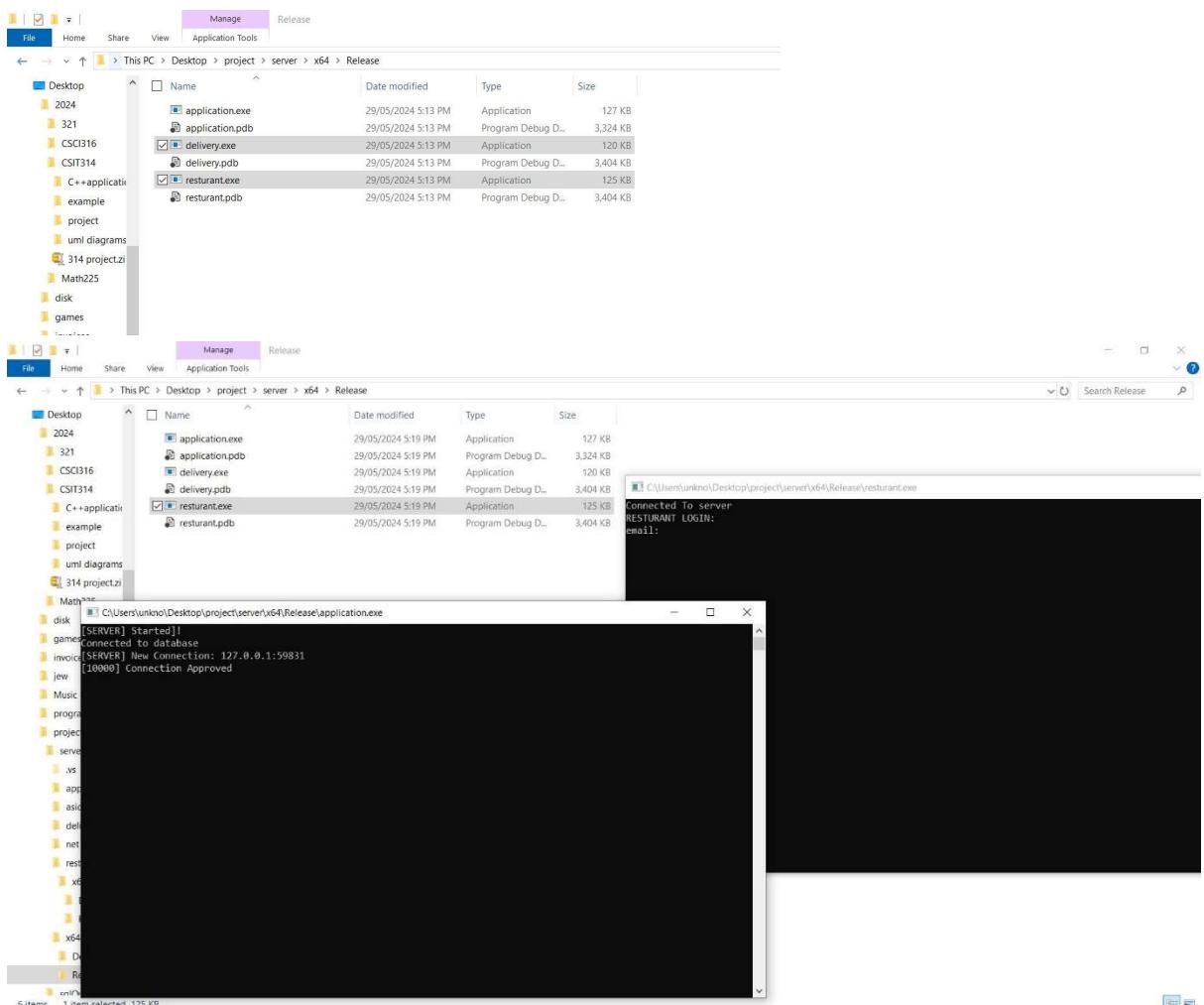
5. Navigate to the sql data source and click the your sql server.



6. This it what it looks like this the server should be up and connected to the tsql server.



7. You can simply connect to the serevr by runnin the other 2 .exe file and auto connects to the server.



Note: If the resturant or delivery application doesn't connect you might need to change the port or the ip address (go to page 41).

Configuring TSQL database

1. To run a mockup database run these three lines..
“`-S machineAddress/SQLInstance -I example.sql`”.
`“sqlcmd -S machineAddress/SQLInstance -i restaurantInsert.sql”`
`“sqlcmd -S machineAddress/SQLInstance -i restaurantItemsInsert.sql”`
`“sqlcmd -S machineAddress/SQLInstance -i restaurantOrdersInsert.sql”`

2. To restart the database run this line

“sqlcmd -S machineAddress/SQLInstance -i drop.sql” in the sqlqueries folder

```
C:\ Command Prompt
Microsoft Windows [Version 10.0.19045.4412]
(c) Microsoft Corporation. All rights reserved.

C:\Users\unkno>cd Desktop\2024\CSIT314\project
C:\Users\unkno\Desktop\2024\CSIT314\project>cd sqlQueries

C:\Users\unkno\Desktop\2024\CSIT314\project\sqlQueries>sqlcmd -S LAPTOP-MN48RQJD\SQL2024X -i drop.sql
Changed database context to 'RESTURANTS'.

C:\Users\unkno\Desktop\2024\CSIT314\project\sqlQueries>
```

3. To access the sql directly on the command prompt you run the command

1. “sqlcmd -S LAPTOP- machineAddress/SQLInstance -E” then write
2. “USE Restaurants”, to use the restaurant context then write
3. “GO” to run the query.

```
C:\Users\unkno\Desktop\2024\CSIT314\project\sqlQueries>sqlcmd -S LAPTOP-MN48RQJD\SQL2024X -E
1> use Restaurants
2> go
Changed database context to 'RESTURANTS'.
1>
```

4. To create a restaurant on the sql line write

“EXEC CreateRestaurant 'restaurantName', ABN, 'sha256Hash', 'Salt', 'Pepper';”

restaurantName – name of the restaurant

ABN – an abn(integer only)

Salt – 16 digit integer(random)

Pepper – 16 digit hexadecimal (random)

sha256Hash – “resulting hash of **Salt+ Pepper**”

you can go here - <https://emn178.github.io/online-tools/sha256.html> to get the hash

```
1> EXEC CreateRestaurant 'name', 1234567890, '811b1c6e833b6304bf764f9c6bdf6892acbcdca09d3c796d92ddc387c3186c66', '3557110889274958', '186cefd367594e9a';
2> go

(1 rows affected)

(1 rows affected)

(1 rows affected)

(1 rows affected)
1>
```

note: The password and email will be nothing.

restaurant account login:

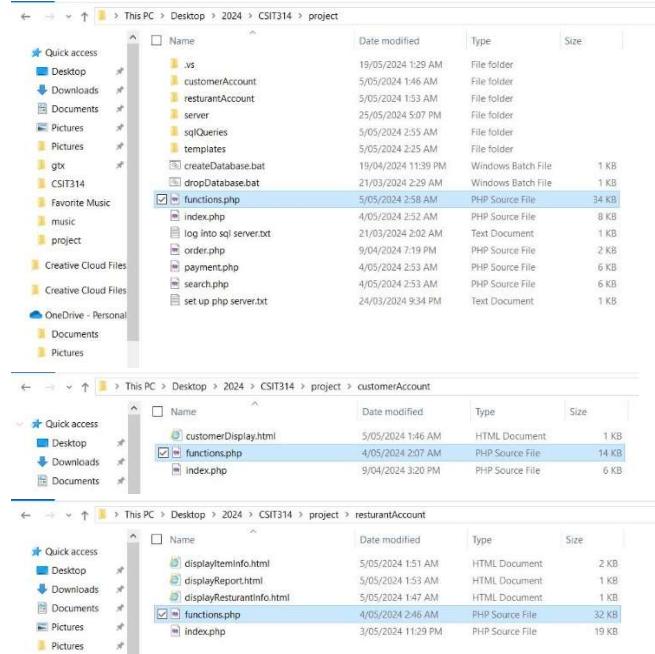
email

password

Sign in

Configuring PHP files

1. To change the location of the sql server in the php project find every function.php file in project at the website directory, the customerAccount directory and the restaurant account directory.



2. Open the files with notepad and scroll down to the bottom function `connectToDatabase()` and change the `$servername` attribute to equal to your machineAddress/SQLInstance.

The image shows a Notepad window with the file 'functions.php' open. The code contains several functions and a database connection block. The relevant part for configuration is the `connectToDatabase()` function, which is highlighted in blue. The code within this function sets the `$servername` variable to the value `LAPTOP-MN48RQJD\SQL2024X`.

```
functions.php - Notepad
File Edit Format View Help
$rating = number_format($rating, 2);

if($review == '') $review == NULL;

$stmt = "INSERT INTO ItemReview VALUES(?, ?, ?, ?);";
$params = array(&$amp;ID, &$name, &$review, &$rating);
if(!stmt = sqlsrv_prepare($conn, $stmt, $params)) echo 'Query Errr';
if(!sqlsrv_execute($stmt)) echo 'data base error: '.print_r(sqlsrv_errors());
sqlsrv_close($conn);
}

function connectToDatabase() {
    $servername = "LAPTOP-MN48RQJD\SQL2024X";
    $database = "RESTURANTS";
    $uid = "readitems";
    $pass = "";
}

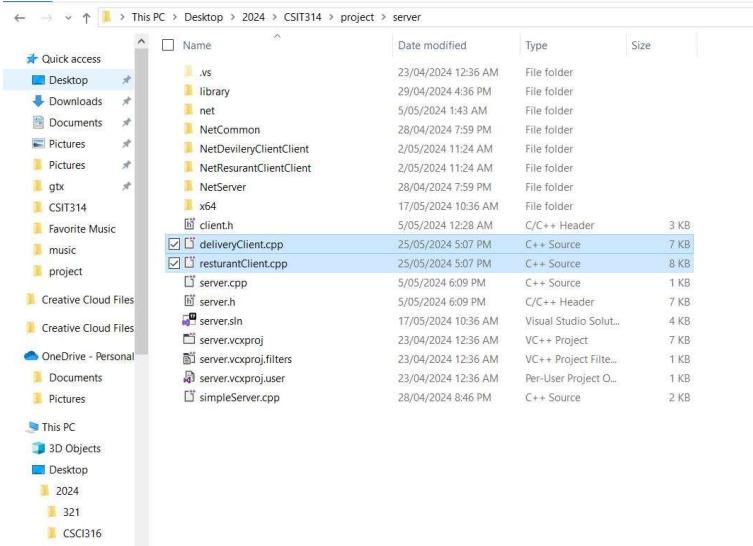
$connection = [
    "Database" => $database,
    "Uid" => $uid,
    "Pwd" => $pass
];

$conn = sqlsrv_connect($servername, $connection);
if(!$conn) die(print_r(sqlsrv_errors(), true));
else return $conn;
}
?>
```

function connectToDatabase() {
 \$servername = "LAPTOP-MN48RQJD\SQL2024X";
 \$database = "RESTURANTS";
 \$uid = "readitems";
 \$pass = "";

Configuring C++ Server and applications

1. To change the ip address of the clients from the server open the deliveryClient.cpp file and the restaurantClient.cpp file and at the top change the ip address.



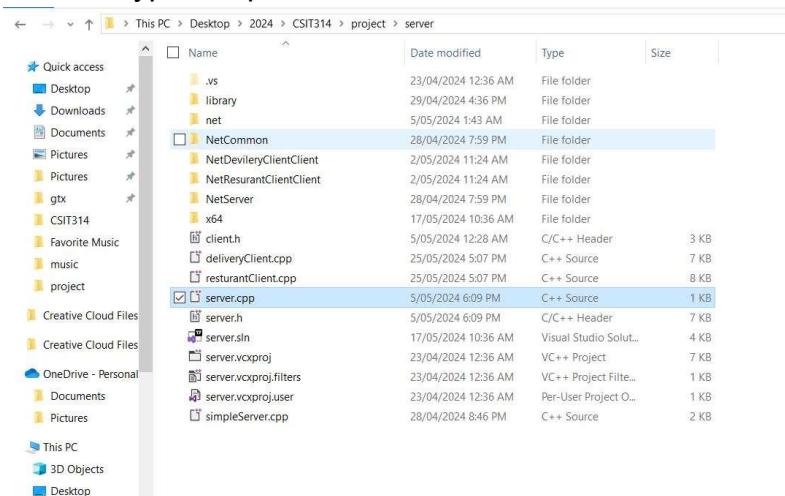
deliveryClient.cpp - Notepad

```
#include "client.h"

static int ID = -1;
static int port = 60000;
static const char address[] = "127.0.0.1";

void formatsOrderContition(CustomClient* c)
{
    wprintf(L"COMMAND>");
    char input[INPUT_SIZE];
    fgets(input, INPUT_SIZE, stdin);
    if (compare(input, "help\n", 0, 4))
    {
        wprintf(L"LIST OF COMMANDS\n");
        wprintf(L" type 'exit' to exit.\n");
        wprintf(L" type 'help' to get list of commands.\n");
        wprintf(L" type 'show' to get order Details.\n");
        wprintf(L" type 'show restaurant' to get address ar
wprintf(L" type 'show customer' to get address an
wprintf(L" two 'update ArrivalTime ArrivalTime' +
```

2. To change the port of the server open the server.cpp file and in the server() function type the port.



```

server.cpp - Notepad
File Edit Format View Help
#include "server.h"

int main(int argc, char** argv)
{
    CustomServer server(50000);
    server.start();

    if (!server.DBconnect(argc, argv)) wprintf(L"Cannot Con
    else if (!server.DBuseResturnt()) wprintf(L"Cannot Conn
    else wprintf(L"Connected to database\n");

    while (1)
    {
        server.Update(-1, true);
    }

    system("pause");
}

return 0;
}

```

Note: on the deliveryClient.cpp file and the resturantClient.cpp file the port must be the same as the server.cpp file.

```

server.cpp - Notepad
File Edit Format View Help
#include "server.h"

int main(int argc, char** argv)
{
    CustomServer server(60000);
    server.start();

    if (!server.DBconnect(argc, argv)) wprintf(L"Cannot Con
    else if (!server.DBuseResturnt()) wprintf(L"Cannot Conn
    else wprintf(L"Connected to database\n");

    while (1)
    {
        server.Update(-1, true);
    }

    system("pause");
}

return 0;
}

```

Rules

- Orders can only be refunded when the order status is either processed or cooking,
- Order status is linear and cannot be reversed,
- Restaurants and delivery drivers cannot update the delivery time if order status is completed or canceled,
- Customer cannot buy if nothing is in the cart,
- All orders are cleared at 12:00am and cannot be changed,
- Once a customer makes a review they cannot delete it,
- Once a customer requests a refund the refund is done immediately and cannot be revoked.
- All emails in the database have to be unique.
- There are only 6 food categories, they are drinks, dessert, entree, main, kids, specials and are unchangeable.
- The ratings are from 0 – 5 and are unchangeable.
- There are 3 dietary categories they are vegan, vegetarian and gluten free and is unchangeable.
- All passwords are hashed so you can't see them, if a customer or restaurant forgets their password it is unreachable, you will need to update the hashed password on that restaurant account. To do so log into the SQL server like step 3 on page 39 and run the command below with "go" to run the query.

```
1> UPDATE RestaurantAccountDetails SET Hashpassword = '811b1c6e833b6304bf764f9c6bd6892acbcdca09d3c796d92dc387c3186c66', salt = '3557110889274958', pepper = '186cefd367594e9a' WHERE RestaurantID = 0;
2> go
(1 rows affected)
1>
```

If it is a customer account change the “RestaurantAccountDetails” in the query to “CustomerAccountDetails”

- The payment type for members is only monthly or yearly and cannot be changed.
- Non member customers who purchase orders get dropped out of the database at 12:00am.
- The notes are a maximum of 256 characters, if a customer writes more than 256 characters it will be cut off for the restaurant and the delivery driver and cannot be changed.
- The item description is a maximum of 256 characters, if a restaurant edits their description with more than 256 characters it will get cut off for the customer viewing.
- All phone numbers are 10 characters long so can only be Australian phone numbers.
- The price for items and total item costs for orders/payments cannot be more than \$999, 999.
- Discounts cannot be equal to 1 (meaning 100% off).

- The discounts for members are:
 - Silver: 5% off
 - Gold: 10% off
 - Platinum: 20% off

You can edit these values in the function.php file in the website directory where the \$discount attributes are in the if statements

The screenshot shows a Windows File Explorer window and two Notepad windows. The File Explorer window displays a directory structure under 'This PC > Desktop > 2024 > CSIT314 > project'. Inside the 'project' folder, there are several files and folders, with 'functions.php' selected and highlighted.

The left Notepad window shows the full content of 'functions.php':

```

File Edit Format View Help
return number_format($distance, 2);
}

function calculateMembershipDiscount($ID) {
    $conn = connectTodatabase();
    $sql = "SELECT type FROM Membership WHERE customerID = ?";
    $param = array(&$ID);
    if(!$stmt = sqlsrv_prepare($conn, $sql, $param)) echo 'Query Errc
if(!$sqlsrv_execute($stmt)) echo 'data base error: '.print_r($sqlsr
    $discount = 0;
    try {
        if($obj = sqlsrv_fetch_array($stmt, SQLSRV_FETCH_ASSOC))
        {
            if($obj['type'] == 'silver') $discount = 5;
            else if($obj['type'] == 'gold') $discount = 10;
            else if($obj['type'] == 'platinum') $discount = 20;
            else $discount = 0;
        }
    } catch(Exception $e) { echo 'data base error: '. $e; }
    sqlsrv_free_stmt($stmt);
    return $discount;
}
sqlsrv_close($conn);

function displayOrder() {
    $conn = connectTodatabase();
    // code for displaying order
}

```

The right Notepad window shows the same file with a portion of the code highlighted in blue, specifically the discount calculation logic:

```

function calculateMembershipDiscount($ID) {
    $conn = connectTodatabase();
    $sql = "SELECT type FROM Membership WHERE customerID = ?";
    $param = array(&$ID);
    if(!$stmt = sqlsrv_prepare($conn, $sql, $param)) echo 'Query Errc
if(!$sqlsrv_execute($stmt)) echo 'data base error: '.print_r($sqlsr
    $discount = 0;
    try {
        if($obj = sqlsrv_fetch_array($stmt, SQLSRV_FETCH_ASSOC))
        {
            if($obj['type'] == 'silver') $discount = 5;
            else if($obj['type'] == 'gold') $discount = 10;
            else if($obj['type'] == 'platinum') $discount = 20;
            else $discount = 0;
        }
    } catch(Exception $e) { echo 'data base error: '. $e; }
    sqlsrv_free_stmt($stmt);
    return $discount;
}
sqlsrv_close($conn);

function displayOrder() {
    $conn = connectTodatabase();
    // code for displaying order
}

```

System requirements

Server

- 1 GHz processor or faster 32-bit or 64-bit system
- 1 GB of RAM minimum
- 5 GB of Hard drive space available
- Windows 10

Applications

- 1 GHz processor or faster 32-bit or 64-bit system
- 256 MB of RAM minimum
- 1 GB of Hard drive space available
- Windows 10

Application and programming levels tested on

- C++ 17
- Php 8.3
- HTML5
- TSQL 2019
- Visual Studio 2022