

Full Stack Guide (Angular and C#)

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Before You Read:

This document contains a list of the basic and more useful tutorials and notes that we accumulated throughout the project. However, this document is by no means comprehensive. I would suggest that you really spend time learning the languages and frameworks used for this project if you can afford to. This is a fairly complex project made by five people over a semester.

Installs

Tools Used

Jira - (Task Management System)

Professional sprint planning and tracking software that will let us create stories and manage our backlog / updates on stories remotely rather than just leaving update messages. It allows a team to mark stories as in progress, assign stories to different people, create story points, create groups for backlogs and sprints, etc.

Raise a feature request for Atlassian products

Create and track feedback for Atlassian products


 <https://jira.atlassian.com/>

GitKraken - (Source Control System)

GitKraken is a GitHub tracking software that makes it extremely easy to keep track of branches, commits, and allows you to stash changes without committing them. It is a drag and drop implementation of GitHub.

Try GitKraken Free | Download the GitKraken Git Client

Try GitKraken free! Download the GitKraken Client, now with Git GUI and CLI, free. The 7-day GitKraken Pro free trial includes access to private repos.

 <https://www.gitkraken.com/git-client/try-free>




Angular 2 Typescript (Frontend)

Angular 2 is a framework for building web or mobile applications in HTML and Javascript or Typescript. We used this for the front end of the website with visual studio code.


Angular

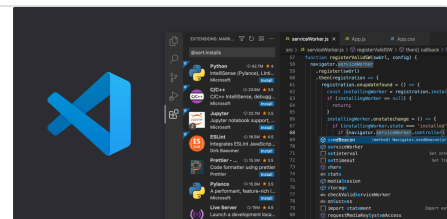
Angular is a platform for building mobile and desktop web applications. Join the community of millions of developers who build compelling user interfaces with Angular.

 <https://angular.io/start>

Visual Studio Code - Code Editing. Redefined

Visual Studio Code is a code editor redefined and optimized for building and debugging modern web and cloud applications. Visual Studio Code is free and available on your favorite platform - Linux, macOS, and Windows.

 <https://code.visualstudio.com/>




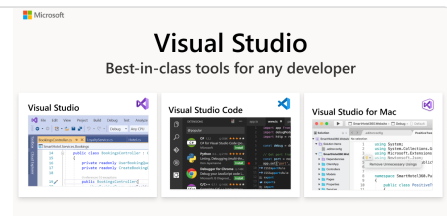
C# (Backend)

We used a C# back end that handles requests from the front end by routing them to controllers, which send requests to an SQL database. We used this with visual studios because it has built in database functionality

Visual Studio: IDE and Code Editor for Software Developers and Teams

Visual Studio dev tools & services make app development easy for any developer, on any platform & language. Develop with our code editor or IDE anywhere for free.

 <https://visualstudio.microsoft.com/>



SQLite (Database)

SQLite is a C-language library that implements a small, fast, self-contained, high-reliability, full-featured, SQL database engine. This is what we used to store and retrieve data from in the backend

Note: Whenever you change the schema for the sqlite database, you need to delete the sqlite.db database file and recreate it by running the backend. We recommend creating a helper program that will populate the database with a bunch of hard-coded test data.

Note: All users on the website should have a password of 1111 if you need to use them for testing

SQLite Home Page

Small. Fast. Reliable. Choose any three. SQLite is a C-language library that implements a small, fast, self-contained, high-reliability, full-featured, SQL database engine. SQLite is the most used database engine in the world. SQLite is built into all mobile phones and most



<https://www.sqlite.org/index.html>



Node Js (Package Manager)

For our project, we used Node Package Manager from nodejs

In order to run npm and ng commands from the VS Code terminal (on Windows, at least) you have to go into Settings >> Update & Security >> For developers >> scroll to PowerShell, and check "change execution policy to allow local PowerShell...."

Node.js

Node.js® is a JavaScript runtime built on Chrome's V8 JavaScript engine.



<https://nodejs.org/en/>



Package Manager Issues

Sometimes we also had to run "npm install" and/or "ng add @angular/material" [select "Pink/Blue Grey" prebuilt theme] to get rid of some of these errors

Often we would have to reinstall packages when we change branches because Angular would decide to forget that packages were actually installed.

This was done using these installations

```
npm install ngx-webstorage
npm install @angular/flex-layout
```

Angular Material

This is a useful form/assest/html tags package that makes forms play a lot nicer with Angular. reference for it is found here:

Angular Material

UI component infrastructure and Material Design components for mobile and desktop Angular web applications.

 <https://material.angular.io/>



Angular Material

UI component infrastructure and Material Design components for mobile and desktop Angular web applications.

 <https://material.angular.io/components/categories>



Calendar Component

we got our calendar component from:

<https://javascript.plainenglish.io/create-calendar-using-angular-and-bootstrap-monthly-weekly-and-daily-calendar-c441f1cb8b18>

<https://javascript.plainenglish.io/create-calendar-using-angular-and-bootstrap-monthly-weekly-and-daily-calendar-c441f1cb8b18>

Angular Documentation and Guides

We found VS Code to have the best Angular documentation:


if you come across a function that you have no idea how it works, you type it in VS code, right-click it, and hit "go to definition". That will take you to the code for the function. Hopefully the author put in documentation comments or you can read and understand the code.

Tutorials

Angular is very weird and somewhat obtuse if you are not use to web development and or newer frameworks like React. We highly recommend working your way through this tutorial to get a little used to angular code:

Angular

Angular is a platform for building mobile and desktop web applications. Join the community of millions of developers who build compelling user interfaces with Angular.


 <https://angular.io/tutorial>

Videos

Angular Crash Course

Learn the fundamentals of Angular in this project-based crash courseVideo

Sponsor:<https://www.hostinger.com/traversymedia>- Use the code TRAVERSYMEDIA for 10%...


 <https://www.youtube.com/watch?v=3dHNOWTI7H8>



Written


Angular

Angular is a platform for building mobile and desktop web applications. Join the community of millions of developers who build compelling user interfaces with Angular.

 <https://angular.io/guide/what-is-angular>

karma-firefox-launcher


Launcher for Mozilla Firefox. The easiest way is to keep karma-firefox-launcher as a devDependency in your package.json. You can simple do it by: npm install karma-firefox-launcher --save-dev You can pass list of browsers as a CLI argument too: karma start --

 <https://www.npmjs.com/package/karma-firefox-launcher>



Angular Material Menu: mat Menu example | Angular Wiki


Create beautiful menu items in Angular using material design To implement menu items in Angular we can use angular material menu module called MatMenuModule. mat-menu selector is used to display floating menu panel containing list of menu items. Steps to

 <https://www.angularjswiki.com/material/menu/>



Stub Vs Fake Vs Spy Vs Mock


In this article, you will learn about the differences between stub, fake, spy, and mock. All of these concepts are mainly used to replace the code dependencies with some alternatives so, that we can concentrate on the unit we are testing while writing in-memory tests.

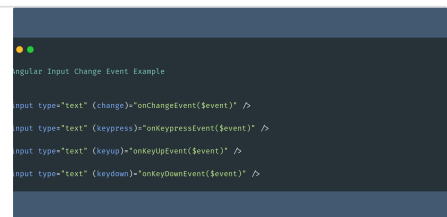
 <https://www.c-sharpcorner.com/article/stub-vs-fake-vs-spy-vs-mock/>



Angular Input Change Event Example

Hi Dev, Here, i will show you angular textbox change event example. This post will give you simple example of angular input box change event example. In this article, we will implement a angular input field change event example. i explained simply about input box


 <https://www.itsolutionstuff.com/post/angular-input-change-event-exampleexample.html>

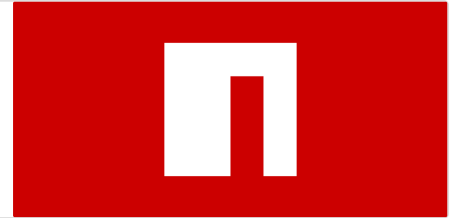


<https://www.tektutorialshub.com/angular/angular-passing-data-child-component/>

password-hash


password-hash is a node.js library to simplify use of hashed passwords. Storing passwords in plain-text is bad. This library makes the storing of passwords (and subsequent validation of) hashed passwords a bit easier. password-hash provides functions for generating a hashed

 <https://www.npmjs.com/package/password-hash>



bcrypt

A library to help you hash passwords. You can read about bcrypt in Wikipedia as well as in the following article: How To Safely Store A Password Verify that the node version you are using is a stable version; it has an even major release number.

 <https://www.npmjs.com/package/bcrypt>



C# Documentation and Guides

Unit Testing Note

backend should be run in debug mode for the unit tests to run. Backend unit tests use preprocessor directives to load a testing database rather than the "production" one.

Tutorials

Videos

ASP.NET Core Web API CRUD with Angular 11

Asp.Net Core Web API CRUD Operations with Angular 11In this .Net 5 tutorial, we have implemented ASP.NET Core 5 Web API CRUD Operations with Angular 11.The f...

 <https://www.youtube.com/watch?v=S5dzfuh3t8U>

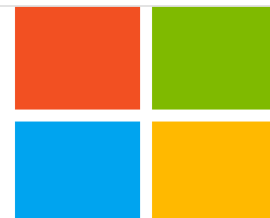


Written

C# unit test tutorial - Visual Studio (Windows)

Applies to: Visual Studio Visual Studio for Mac This article steps you through creating, running, and customizing a series of unit tests using the Microsoft unit test framework for managed code and Visual Studio Test Explorer. You start with a C# project that is under

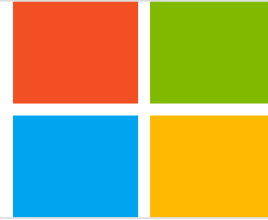
 <https://docs.microsoft.com/en-us/visualstudio/test/walkthrough-creating-and-running-unit-tests-for-managed-code?view=vs-2022>



Documentation comments - C# language specification


C# provides a mechanism for programmers to document their code using a comment syntax that contains XML text. In source code files, comments having a certain form can be used to direct a tool to produce XML from those comments and the source code elements, which

 <https://docs.microsoft.com/en-us/dotnet/csharp/language-reference/language-specification/documentation-comments>



Unit Testing with .NET Core ILogger

An effective logging system is essential for application monitoring and analysis. .NET Core supports a logging API that works with a variety of built-in and third-party logging providers, such as the Console provider, the Azure Application Insights provider, Serilog,


 <https://codeburst.io/unit-testing-with-net-core-ILogger-t-e8c16c503a80>

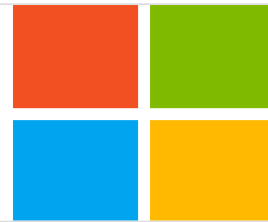
.NET Core
Unit Testing
ILogger<T>



Isolate your app with shims (unit testing) - Visual Studio (Windows)

Applies to: Visual Studio Visual Studio for Mac Shim types are one of two technologies that the Microsoft Fakes Framework uses to let you isolate components under test from the environment. Shims divert calls to specific methods to code that you write as part of your

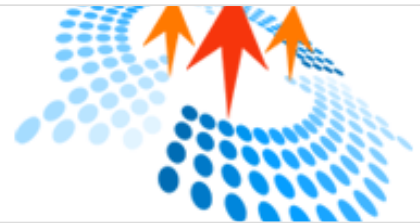
 <https://docs.microsoft.com/en-us/visualstudio/test/using-shims-to-isolate-your-application-from-other-assemblies-for-unit-testing?view=vs-2019>



Convert And Retrieve Image From Base64 Using C#

In this post, we will learn to convert and retrieve an image from base64. First, we will convert the image into base64 from a URL and second, convert the image from base64 using memory stream. The last step is to display the image in the image box using MemoryStream.

 <https://www.c-sharpcorner.com/blogs/convert-image-into-base64-and-retrieve-image-from-base64-using-c-sharp>



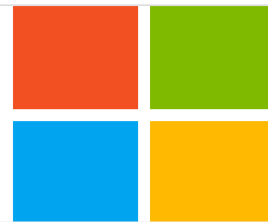
Semaphore Class (System.Threading)

```
public ref class Semaphore sealed : System::Threading::WaitHandle public sealed class
```

```
Semaphore : System.Threading.WaitHandle
```


```
[System.Runtime.InteropServices.ComVisible(false)] public sealed class Semaphore :
```

 <https://docs.microsoft.com/en-us/dotnet/api/system.threading.semaphore?view=net-6.0>



Encrypt login and password in sqlite database - SHA 256 in C#


Thanks for contributing an answer to Stack Overflow! Please be sure to answer the question. Provide details and share your research! Asking for help, clarification, or responding to other answers. Making statements based on opinion; back them up with references or

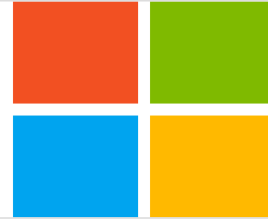
 <https://stackoverflow.com/questions/8218066/encrypt-login-and-password-in-sqlite-database-sha-256-in-c-sharp>



HashCode Struct (System)

Combines the hash code for multiple values into a single hash code. public value class
HashCode public struct HashCode type HashCode = struct Public Structure HashCode You
can use HashCode to combine multiple values (for example, fields on a structure or class)

 <https://docs.microsoft.com/en-us/dotnet/api/system.hashcode?view=net-6.0>




Other Useful links

<https://docs.microsoft.com/en-us/visualstudio/ide/class-designer/how-to-add-class-diagrams-to-projects?view=vs-2022>

classdiagram-ts - Visual Studio Marketplace


classdiagram-ts is a VSCode extension to create UML class diagram based on typescript
source files. I wrote it to help myself and people who have similar needs. I started this hobby
project when I worked in my previous job and often needed to include class diagram in

 <https://marketplace.visualstudio.com/items?itemName=AlexShen.classdiagram-ts>



Scrum Poker Online - Free Tool for Planning Poker

Set up your planning poker session in seconds. Online app to support you and your team with story point estimations.

 <https://www.scrumpoker-online.org/en/>