**Project 1: Bugzilla Search/Crawl Tool and MH Utility Tool**

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**8/30/2023**

* What is Bugzilla? Bugzilla is**a web-based general-purpose bug-tracking system and testing tool.**
* **I believe TMEIC got the free firmware and developed it on top of that.**
* **Currently, the project scope looks more like streamlining how the tool accesses the database of all the bugs ever reported.**
* **The database itself is hosted at a third-party company, if needed we could get them to dump all the data to us.**
* **From what I have understood, the previous interns were able to use an API to get the data from the database. I’m not sure what API they used since I haven’t received the codebase and documentation yet. They also got the data about the common bugs related to a specific project to plot some graphical charts that you could send to the respective project managers via Outlook.**

**Relevant Links**

* [3.3. Windows — Bugzilla 5.0.4 documentation (tmeic.com)](https://tools.tmeic.com/mh/docs/en/html/installing/windows.html)

**8/31/2023**

* We went for Lab tours under Niranjan Patel. We visited the Photovoltaic Test Lab at Cook Drive. It was truly amazing, and I learned a lot of amazing things. Each company has to get a UL Certification. TMEIC’s PV Test Lab here at Roanoke is a lab designated to test all TMEIC Drives to ensure they abide by the UL Certification. They also test the effectiveness of their drives.
* PV Grid Electric Drives usually get a lot of DC current from the solar panels; therefore, you need to convert that into AC to send it to the Grid. There is a whole level of IGBTS in either a 2 or 3-way topology which ‘chops’ the DC current and the noisy signals are filtered out. This is basically an Inverter.
* TMEIC’s Development team makes all the controller boards and the firmware for it in-house. They design and build their own custom PCBs and write their own software. These controller boards are throughout the company.
* The Lab in the basement has a test bench for every crane TMEIC has installed at a shipyard or port. This allows them to program, debug, and make software changes for the PLCs on board these massive cranes. They also maintain the old PLCs from before and interface them with the more modern systems. They are specialists in this field.

**09/01/2023**

* Notify the user the search is running and when the search is finished…success or not.
* The Project Components need to be put in a **drop-down menu** so that the user can select/deselect what they like rather than all the components being selected.
* Meet Sujit next Tuesday.

**09/05/2023**

* Obtained Project Code Base for the MH Utility Tool. The project is based on C#.
* Reading Documentation and Comments to understand the MH Project Utility Tool
* So far have a basic understanding of how it works on a High Level
* Need to figure out the scope of the Search/Crawl Tool for Bugzilla
* Bugzilla uses REST API: - **Representational State Transfer (REST)** is an architectural style that defines a set of constraints to be used for creating web services. **REST API is a way of accessing web services** in a simple and flexible way without having any processing.
* The **requests module allows you to send HTTP requests** using Python.
* The HTTP request returns a Response Object with all the response data (content, encoding, status, etc
* WebClient is a class in C# that **provides a simple way to make HTTP requests to web services or website**s. It's part of the System.Net namespace. You can use it to download data from a URL, upload data to a server, or perform various other HTTP operations. Here's a basic overview of how to use Web Client
* A screenshot of a white box

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**Relevant Links**

* [C# Access Strings (w3schools.com)](https://www.w3schools.com/cs/cs_strings_access.php)
* [WebClient Class (System.Net) | Microsoft Learn](https://learn.microsoft.com/en-us/dotnet/api/system.net.webclient?view=net-7.0)
* [How to create a drop down menu in WinForms and C# - Stack Overflow](https://stackoverflow.com/questions/27723668/how-to-create-a-drop-down-menu-in-winforms-and-c-sharp)
* [javascript - How can I extract certain attributes from a JSON file - Stack Overflow](https://stackoverflow.com/questions/55252338/how-can-i-extract-certain-attributes-from-a-json-file)
* [Working with JSON - Learn web development | MDN (mozilla.org)](https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Objects/JSON)
* [Python Requests Tutorial - GeeksforGeeks](https://www.geeksforgeeks.org/python-requests-tutorial/)
* [REST API Introduction - GeeksforGeeks](https://www.geeksforgeeks.org/rest-api-introduction/)

**09/06/2023**

* String objects are immutable: they can't be changed after they've been created. All of the String methods and C# operators that appear to modify a string actually return the results in a new string object.
* Have a Dynamic Array that increases its size whenever a new object is selected and decreases the size whenever the object is deselected on the drop-down menu. Use a for loop to iterate through this Dynamic Array and send it to the Bugzilla website using the protocols that are already in place. Will need some string manipulation.

A computer screen shot of a program

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1. **[STAThread]**: This attribute indicates that the application should run in a single-threaded apartment (STA) mode. In most Windows Forms applications, this attribute is necessary because the Windows Forms framework requires an STA thread to work properly.
2. **static void Main()**: This is the entry point of your application. When you run your program, execution begins here.
3. Application.EnableVisualStyles(): This method enables visual styles for your Windows Forms application. It ensures that your application's controls and user interface elements use the native Windows theme and appearance.
4. **Application.SetCompatibleTextRenderingDefault(false):** This method sets the default text rendering to be compatible with GDI (Graphics Device Interface). It's typically set to false because using GDI+ text rendering provides better quality text rendering.
5. **Application.Run(new MH\_tool())**: This line starts your Windows Forms application by creating an instance of your main form, which is named MH\_tool in this case. The Application.Run method starts the application message loop, which is responsible for handling user input and managing the graphical user interface.

**09/07/2023**

* Generating new SSH keys for setting up authentication for github can be tricky:- 1) Generate new Key $ ssh-keygen -t ed25519 -C "aniruddh.chauhan.2002@gmail.com" in Git Bash. 2) cd into .ssh/ directory and use notepad to view the id\_ed25519.pub, it has the ssh key that needs to be added to your Github account.
* Setting up an existing folder as a git repository, make a new repo on Github.com, get the ssh key authentication link:- 1) cd into the directory for that existing folder 2) git init 3) git add -A 4) git commit -m “initial commt” 5) git branch -m main 6) git remote add origin [git@github.com:sammy/my-new-project.git](mailto:git@github.com:sammy/my-new-project.git) 7) git push -u -f origin main
* make sure you have the identiy set using git global config
* For example, if your [repository was configured on Github](https://devconnected.com/how-to-setup-ssh-keys-on-github/), you would use the following command to change your remote.
* $ git remote set-url origin git@github.com:user/repository.git
* Winforms on C# sharp is pretty cool. It has the option to have the winform pre generated..basically boilree plate code. And then you can add whatever you want..for example IF YOU HAVE A WINFORM called Form. It will generate a Form.cs, Form.Designer.cs and Program.cs. 1) Form.cs is actually where you have your event handlers and basically the code that dictates what the app does. 2) Form.Designer.cs is where the winform GUI is actually generated 3) Program.cs is the main entry of the program.
* A screenshot of a computer program

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Relevant links

* [Generating a new SSH key and adding it to the ssh-agent - GitHub Docs](https://docs.github.com/en/authentication/connecting-to-github-with-ssh/generating-a-new-ssh-key-and-adding-it-to-the-ssh-agent)
* [Error: Permission denied (publickey) - GitHub Docs](https://docs.github.com/en/authentication/troubleshooting-ssh/error-permission-denied-publickey)
* [github - git: error: src refspec main does not match any - Stack Overflow](https://stackoverflow.com/questions/70179719/git-error-src-refspec-main-does-not-match-any)
* [How to Push an Existing Project to GitHu b | DigitalOcean](https://www.digitalocean.com/community/tutorials/how-to-push-an-existing-project-to-github)
* [Git - First-Time Git Setup (git-scm.com)](https://git-scm.com/book/en/v2/Getting-Started-First-Time-Git-Setup)
* [How To Change Git Remote Origin – devconnected](https://devconnected.com/how-to-change-git-remote-origin/)

**09/08/2023**

* Talked to Matt about Bugzilla. I got an idea for an Advanced search query script for the advanced search page on Bugzilla for TMEIC. I could basically overlap C# with the database management using python. So python for the database management and C# sharp for the Desktop management EXAMPLE:

Creating a simple GUI application in C# that uses Python as the database requires a few steps. You can use the **subprocess** module in C# to interact with Python scripts that handle database operations. Here's a basic example of how to create such an application:

1. **Create the C# GUI Application**:

First, create a C# Windows Forms Application using Visual Studio or another C# development environment. Design your user interface as per your requirements.

1. **Add a Button for Database Interaction**:

In your C# GUI, add a button or any control that will trigger the database interaction with Python.

1. **Write a Python Script for Database Operations**:

Create a Python script that performs the database operations you need. This script should accept input from your C# application, execute the necessary database queries, and return the results.

* Made a script for filtering keywords. Chat gpt gave a good overview of it. I’m modify that to suit the API linkage that I already have
* Made an example drop-down menu. This menu is the one that I would try to integrate on the main source code.
* Could potentially present both ideas to Sujit and Tim. Their feedback on this would give me better clarity about the project since it’s really open-ended.

Relevant Links

* [Read JSON file using Python - GeeksforGeeks](https://www.geeksforgeeks.org/read-json-file-using-python/)
* [How can I print specific values from a json file with python? - Stack Overflow](https://stackoverflow.com/questions/36970016/how-can-i-print-specific-values-from-a-json-file-with-python)