Team Hobby

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Appendix:

1.Introduction

1.1 Abstract

"Hobby Project Generator '' is a web application that supports browsers that runs .NET framework 5 and the upcoming .NET 6. The application finds and recommends based on the users' available tools and preferences.

1.2 Intended Audience

The application targets hobbyists who are looking for new ideas for projects to utilize their physical crafting skills.

1.3 Scope

"Hobby Project Generator" is a web application that is intended to recommend physical projects to hobbyists based on the available tools as well as their preferences. In addition, the application serves as a place for users to post personal projects with step by step guidance for others to follow.

1.4 Technical requirements

Software requirements:

- Operating System: Windows 10 64-bits, any Linux distribution 64-bits
- Web Browsers: Chrome, FireFox, Microsoft Edge
- IDE
- MySQL database

Minimum hardware requirements:

- CPU: Intel 3th Generation or AMD FX series
- 1GB RAM
- Graphics: Intel HD graphics

1.4 Non-goal

1.5 Future goals

The addition of software projects along with the addition in the set of user's preferences and skill sets to accommodate software projects. The web application also recommends projects to users based on programming languages they know such as Python, C++, C, Java, ...

Product recommendation feature where users will be presented with links to third party sites to buy tools that are required for projects.

1.6 Assumptions and Dependencies:

The operating system is assumed to be functional and stable.

2 Languages

2.1 C#

2.1.1 What is C#:

C# is a multi-paradigm programming language which supports procedural, object-oriented, functional and logic paradigms. Developed by Microsoft in the early 2000 with the purpose for general use and as an improvement from C by implement features such as automatic garbage collection

2.1.2 Why use C#

- Most web application is developed using C# due to it compatibility with the .NET framework develop by Microsoft which our team is using for our "Hobby Project Generator"
- Faster development time with a large library and high scaling capability
- Simpler, more productive and more suitable for high level programs compared to C or C++ in the expense of execution time.

2.2 ECMAScript 11+ / TypeScript 4+

2.1.1 What is ECMA 11+ / TypeScript 4+

ECMAScript is a general purpose language designed with the intention to increase interoperability between internet applications across different web browsers. ECMAScript is also known as JavaScript language. EMCAScript is used to write server applications along with Node.js.

TypeScript is a superset of ECMAScript(JavaScript) while including optional static typing as a feature. Javascript programs can also be run by Typescript much like how C programs are also valid C++ programs. Used to write server and client applications along with Node.js.

2.1.2 Why use ECMA 11+ / Typescript4+

- Interproperbility for different web applications across different browsers.
- Enhance IDE support due to static typing from Typescript to help spot common errors through Intellisense.
- Safely refactoring and renaming files.
- TypeScript interoperability with ECMAScript allows any .js file to be renamed to ".ts" file and run through the compiler.

- ECMAScirpt supports backward compatibility so that JavaScript code and syntax will also run on it.

3 Technology Stack

3.1 Backend Framework .Net 5+ / 6+

3.1.1 What is .Net Framework?

.Net frame is a standard way to build and deploy applications. It consists of two main parts which are Framework Class Library (FCL) and Common Language Runtime (CLR). FCL increases code interoperability by allowing each language to use code written in other languages available from it's library. In addition, FCL provides UI, cryptography, database access, … and more. CLR provides services such as memory management, error handling.

3.1.2 Why use .Net Framework?

- Increase interoperability between old and new applications
- .Net Framework is language dependence by supporting all data types and constructs available in other languages.
- Reduce the burden of memory management for the programmer with the CLR taking care of garbage collection on the heap using a garbage collector.
- .Net framework supports languages with static typing as well as dynamic typing languages such as Python.

Windows Pro 10 9042.11165

Windows Home 10

Version   10.0.19043 Build 19043

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