

Capstone Project Plan

I. Concept:

I want to develop an application (API with Vue frontend) that can be used to track tooling information for CNC mills. Many machine tools utilize inserts which require specific screws, and all tools need to be installed in an appropriate holder for the machine in which it is being used. While the information is available from vendors, differing grades and variants can make it difficult to know exactly which items you are looking for without already knowing multiple part numbers. Machine shops may have any number of tools installed in any number of machines. The same tool could be utilized in multiple machines, but depending on the spindle taper it could require a different style holder.

All these factors combined make it a difficult task to keep track of tooling. My goal is for my application to be able to create tool assemblies and machines, and create relationships between those entities. If possible, I would like for the application to be able to create a book with a sheet representing each tool in PDF or other suitable format. An even further stretch goal is for the database to be able to store (references) to 3D models of the tools to facilitate using a tooling library with separate CAM software for machine programming.

II. Target Audience:

Small to medium sized machine shops. I deal with these problems daily so I know what I would like to get out of the application, but I have also reached out to some peers that work elsewhere to get feedback and ideas on the concept.

III. Goals:

Once the project is complete for Code:You, I hope that I can get some real users out in the wild and solicit feedback from them to continue adding features and functionality. I would like for it to be a polished project that I could eventually share with potential employers. If it proves to be useful to enough people, it would be really cool to add a small subscription fee for commercial use.

IV. Minimum features:

- Create Machines
- Create tool assemblies
 - Assign assembly to a machine
- (stretch) Output Machine Tooling Report *.md file
- (stretch) Store 3D models of tools in the library

