PACCAR WinCodes
Computer Science
Team 9

Project Overview

Background:
WinCodes is a tool that is used at Paccar to view information about all parts and options that can go on a truck. Each part that goes on a truck, from an engine to a side mirror, is assigned a sales code. Paccar employees can use WinCodes to search for these parts and find additional information about each of these parts.

Starting State:
WinCodes is a desktop application that uses an outdated language called Modula Two. The searching functionality includes a string search, a sales code range search, and a simple category search. Users are not able to search for an item with particular characteristics (i.e., a tire with a certain diameter). The application uses flat files to retrieve information and display it to the user. These flat files are updated daily using a Paccar database.

Project Goal:
Our goal was to make WinCodes more extensible and more user-friendly. Making the application more extensible would allow Paccar to easily maintain and update WinCodes when needed. Making the application more user-friendly would provide a more intuitive user interface and make searching more robust.

Implementation:
To build the new application, we used the .Net Framework. Paccar IT uses this same framework. We also developed the application for the web, so users could run it on a browser, instead of having to install an application on their local machine. The application uses Paccar databases directly, so there is no need to update flat files and all information displayed is up-to-date. Finally, our application includes an improved category search and allows users to search for items using item characteristics (i.e., the user can search for a tire based on diameter).

Our design (shown above) uses an N-tier architecture. This means that each tier or layer only communicates with layers adjacent layers. For example, the User Interface Logic would communicate with the User Interface and the Intermediate Layer, but would not communicate directly with the Database Communicator. This allows the software to be simpler and more extensible. For example, all of the information drawn from the Database could be saved in the Intermediate Layer and a separate UI could be used to display information to the user.

CONCLUSIONS
Overall, the project was a success. We met the goals we set at the beginning of the project which were updating WinCodes and improving search functionality. The new version of WinCodes offers more advanced searching capabilities, is written using the .Net Framework, is a web application, and uses databases to retrieve information instead of flat files. While there are still more features that can be added to WinCodes, the product we delivered is a vast improvement over what was in use at Paccar.

About Paccar
Paccar is a manufacturer of Kenworth and Peterbilt trucks. All trucks manufactured by Paccar are premium quality and are custom-built to each customer's individual needs and wants.

Our project specifically worked with Kenworth, a division of Paccar. Kenworth manufactures trucks throughout the world, in the U.S., Mexico, Canada, and Australia.

Offering premium, custom-built trucks to every customer means that there are different options on nearly every part of the truck. This means customers can customize anything from basic things like type of engine or transmission, to smaller things, such as gas tank location or mirror style. While it may be simpler and cheaper to offer a few different options, Paccar prides itself on its quality and customization.

Paccar is a Fortune 500 company, and is one of the largest truck manufacturers in the world.