WASHINGTON STATE UNIVERSITY
VANCOUVER

Software Requirements Specification

CS 320

Bayerische Spezifikation

Version 1

Prepared by

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Revisions

Version	Primary Author(s)	Description of Version	Date Completed
1	McGuire Croes Colton Berry Quinn Croes	First upgrade	11/5/2020

1 Introduction

The project BMW Information is a formal site regarding the specifications of BMW vehicles. In this project, values of MPH, curb-weight, HP, and other attributes of the vehicles will be listed. The project will include the functionality of the user to compare different attributes of vehicles listed in the project.

1.1 Document Purpose

The purpose of this project is to provide the public with reliable information regarding the attributes of BMW vehicles. The ability to compare different aspects of these vehicles has not been created in a concise way. The Big Three aim to combat this issue by creating the project known as *Bayerische Spezifikation*. This project will inform the user of listed specifications of certain vehicles made by BMW.

All Vehicle information will be listed in subsections, by dividing the car into multiple sections. This will allow users to fine tune their selections with greater ease. If the user wants to search for a certain part, internal functionality will allow comparisons to be made with other vehicles and parts. The system should not be used as a BMW blueprint model, only as a reference site for schematics and data about the vehicles.

1.2 Product Scope

Bayerische Spezifikation will provide users with the benefit of comparing different aspects of the vehicles and listing the specifications of the vehicles. The compare function will allow the user to select certain data from the specified vehicle, the system will record their selection and push the data to the compare function. The user will then be allowed to make an additional selection, this will prompt the software to list both data sets together for comparison.

This will provide the public with the ability to compare different specifications of BMW vehicles. The object and goal of *Bayerische Spezifikation* is to clearly list BMW vehicle data into a format that is simple, concise, and informative for the user. With this completed, the functionality of the program will give the user the ability to select and compare various parts of the vehicle. While current sites provide vast amounts of detail and data about certain BMW models, they lack the ability to store and compare data. This issue will be solved with the completion of *Bayerische Spezifikation.*

1.3 Intended Audience and Document Overview

The audience of this document is intended to be BMW enthusiasts, BMW owners looking for comparable parts on their cars or donor cars, and the immediate professor looking over this project.

1. BMW enthusiasts look for the history of cars and the production timelines of older BMW vehicles. They are particularly interested in the concise formatting of information that is easy to read and search through.

2. BMW owners interact with the compare functionality of the system to search for part commonalities between cars to find potential donor cars. They need access to all vehicle specifications between models and chassis. Parts used in their specific car can be found in other similar cars.

3. The overseeing professor does not need to directly interact with the system for information but does test the compare functionality and system layout to make sure project specifications are being met for this class and the program is complex enough to be challenging to the developers.

This SRS document can be read from top down in order of the listed sections. No complex acronyms or technical words are used in the immediate sections under the title page that need explanation or descriptions.

1.4 Definitions, Acronyms and Abbreviations

N/A

1.5 Document Conventions

All context included in this document, satisfies the current industry standard of language and textual documentation. No abbreviations, italics, bolds, or underlines are meant to change the meaning or value of the words listed.
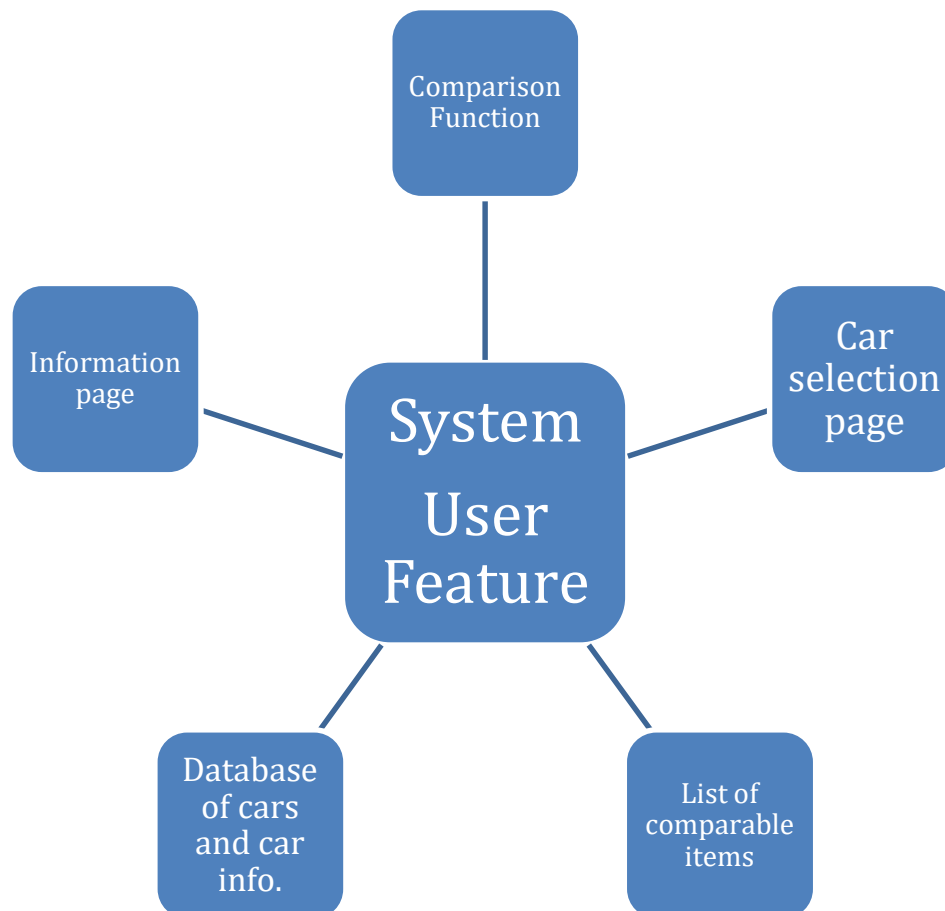
1.6 References and Acknowledgments

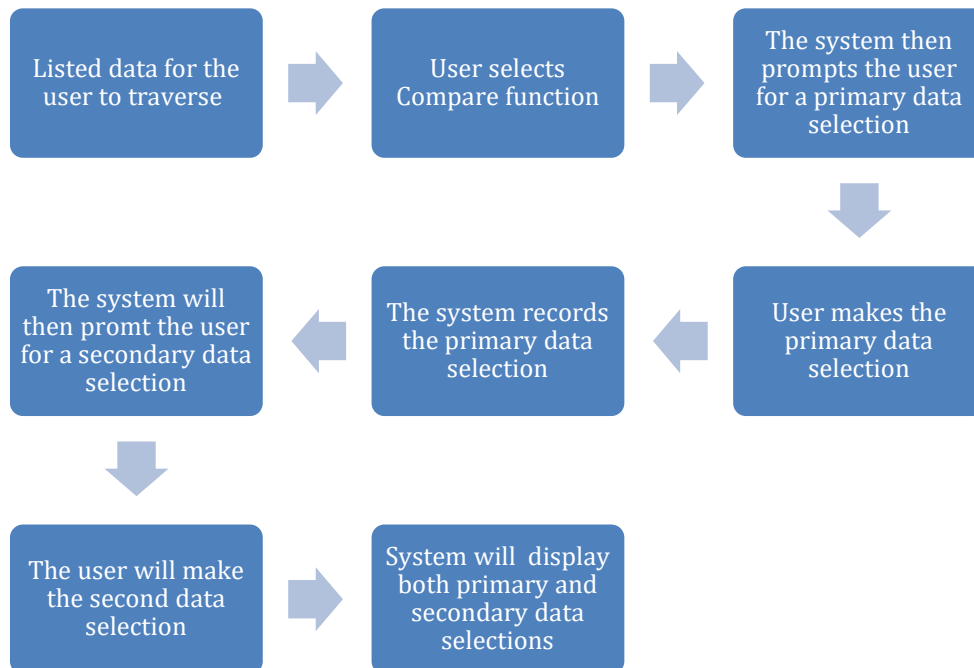**N/A**

2 Overall Description

2.1 Product Perspective

The project *Bayerische Spezifikation* is a self-contained product. Within the project the functionality of the compare function has not been created and released to the public. With the BMW vehicle data listed, *Bayerische Spezifikation* will list information similar to a product catalogue or encyclopedia with additional compare functionality built in. The project perspective is to allow the user to view accurate and detail information on BMW vehicles, with the addition of a compare function. This will allow the user to compare any part one vehicle to another within the site.

Comparison Function

Information page

Car selection page

System User Feature

Database of cars and car info.

List of comparable items

2.2 Product Functionality

The site will include the vehicles specifications and details about certain aspects of the car. The user can switch between pages of the site and view the data. At any point the user may hit the compare button or select the function to compare. This will prompt the user to make an initial selection. The system will store this data the user selected. The site will then prompt the user to make a second selection. Once the second selection is made, a dialogue box will appear with both sets of data from the users two selections.

Listed data for the user to traverse	User selects Compare function	The system then prompts the user for a primary data selection
The system will then promt the user for a secondary data selection	The system records the primary data selection	User makes the primary data selection
The user will make the second data selection	System will display both primary and secondary data selections	

2.3 Users and Characteristics

The site will be catered to those wanting information on certain BMW made vehicles. Anticipation varies from the skilled mechanic to those wanting simple information the vehicle and model of their choice. The site will not include any functionality that will be for any one particular user. The primary users who will be satisfied will be those who view the site. The site will function and display the same information, regardless of which user is accessing the site.

2.4 Operating Environment

The webapp should work on these browsers:
- Edge
- Chrome
- Safari
- Firefox

2.5 Design and Implementation Constraints

None of the developers have a well running Apple computer so testing on Safari will be an issue. At the beginning of the project none of us really know how to create a webapp. We can create a java file that can look at two separate sets of data and show them, and we can create a simple webfront. However, we don't know at the start of this project how to connect the two. With schooling and research this will be learned and accomplished by the end of the project.

2.6 User Documentation

The site will include a 'Contact Us' selection that will direct the user to a separate page. This page will allow the user to send a message to the developers with any questions, comments or concerns with the site.

We will be supplying a detailed README file that describes everything the user and other developers need. In the README we will describe how to launch the webapp. There will also be a section for the user on detailed instructions on how to use our web app. Any further documentation will be available via link included within the site.

2.7 Assumptions and Dependencies

The assumed factors when creating *Bayerische Spezifikation* will be tied to the amount of comparisons that the user will want. The system will be limited to two comparisons and will throw an error if more than two comparisons are made.

We are assuming that the dependencies and libraries that we are using will continue to work in the supported browsers for the future to come. In the same vein we are also assuming that javascript and java will continue to work with the supported browsers.

3 Specific Requirements

3.1 External Interface Requirements

3.1.1 User Interfaces

The user interface for our website will open with an about page followed beneath by a section which lists every BMW from the years 1970 – 2020 (temporary). Each vehicle chassis number will be listed along with a photo of that model car underneath the lettering. When clicking on a chassis, you will be taken to a different UI of that specific car where a larger image will be shown initially and under the picture will be the listed specs of that car. The data we will include about each car is not completely settled on; they may be dynamic based on what year the car is. A comparison button will be at the top of the screen at all times for the user to select features they would like to compare between cars. A check box of the specific stat that is to be compared will be next to a list of stats that the user can select. Following that selection, choose the cars they wish to compare that stat between. The compare screen will show the pictures of the cars side by side and their stats on their respective sides. The site will also include a search function and a filter function where users can search for specific parts such as engines, transmission, manual or automatic and also filter by horsepower, weight or year of production.

3.1.2 Hardware Interfaces

- **Display Monitor**: The web app will be viewed on a display monitor using the HTML, CSS, JavaScript languages as the main libraries and languages to output onto the screen.
- **Input Devices**: The keyboard and mouse are the two input devices. The keyboard will be used to type the users search query. Mouse input is used for clicking through the different pages on the webapp

3.1.3 Software Interfaces

- **Database**: The information on the cars will be stored into a database
- **Operating Systems**: The operating systems will include Windows, MacOS, and Linux and the webapp will be interfacing with through the internet browser
- **Internet Browsers**: The different internet browsers supported and interfacing with Edge, Google Chrome, Safari, Firefox
- **Libraries**: Node.js is the main JavaScript library will be used in the webapp

3.1.4 Communications Interfaces

This project will be using the internet to connect with the user. The webapp will be using HTTP protocol to interact with the internet. The user will then use an internet browser to interact with the webapp. Aside from basic internet access, the site will not need to have an additional security. Any further communications from the site will be a link including the developers' emails.

3.2 Functional Requirements

The functional areas are: Compare, Search, Filter, and Specific Car Data. The compare function contains a system that can filter the data of all cars down to what the user wants. That data is then filtered down even more to just what specific cars the user wants to compare between. As an example, selecting the check boxes for horsepower, wheel size, and weight, then pressing done. The next selection will be picking what cars you want to compare these stats between. The search function contains a simple search requirement where it will crawl through the data and pick the data categories the user is searching for. The search can be by specific requirement or by general data category. The filter function contains a filtering of data option which will narrow down search results further by category and by specific requirements by the user. Specific car data will retrieve the car data of a selected car and give all available information that database has about that car.

3.3 Behavior Requirements

3.3.1 Use Case View

The user in figure 1, is the user who will interact with the system and they will use the various functions. The search cars function will allow users to lookup different cars in the system. The compare cars function will give the users the option to look at the components of two different cars at the same time. Lastly the view cars function allows the user to look at the specific car that the user has selected
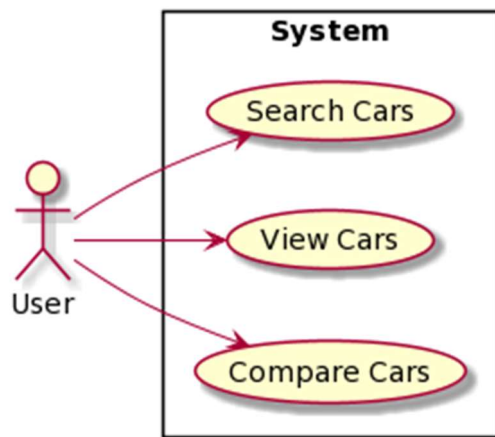
Figure 1

4 Other Non-functional Requirements

4.1 Performance Requirements

- Search and filter functions should not take more than 5 seconds to retrieve data and show the webpage to the user.
- Compare function should not take more than 10 seconds to retrieve data and show the webpage to the user.
- Specific car data should not take more than 5 seconds to retrieve data and show the webpage.
- Car images and featured images should not take more than 10 seconds to render and display.

  Displays and text should be kept to a minimum to save on resources for retrieving data and information. Pictures should be used sparingly to save on resources and should not slow the display of webpages. Data should be prioritized loading before images in order to display webpages faster

4.2 Safety and Security Requirements

The level of security for the site will be little to none. All information listed on the site will be available to the public including the comparison function. No information is needed by the site, therefore eliminating the need for any security requirements. In addition the site does not require any information form the user, therefore eliminating any possible need for security features to be implemented

4.3 Software Quality Attributes

The software will be flexible and available across a variety of platforms. One of the key aspects of the site being that it is accessible on various platforms such as phones, tablets, and computers. The site will contain the ability for recommendations and changes wanted by the user. This enables the site to be reusable and adaptable. The site will contain vast information on different vehicles made by BMW, this allows the site to be flexible to future changes.

5 Other Requirements

N/A

Appendix A – Data Dictionary

<Data dictionary is used to track all the different variables, states and functional requirements that you described in your document. Make sure to include the complete list of all constants, state variables (and their possible states), inputs and outputs in a table. In the table, include the description of these items as well as all related operations and requirements.>

N/A

Appendix B - Group Log

<Please include here all the minutes from your group meetings, your group activities, and any other relevant information that will assist the Teaching Assistant to determine the effort put forth to produce this document>

Date	Objective	Duration(hr:min)
10/20/2020	Initial set up, and project organization. Planning future course work as well as project work. Initial redesign of project name, and layout.	1:26
10/23/2020	Finishing sections 1 to sections 2. Adding additional information to previously answered questions. Revising, reviewing, and editing	2:30
10/30/20	Finishing section 2 and beginning 3.	1:30
11/3/20	Completing section 3 and completing section 4	2:00
11/5/20	Completing and editing document for finalization	0:45
11/5/20	Final revisions and editing to the document	2:16