Online Automobile Configurator

Version 1.0.0

Software Requirements Specification

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**1.0. Introduction**

***1.1. Purpose***

The purpose of this document is to present a detailed description of the Online Automobile Configurator. It will explain the purpose and features of the configurator, the interfaces, what the configurator will do, the constraints under which it must operate and how the system will react to external stimuli. This document is intended for the developers and stakeholders and will be available for review by the Software University.

***1.2. Scope of Project***

This software system will be an Online Automobile Configurator for a global cars tuner. The configurator will be designed to allow the tuner’s clients to customize their automobiles online and receive an estimate of time and cost for the aftermarket work done by the tuner. This configurator will allow the user to have the comfort of designing the new looks of their automobile from home. Furthermore they will know how much the new aftermarket parts will cost, how much time it will require for the parts to be installed on their automobile, how much will the tuner charge for the work and how will the finished product look like.  
 The user will be able to select the make and model of their automobile. From there the user will have a wide choice of body parts such as: front bumpers, rear bumpers, side skirts, hoods, spoilers, mirrors, front lights, brake lights, grills, spoilers, rims and tyres. Also interior parts such as: seats, steering wheels, gear shifter knobs, rear view mirrors, aftermarket computer systems. The user will also be able to choose what material to be used, such as: leather or suave.

***1.3. Glossary***

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| **Term** | **Definition** |
| *OAC* | *Online Automobile Configurator* |
| *Tuner* | *The company for which the Online Automobile Configurator is made* |
| *Garage* | *The place where the user can modify his automobile and preview the changes* |
| *Build* | *An automobile being modified in the Garage* |
| *Complete Build* | *A submitted Build that is up for review by the Build Manager* |
| *Client* | *A user creating his aftermarket automobile build* |
| *Build Viewer* | *A section accessible only to the Build Manager, where he can review all Client submitted builds* |
| *Build Manager* | *A person reviewing the Client’s submitted build* |

***1.4. References***

*<<Will be implemented soon>>*

***1.5. Overview of Document***

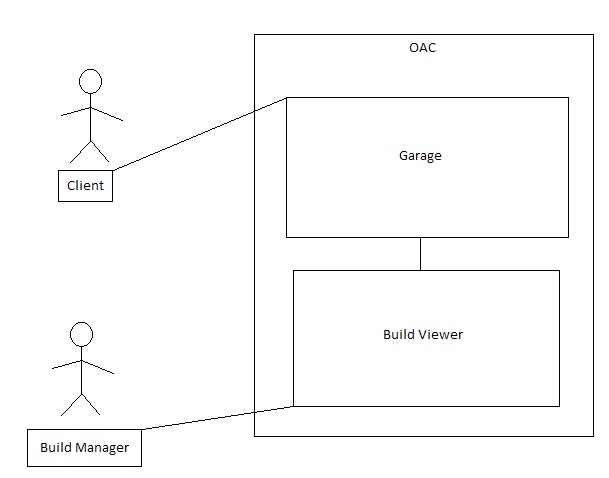
The next chapter, the Overall Description section, of this document gives an overview of the functionality of the product. It describes the informal requirements and is used to establish a context for the technical requirements specification in the next chapter.

The third chapter, the Requirements Specification section, of this document is written primarily for the developers and describes in technical terms the details of the functionality of the product.

Both sections of the document describe the same software product in its entirety, but are intended for different audiences and thus use different language.

**2.0. Overall Description**

***2.1. System environment***

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**Figure 1 – Basic System Environment**

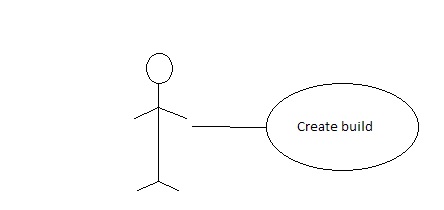
The Online Automobile Configurator has two active actors and one cooperating system. The Client access the Garage through the Internet. The Build Manager can see all submitted builds through the Builds View. Any other communication between the Client and the tuner’s representatives will be established via phone or email.

***2.2. Functional Requirements Specification***

This section outlines the use cases for the Client and the Build Manager.

2.2.1. Client Use Case

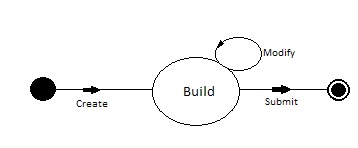
Use case: **Create Build  
Diagram:**

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**Brief Description**The Client accesses the Online Automobile Configurator, is redirected to his Garage and begins creating his Build.

**Initial Step-By-Step Description**  
Before this use case can be initiated, the Client has already accessed the Online Automobile Configurator and logged in.

1. The Client selects a Make and Model.
2. The 3D model of the automobile is loaded.
3. The Client selects his desired modifications.
4. The modifications are applied to the Clients automobile.

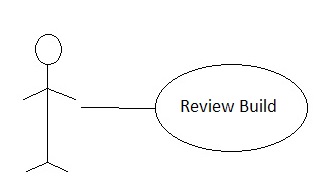


**Figure 2 – Build Submission Process**

The *Build Submission Process* state-transition diagram summarizes how a Client creates his Build and applies the desired Modifications. When he is done, he submits his build for review by the Build Manager. His build is also stored in his Garage.

2.2.2. Build Manager Use Case

Use case: **Review Build  
Diagram:**



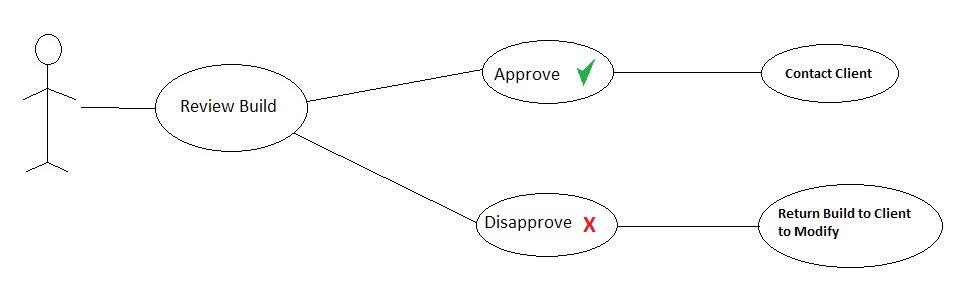
**Brief Description**The Build Manager accesses the Online Automobile Manager and is redirected to the Build Viewer where he can see all submitted builds.

**Initial Step-By-Step Description**Before this use case can be initiated, the Build Manager has already accessed the Online Automobile Configurator and logged in.

1. The Build Manager selects one of the available submitted builds.
2. The 3D model of the submitted build is loaded.
3. The Build Manager reviews all of the Client’s modifications for the selected Build.

2.2.2.1. Build Manager Use Case

Use case: **Approve or Disapprove Build  
Diagram:**



**Brief Description**The Build Manager reviews a Build and then decides if it can be accepted and undergo the Client’s desired modifications in real life.

**Initial Step-By-Step Description**Before this use case can be initiated, the Build Manager has already accessed the Online Automobile Configurator and logged in, at least one Client has submitted a Build for review.

1. The Build Manager selects one of the available submitted builds.
2. The 3D model of the submitted build is loaded.
3. The Build Manager reviews all of the Client’s modifications for the selected Build.
4. The Build Manager decides if the Client’s Build can be accepted and undergo his desired modifications.
   1. If the Build is approved, the Build Manager contacts the Client.
   2. If the Build is disapproved, the Build Manager returns the Build to the Client and provides an explanation why the Build cannot be approved.

2.2.3. User Login Case

Use case: **User Login  
Diagram**

Login Form

**Brief Description**Accessing the Online Automobile Configurator, clients are directed to the Login form and they must enter their credentials.

**Initial Step-By-Step Description**Before this use case can be initiated, the Client has already connected to the Online Automobile Configurator.

1. The Client enters his/her username.
2. The Client enters his/her password.
3. The Client clicks the login button.
4. The Client is redirected to his Garage and begins creating his Build.

**Login**A login is the entering of identifier information into a system by a user in order to access that system. Clients must enter their credentials (username and password) in the login form.

The username is a string (sequence of letter and numbers) that uniquely identifies a user. The username is case-sensitive. It is required to be at between 3 and 32 characters long. The allowed characters are only letters.

The password is similar to the username. It’s a string displayed in “\*”. It is required to be at between 6 and 24 characters long. It should consists letters and numbers. Special characters are also allowed

After entering their credentials, users should click the login button in order to access their Garage or Build Viewer.

***2.3. User Characteristics***

The Client is expected to be Internet literate and be able to navigate through various menus. The main screen of the Client’s Garage will have a menu consisting of different automobile manufacturers, which upon being hovered on will trigger a drop down menu, where all of the available models for that automobile manufacturer are available.  
 The Build Manager is expected to be Internet literate and have knowledge in the processes of tuning an automobile.

***2.4. Non-Functional Requirements***

The Online Automobile Configurator will be deployed on IIS web server and it will use MS SQL server to store data. The physical machine to be used will be determined by the Tuner. The software developed here assumes the use of Entity Framework to make the connection between the website and the database. The speed of the Client’s connection will depend on the hardware used rather than characteristics of this system.

**3.0. Requirements Specification**

***3.1. External Interface Requirements***

<<Will be implemented soon>>

***3.2 Functional Requirements***

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| Rule number: | 1.0.0 |
| Rule title: | **Successful login** |
| Rule description: | Test if the user is able to login successfully. |
| Procedure: | 1) Open the web site of The Online Automobile Configurator.  2) Navigate to the sign in section.  3) Enter a valid username and a valid password in the respective fields.  4) Click login. |
| Passes if: | The correct user is logged in. |
| Fails if: | The error message appears.  The user is not logged in. Another incorrect user is logged in. |
| Notes: | User must be registered already. |
| Rule number: | 1.1.0 |
| Rule title: | **Unsuccessful login** |
| Rule Description: | Test if unregistered users are able to login |
| Procedure: | 1) Open the web site of The Online Automobile Configurator.  2) Navigate to the sign in section.  3) Enter invalid an username and an invalid password in the respective fields.  4) Click login. |
| Passes if: | The error message appears.  The user is not logged in. |
| Fails if: | The user is logged in. |
| Notes: | The username must not be registered in the system. |

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| Rule number: | 1.2.0 |
| Rule title: | **Empty password** |
| Rule Description: | Test the login with a valid username and an empty password |
| Procedure: | 1) Open the web site of The Online Automobile Configurator.  2) Navigate to the sign in section.  3) Enter valid username and leave the password field empty.  4) Click login. |
| Passes if: | The error message appears.  The user is not logged in. |
| Fails if: | The user is logged in. |
| Notes: |  |

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| Rule number: | 1.2.1 |
| Rule title: | **Empty username** |
| Rule Description: | Test with an empty username and a valid password |
| Procedure: | 1) Open the web site of The Online Automobile Configurator.  2) Navigate to the sign in section.  3) Leave the username field empty and enter a valid password in the password field.  4) Click login. |
| Passes if: | An error message appears informing that the username field is empty. |
| Fails if: | A random user is logged in the system. |
| Notes: |  |

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| Rule number: | 1.3.0 |
| Rule title: | Empty fields |
| Rule Description: | Test if the username and password fields are empty |
| Procedure: | 1) Open the web site of The Online Automobile Configurator.  2) Navigate to the sign in section.  3) Leave username and password fields empty.  4) Try to click the login button. |
| Passes if: | The Login button is not functional. |
| Fails if: |  |
| Notes: |  |

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| Rule number: | 1.4.0 |
| Rule title: | **Case sensitivity** |
| Rule Description: | Check if the login function handles case sensitivity correctly |
| Procedure: | 1) Open the web site of The Online Automobile Configurator.  2) Navigate to the sign in section.  3) Enter a case sensitively incorrect username or password.  4) Click login. |
| Passes if: | The error message appears.  The user is not logged in. |
| Fails if: | The user is logged in. |
| Notes: |  |

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| Rule number: | 1.5.0 |
| Rule title: | **Copy password** |
| Rule Description: | After logging in try to copy or cut the password and paste it in another field |
| Procedure: | 1) Open the web site of The Online Automobile Configurator.  2) Navigate to the sign in section.  3) Enter valid a username and a valid password in the respective fields.  4) Copy the entered password to a regular text field or text editor. |
| Passes if: | Password is not pasted. |
| Fails if: | Password is pasted. |
| Notes: |  |

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| Rule number: | 1.6.0 |
| Rule title: | **Account lock** |
| Rule Description: | Verify that the account is locked after five times of unsuccessful user logins. |
| Procedure: | 1) Open the web site of The Online Automobile Configurator.  2) Navigate to the sign in section.  3) Enter an invalid username or an invalid password in the respective fields.  4) Click login.  5) Repeat steps 3) and 4) four times. |
| Passes if: | An error message appears informing the user that he is unable to log in for five minutes.  The user is unable to login for five minutes. |
| Fails if: | The error message does not appear.  The user is able to login within the next five minutes. |
| Notes: |  |

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| Rule number: | 1.7.0 |
| Rule title: | **Back button** |
| Rule Description: | Check if clicking on the Back button after logging out does not sign in the user |
| Procedure: | 1) Open the web site of The Online Automobile Configurator.  2) Navigate to the sign in section.  3) Enter a valid username and a valid password in the respective fields  4) Click login.  5) Logout.  6) Click on the Back button. |
| Passes if: | The user is not logged in. |
| Fails if: | The user is logged in again. |
| Notes: | The button “Back” is integrated in the web browser. |

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| Rule number: | 1.8.0 |
| Rule title: | **Login URL** |
| Rule Description | Copying the URL of a signed in user and pasting it after logging out should not result in a successful login |
| Procedure: | 1) Open the web site of the Online Automobile Configurator.  2) Navigate to the sign in section.  3) Enter a valid username and a valid password on the respective fields  4) Click login.  5) Navigate to the URL address of the web site.  6) Copy the URL address.  7) Logout.  8) Paste the URL address in the address bar.  9) Enter the page |
| Passes if: | The user is not logged in. |
| Fails if: | The user is logged in. |
| Notes: |  |

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| Rule number: | 1.9.0 |
| Rule title: | **Auto Logout** |
| Rule Description: | The user should be logged out if he presses the Backspace button |
| Procedure: | 1) Login to the site with a valid user.  2) Press the Backspace button. |
| Passes if: | The user is logged out. |
| Fails if: | The user is still logged in. |
| Notes: |  |

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| Rule number: | 1.10.0 |
| Rule title: | **Forgotten Password** |
| Rule Description: | Check that the Forgotten Password hyperlink is visible |
| Procedure: | 1) Open the web site of the Online Automobile Configurator.  2) Navigate to the sign in section. |
| Passes if: | There is a “Forgotten Password” hyperlink. |
| Fails if: | The “Forgotten Password” hyperlink is inactive.  The “Forgotten Password” hyperlink is not visible.  The “Forgotten Password” hyperlink is inaccessible. |
| Notes: |  |

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| Rule number: | 1.11.0 |
| Rule title: | **Login Session timeout** |
| Rule Description: | Verify that the user is logged out after 10 minutes of inactivity |
| Procedure: | 1) Open the web site of the Online Automobile Configurator.  2) Navigate to the sign in section.  3) Enter a valid username and a valid password in the respective fields  4) Click login.  5) Leave the website idle for 11 minutes.  6) Perform some action. |
| Passes if: | The user login session has expired and the user is logged out. |
| Fails if: | The user can perform the action.  The user’s session has not expired.  The user has not been logged out. |
| Notes: | If the user logs in, begins constructing a build and then leaves the website idle for 10 minutes, after being logged out due to his session’s expiration, when he logs back in all of his modifications should be saved. The user must not lose progress if his session expires. |

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| Rule number: | 1.12.0 |
| Rule title: | **Different browsers** |
| Rule Description: | Verify simultaneous logins to the application from different browsers |
| Procedure: | 1) Open the web site of the Online Automobile Configurator.  2) Navigate to the sign in section.  3) Enter a valid username and a valid password in the respective fields  4) Click login.  5) Open a second browser.  6) Log in with the same username and password.  7) Repeat steps from 1) to 6) with the same username and password for all supported browsers |
| Passes if: | The user is unable to log in. |
| Fails if: | The user can log in properly with actual data. |
| Notes: |  |