

Fully-Dressed Use Cases

Use Case 1: Optional Account System for Login	
ID	UC-01
Title	Optional Account System for Login
Primary Actor	User
Stakeholders and Interests	User: Wants to have an account to log into that saves previous builds/models
Preconditions	The user must have an email to create an account
Success Guarantee	Users can create an account and log into it
Main Success Scenario	<ol style="list-style-type: none"> 1. The user attempts to log in by clicking on the “Login” button at the screen's top right corner. 2. The user enters their email as username and their password 3. The user is logged into the application
Extensions	2a. The user does not have an account <ol style="list-style-type: none"> 1. The user starts the process of creating a new account by clicking on the “Create an account” button that is located underneath the blank login spaces. 2. Prompts the user to enter their desired email for the account 3. Prompts the user to create a password for the account 4. Prompts the user to retype the password for confirmation 5. Account is created
Special Requirements	N/A
Technology & Data Variation List	Login information is entered by the keyboard (and mouse/touchpad if on PC).

Use Case 2: Large Amount of PC Spec Options	
ID	UC-02
Title	Large Amount of PC Spec Options
Primary Actor	User
Stakeholders and Interests	User: Wants to build a model with specific PC parts. Those parts must be available as options to be added to the model.

Preconditions	The desired PC part must exist
Success Guarantee	The desired PC part is an available option to be added
Main Success Scenario	<ol style="list-style-type: none"> 1. The user looks up a certain PC part (graphics card, CPU, etc.) 2. The user sees that the item is available 3. The user selects the PC part, adding it to the build model
Extensions	2a. Item is unavailable <ol style="list-style-type: none"> 1. The user clicks on a button that directs them to a messaging system 2. The user sends a message to the developers, requesting them to add a specific component/PC part/spec that was unavailable 3. The developers add the desired part to the application
Special Requirements	The developers should add requested parts as soon as possible, ideally within 48 hours of the request.
Technology & Data Variation List	The parts and messages are entered and/or selected using a keyboard (and mouse/touchpad if on PC).

Use Case 3: Reasonably Estimated Market Price for Parts	
ID	UC-03
Title	Reasonably Estimated Market Price for Parts
Primary Actor	User
Stakeholders and Interests	User: Wants to have a reasonable estimate of the price of an individual PC part/spec/component
Preconditions	The desired PC part is already available on the application, ready to be selected
Success Guarantee	Users can see a reasonably estimated price displayed for each PC part
Main Success Scenario	<ol style="list-style-type: none"> 1. The reasonably estimated price for the PC part is displayed clearly its description along with other information
Extensions	N/A
Special Requirements	N/A

Technology & Data Variation List	N/A
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Use Case 4: Total Price of Build	
ID	UC-04
Title	Total Price of Build
Primary Actor	User
Stakeholders and Interests	User: Wants to see the total price of the build, to see if the build fits their budget
Preconditions	The user has a complete build ready (no missing parts)
Success Guarantee	The user can view the total price of the build
Main Success Scenario	<ol style="list-style-type: none"> 1. The user looks at the bottom of the screen (underneath the build) to see the total price of the build with its current components
Extensions	N/A
Special Requirements	The total price of the build should be easy to find.
Technology & Data Variation List	Login information is entered by the keyboard (and mouse/touchpad if on PC).

Use Case 5: Output Estimated Framerates	
ID	UC-05
Title	Output Estimated Framerates on Popular Video Games
Primary Actor	User
Stakeholders and Interests	User: Wants to know the performance of the build in terms of frame rates for popular games.
Preconditions	The user has completed the PC build.
Success Guarantee	The application displays estimated frame rates for selected games
Main Success Scenario	<ol style="list-style-type: none"> 1. The user completes their PC build.

	<ol style="list-style-type: none"> The user will navigate to the performance estimation page. The application will analyze the selected PC components. The application will display the estimated frame rates for a list of popular video games.
Extensions	1a. Incomplete Build <ol style="list-style-type: none"> The application prompts the user to complete the build before proceeding to the performance estimation page.
Special Requirements	Access to a large database of game performance metrics.
Technology & Data Variation List	3a. Integrates with third-party APIs to fetch the latest performance data. 3b. Employs an algorithm to analyze components and estimate frame rates.

Use Case 6: Turn on Final Build Model	
ID	UC-06
Title	Turn on Final Build Model
Primary Actor	User
Stakeholders and Interests	User: Wants to see what the custom computer rig looks like when it is powered on and running.
Preconditions	User has completed the PC build.
Success Guarantee	System displays the running model of the build.
Main Success Scenario	<ol style="list-style-type: none"> User will complete their PC build. User will navigate to the build model page. User clicks the "Turn On" button. Application simulates the running state of the build, including lights and animations
Extensions	1a. Incomplete Build <ol style="list-style-type: none"> The application prompts the user to complete the build before proceeding to the performance estimation page. 1b. Hardware Error <ol style="list-style-type: none"> If there is a hardware error, the application notifies the user and provides troubleshooting steps.
Special Requirements	High-quality animations and realistic simulations.
Technology & Data	4a. Uses a 3D modeling software to display and view the

Variation List	custom built computer
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Use Case 7: Check Device Capability for Smooth Demonstration	
ID	UC-07
Title	Check Device Capability for Smooth Demonstration
Primary Actor	Application
Stakeholders and Interests	<p>User: Wants a smooth demonstration of the custom computer rig when it is powered on and running.</p> <p>Application: Needs to ensure the device can handle the application smoothly</p>
Preconditions	User has completed the PC build and clicked the “Turn On” button on the build model page.
Success Guarantee	Application confirms the device capability or displays a warning.
Main Success Scenario	<ol style="list-style-type: none"> 1. A User will complete their PC build. 2. User will navigate to the build model page. 3. User clicks the “Turn On” button. 4. Application will then check the device specifications. 5. If the system requirements are met the application simulates the running state of the build, including lights and animations.
Extensions	<p>1a. Incomplete Build</p> <ol style="list-style-type: none"> 1. The application prompts the user to complete the build before proceeding to the performance estimation page. <p>4a. Insufficient device specifications</p> <ol style="list-style-type: none"> 1. User is notified and given possible solutions or told to use a more powerful machine
Special Requirements	Accurate detection of device specifications.
Technology & Data Variation List	5a. Uses a 3D modeling software to display and view the custom built computer

Use Case 8: Display Warning for Insufficient Device Capability	
ID	UC-08
Title	Display Warning for Insufficient Device Capability

Primary Actor	Application
Stakeholders and Interests	User: Wants to be informed if their device cannot handle the application smoothly. Application: Needs to provide clear warnings to prevent a poor user experience.
Preconditions	Application has checked the device specifications.
Success Guarantee	User is informed about the device's capability.
Main Success Scenario	<ol style="list-style-type: none"> 1. Application will check the device specifications. 2. Application determines that the device does not meet the requirements. 3. Application displays a warning message to the User and suggests possible solutions.
Extensions	2a. Sufficient device specifications <ol style="list-style-type: none"> 1. The 3D simulation of the User's custom PC can now be displayed.
Special Requirements	Clear and concise warning messages.
Technology & Data Variation List	

Use Case 9: Display Warning if Build is Incomplete	
ID	UC-09
Title	Display Warning if Build is Incomplete
Primary Actor	Application
Stakeholders and Interests	User: Builds there PC of components they pick Application: Needs to ensure the PC has every component necessary in order for it to work
Preconditions	User has completed the PC build and clicked the "check" to see if it is a complete build
Success Guarantee	Application confirms the build is successful or missing components
Main Success Scenario	<ol style="list-style-type: none"> 1. User builds their desired PC 2. User then tells application to check their build 3. Application checks builds 4. Application displays message saying if build is successful or which components are missing

Extensions	1a. Incomplete Build 3. The application prompts the user to complete the build
Special Requirements	Clear warning messages
Technology & Data Variation List	7a. Needs data of what components make up a PC

Use Case 10: Incompatible Components	
ID	UC-10
Title	Incompatible Components
Primary Actor	Application
Stakeholders and Interests	User: Wants to utilize different size components Application: Needs to provide clear warnings to prevent incompatible sizes
Preconditions	Application knows size of case for build
Success Guarantee	Application confirms sizes of components are compatible with each other
Main Success Scenario	<ol style="list-style-type: none"> 1. User selects size of case for their PC 2. User selects components one by one 3. Application checks if size of component is compatible with the current build 4. Application displays warning if a component is incompatible
Extensions	1a. Incomplete build 3. Different size components not compatible
Special Requirements	Clear and concise warning messages.
Technology & Data Variation List	N/A

Use Case 11: Rotatable View	
ID	UC-11
Title	Rotatable View
Primary Actor	User

Stakeholders and Interests	User: Wants to see their build from different angles Application: Needs to ensure the User is able to rotate their build to be seen from different angles
Preconditions	User has started building their PC together
Success Guarantee	Application allows user to rotate their build
Main Success Scenario	<ol style="list-style-type: none"> 1. User starts putting their PC together 2. User then clicks a view model 3. Application shows a model of their current build 4. User then able to rotate their build by clicking and dragging the model
Extensions	2a. Sufficient device specifications 3. The 3D simulation of the User's custom PC can now be displayed.
Special Requirements	High quality demonstration
Technology & Data Variation List	5a. Uses a 3D modeling software to display and view the custom built computer

Use Case 12: Search for Components	
ID	UC-12
Title	Search for Components
Primary Actor	User
Stakeholders and Interests	User: Wants to search for specific PC parts Application: Needs to display all options for the part User searched for
Preconditions	User needs to know specific part to search for
Success Guarantee	User is able to select the part that they wish
Main Success Scenario	<ol style="list-style-type: none"> 1. User starts their PC build 2. User searches for a specific component 3. Application displays all search results for that component 4. User selects desired component
Extensions	6a. Identifier <ol style="list-style-type: none"> 1. System searches to see if what is searched for is an actual component in a PC build

Special Requirements	Clear display of search feature
Technology & Data Variation List	8a. Data of all choices for each part of a PC

Use Case 13: Auto-complete search queries	
ID	UC-13
Title	Auto-complete search queries
Primary Actor	Application
Stakeholders and Interests	User: Wants to find a component Application: Gives auto-suggestions based on user input that could be what the user is looking for or similar
Preconditions	Application understands the user input
Success Guarantee	Application suggests the component the user was searching for, quickening their search experience.
Main Success Scenario	<ol style="list-style-type: none"> 1. A user searches for a part 2. The search bar autocompletes with the component the user was looking for
Extensions	<ol style="list-style-type: none"> 1. Show similar products
Special Requirements	Show only products related to what's inputted
Technology & Data Variation List	N/A

Use Case 14: Component Description when hovering

ID	UC-14
Title	Component Description when hovering
Primary Actor	Application
Stakeholders and Interests	User: Wants a description of a component. Application: Displays the description of the part when it is being hovered over by the users cursor.
Preconditions	Application has a description of the component
Success Guarantee	Application provides a short and concise description of a component for the user
Main Success Scenario	<ol style="list-style-type: none"> 3. A user is overiewing their build 4. User is looking over their parts and hovers their cursor over each part 5. The application then displays a description of the component that is being highlighted by the user
Extensions	<ol style="list-style-type: none"> 2. Show a link to the product page
Special Requirements	Show info from the product page of the component
Technology & Data Variation List	N/A

Use Case 15: Hyperlink to each products manufacture page	
ID	UC-15
Title	Hyperlink to each products manufacture page
Primary Actor	Application
Stakeholders and Interests	User: Wants to learn more about a product Application: Has a link to that products manufacturer page which displays all information
Preconditions	Application has access to each products product page that is from the manufacturer's website
Success Guarantee	Application takes the user to the correct product page where they can find more information on the products.
Main Success Scenario	<ol style="list-style-type: none"> 6. A user searches for a part 7. They find the part but want to learn more 8. The product page has a hyperlink that takes the user to

	the product page that is on the manufacturer's website
Extensions	3. Manufacturer's website
Special Requirements	Link to the manufacturer website
Technology & Data Variation List	N/A

Use Case 16: Allow users to save builds	
ID	UC-16
Title	Allow users to save builds
Primary Actor	Application
Stakeholders and Interests	User: Creates a PC build they would like to save for the future Application: Allows users to save their builds while updating stock numbers and prices.
Preconditions	Application saves different lists of user builds
Success Guarantee	After a user is done making a build, the application saves all the parts for future use
Main Success Scenario	9. A user searches for parts 10. Assembles them using the applications assembler 11. User can then save the build 12. The application then stores the build for later use
Extensions	4. Save all components
Special Requirements	Update prices and stock
Technology & Data Variation List	N/A

Use Case 17: Requesting Missing Spec	
ID	UC-17
Title	Requesting Missing Spec
Primary Actor	User
Stakeholders and	User: The user can request a spec that is not listed in the

Interests	application Application: The application will send this request out to the support team
Preconditions	The user is logged in and has to navigate the component selection screen
Success Guarantee	The user is able to submit a request for the spec that is missing
Main Success Scenario	<ol style="list-style-type: none"> 1. User starts their PC build 2. The user searches for a specific component 3. The application does not list the requested spec 4. The user clicks on the “request spec” button 5. The user fills out a form with spec details 6. The system confirms and sends a support email with an estimated timeline for a response
Extensions	
Special Requirements	The system must support spec requests from different categories
Technology & Data Variation List	8a. Data of all choices for each part of a PC, Main features for each part

Use Case 18: Tutorial for New Users	
ID	UC-18
Title	Tutorial for New Users
Primary Actor	Application
Stakeholders and Interests	Application: Needs to ensure that the application displays a tutorial for users about the features and how to use the site User: Should be shown a tutorial or skip if they want to finish it
Preconditions	The user just created an account or is using the application for the first time
Success Guarantee	The application displays a tutorial video with a step-by-step guide on using the site.
Main Success Scenario	<ol style="list-style-type: none"> 1. The user logs in to the website 2. The user goes to the settings option 3. The user changes the clicks the Dark mode button to go from light to dark

Extensions	<ol style="list-style-type: none"> 1. User does not have access to settings: Systems prompts the user that they need to login 2. Dark mode already enabled: The application informs user that dark mode is enabled and that it will switch back if you confirm 3. If dark mode switch fails: Show error message
Special Requirements	There should be a clear tutorial, with ease of leaving if the user wants to leave
Technology & Data Variation List	The tutorial is interacted with the mouse and keyboard

Use Case 19: Sequential Custom Rig Build	
ID	UC-19
Title	Sequential Custom Rig Build
Primary Actor	System
Stakeholders and Interests	<p>User: Wants to build a custom rig in a step-by-step process ensuring compatibility</p> <p>Application: ensures that all components are selected in the proper sequence to prevent incomplete/incompatible builds.</p>
Preconditions	The user must be logged in, user must start rig-building process
Success Guarantee	The system only allows rig completion once all required components are selected in complete order
Main Success Scenario	<ol style="list-style-type: none"> 1. The User starts his build 2. The system prompts the user to select a case 3. The system prompts the user to select a motherboard 4. The system prompts the user to select other, components.. (CPU, GPU, RAM, etc) 5. The system generates a model for the rig after the main components have been selected
Extensions	<ol style="list-style-type: none"> 1. If the user tries selecting components before completing the required component, the system should display an error 2. If components are incompatible the system will highlight this and make u look for another component before continuing
Special Requirements	The system should validate the compatibility of selected

	components
Technology & Data Variation List	<p>8a. Data of all choices for each part of a PC, Main features for each part</p> <p>6a. Identifier</p> <ol style="list-style-type: none"> 2. System searches to see if what is searched for is an actual component in a PC build

Use Case 20: Randomized PC Builds	
ID	UC-20
Title	Randomized PC Builds
Primary Actor	System
Stakeholders and Interests	<p>User: Wants to generate a complete build based on budget, without manual selection</p> <p>Application: Ensures that the system can generate valid builds under budget constraints</p>
Preconditions	The user is logged in, the user inputs budget before generating
Success Guarantee	The system generates a valid and complete rig based on the user's inputted budget
Main Success Scenario	<ol style="list-style-type: none"> 1. The user starts the PC build 2. The user selects the "Generate Rig" Button 3. The user inputs the desired price range for the build 4. The system randomly fits components based on the specified budget 5. The system presents a randomized build 6. The user has the option to modify specific features or save the build
Extensions	<ol style="list-style-type: none"> 1. If no combination meets the budget, the system suggests entering a new price range
Special Requirements	The system must have a database that validates compatibility between parts and prices
Technology & Data Variation List	8a. Data of all choices for each part of a PC, Main features for each part

Use Case 21: Sending Feedback to Developers	
ID	UC-21
Title	Sending Feedback to Developers
Primary Actor	User
Stakeholders and Interests	<p>User: Wants to send feedback and/or suggestions to the website developers.</p> <p>Application: Includes a button for sending feedback to developers.</p>
Preconditions	The user has an account with a verified email address and must be logged in.
Success Guarantee	The user's message is sent to the developers.
Main Success Scenario	<ol style="list-style-type: none"> 1. The user logs in and navigates to the bottom of the page and clicks the "Send Us Feedback" button. 2. The user is now redirected to a page where they type their preferred email and their suggestions in a text box. 3. The user also includes a subject of the overall message in the "Subject" text box. 4. The user clicks send and is thanked for their feedback. 5. The user is notified that the developers will get back to them as soon as possible and to expect a message back through their verified email that is linked with the account.
Extensions	<p>1a. The user clicks the "Send Us Feedback" button without being logged in.</p> <ol style="list-style-type: none"> 1. The website asks them to either log in to their account or create a new one to be able to send feedback.
Special Requirements	N/A
Technology & Data Variation List	5a. The preferred email the user entered will be used to send the message to the developers and receive a message back from them.

Use Case 22: Filtering by Price and Manufacturers	
ID	UC-22
Title	Filtering by Price and Manufacturers

Primary Actor	Application
Stakeholders and Interests	Application: Must include a feature for filterings between parts, price ranges, and specific manufacturers. User: Wants to filter between parts, prices, and manufacturers.
Preconditions	The user is on the website and is on the “Build A PC” homepage.
Success Guarantee	The user is able to narrow down their search based on the given filters regarding the type of PC part (like CPU or GPU), price range, and manufacturers depending on the part(like AMD or Nvidia).
Main Success Scenario	<ol style="list-style-type: none"> 1. The user navigates to the “Build A PC” homepage. 2. The user selects the “Filter” drop down. 3. The user is able to select a specific PC part, price range, and from specific manufacturers. 4. The user decides to look for a CPU manufactured by AMD and in the \$100-\$150 price range. 5. The user selects search and the website displays the components that fit the user’s filtered search.
Extensions	4a. The user filters the search for a CPU by Intel for less than \$30. <ol style="list-style-type: none"> 1. The website does not display any items and notifies the user that “No Items Were Found”.
Special Requirements	After a certain PC part is picked, only valid manufacturers for that part should be displayed to the user.
Technology & Data Variation List	N/A

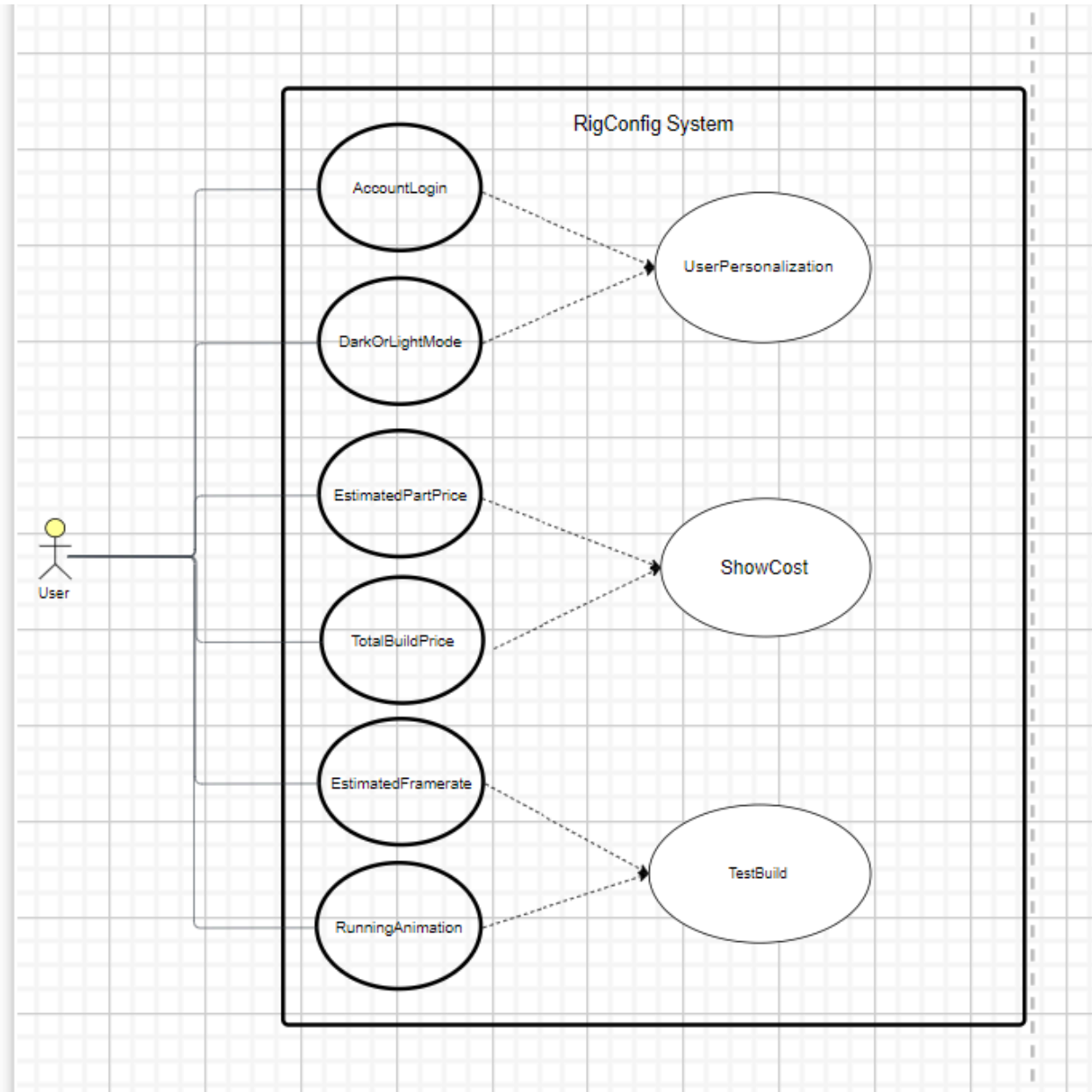
Use Case 23: Comparing PC Parts	
ID	UC-23
Title	Comparing PC Parts
Primary Actor	Application
Stakeholders and Interests	Application: Must include a feature for comparing PC parts and their specifications. User: Wants to compare between different models of a certain PC part (such as CPUs).

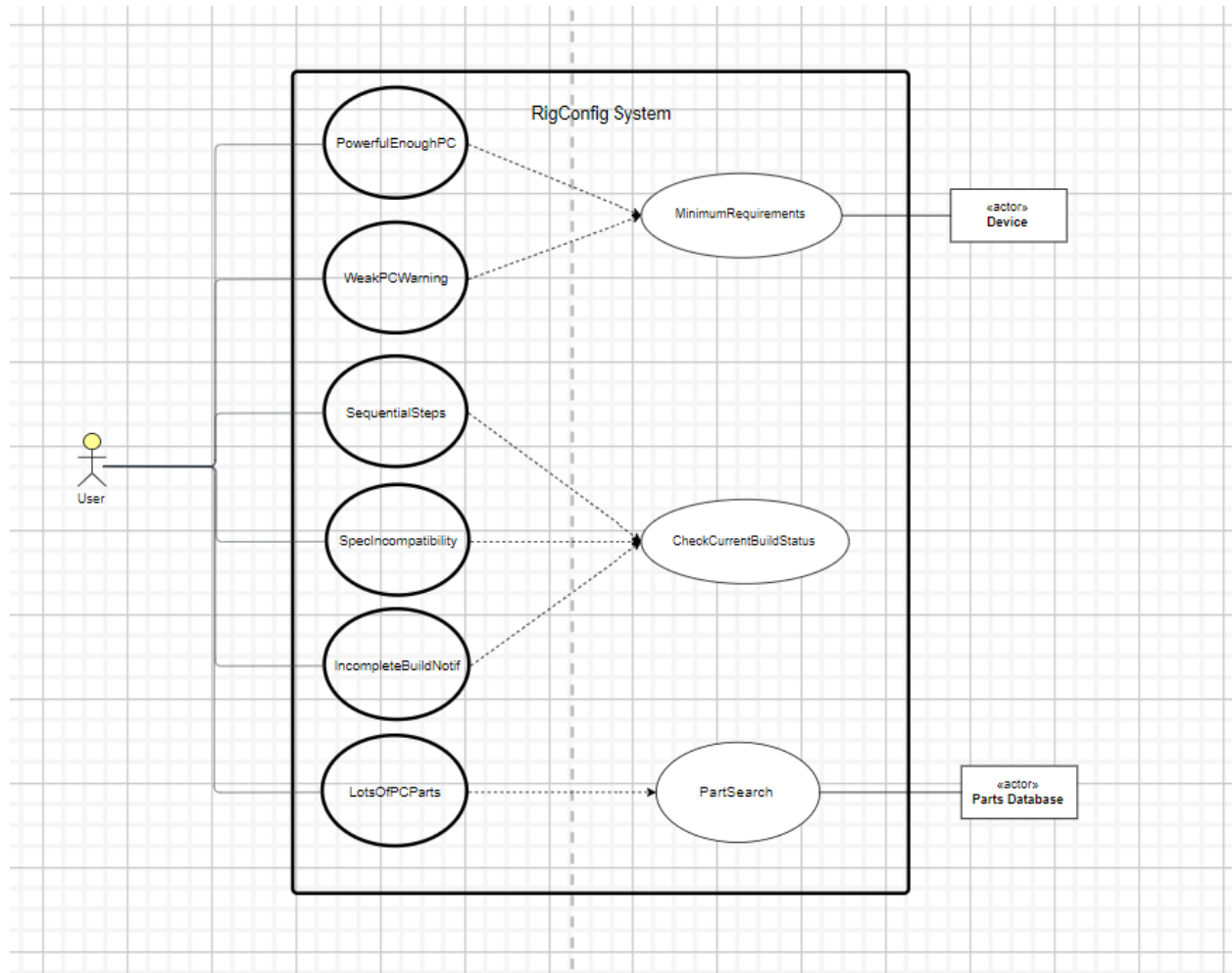
Preconditions	The user is on the website and is on the “Build A PC” homepage.
Success Guarantee	The user is able to compare the differences between models of a PC part, such as price, and specific part performance aspects (like speed).
Main Success Scenario	<ol style="list-style-type: none"> 1. The user navigates to the “Build A PC” homepage. 2. The user selects at least two items of the same type (such as two different models of CPUs). 3. The user selects the “Compare Items” button towards the top of the page. 4. The website displays the items side by side and allows the user to compare them in different areas.
Extensions	2a. The user selects one or no items. <ol style="list-style-type: none"> 1. The user selects the “Compare Items” button towards the top of the page. 2. The website notifies the user that they must select at least two items or more for comparison purposes.
Special Requirements	The user must be comparing parts of the same type, such as comparing between GPU models or PC case models. Cannot compare GPU against a PC case.
Technology & Data Variation List	N/A

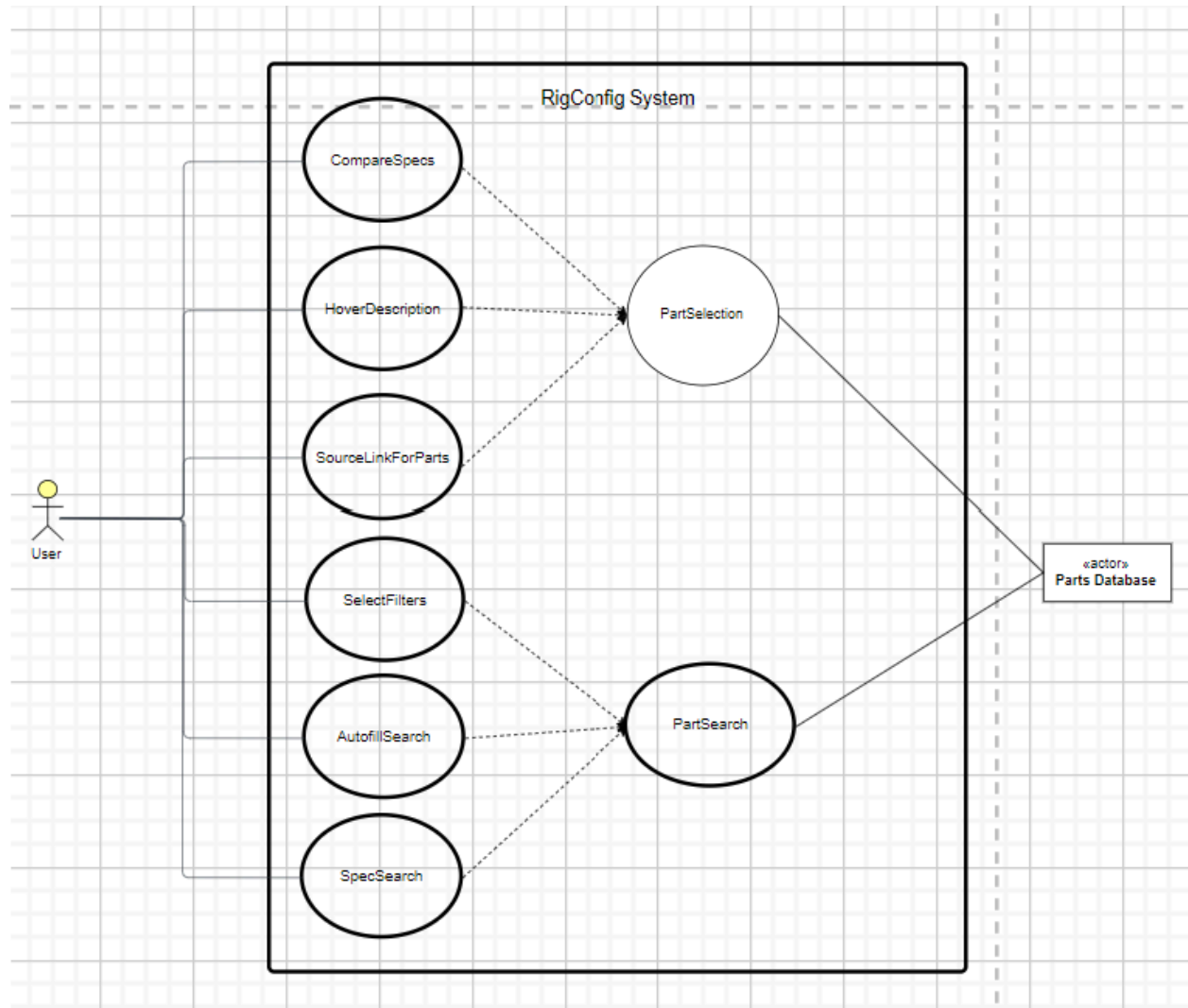
Use Case 24: User’s Appearance Preferences (Light/Dark Mode)	
ID	UC-24
Title	User’s Appearance Preferences (Light/Dark Mode)
Primary Actor	User
Stakeholders and Interests	<p>User: Wants to switch the appearance of the application based on their preference.</p> <p>Application: Must include a dark and light mode feature for users to choose between based on their personal preference.</p>
Preconditions	The user is on the website.
Success Guarantee	The application allows the user to switch between dark and

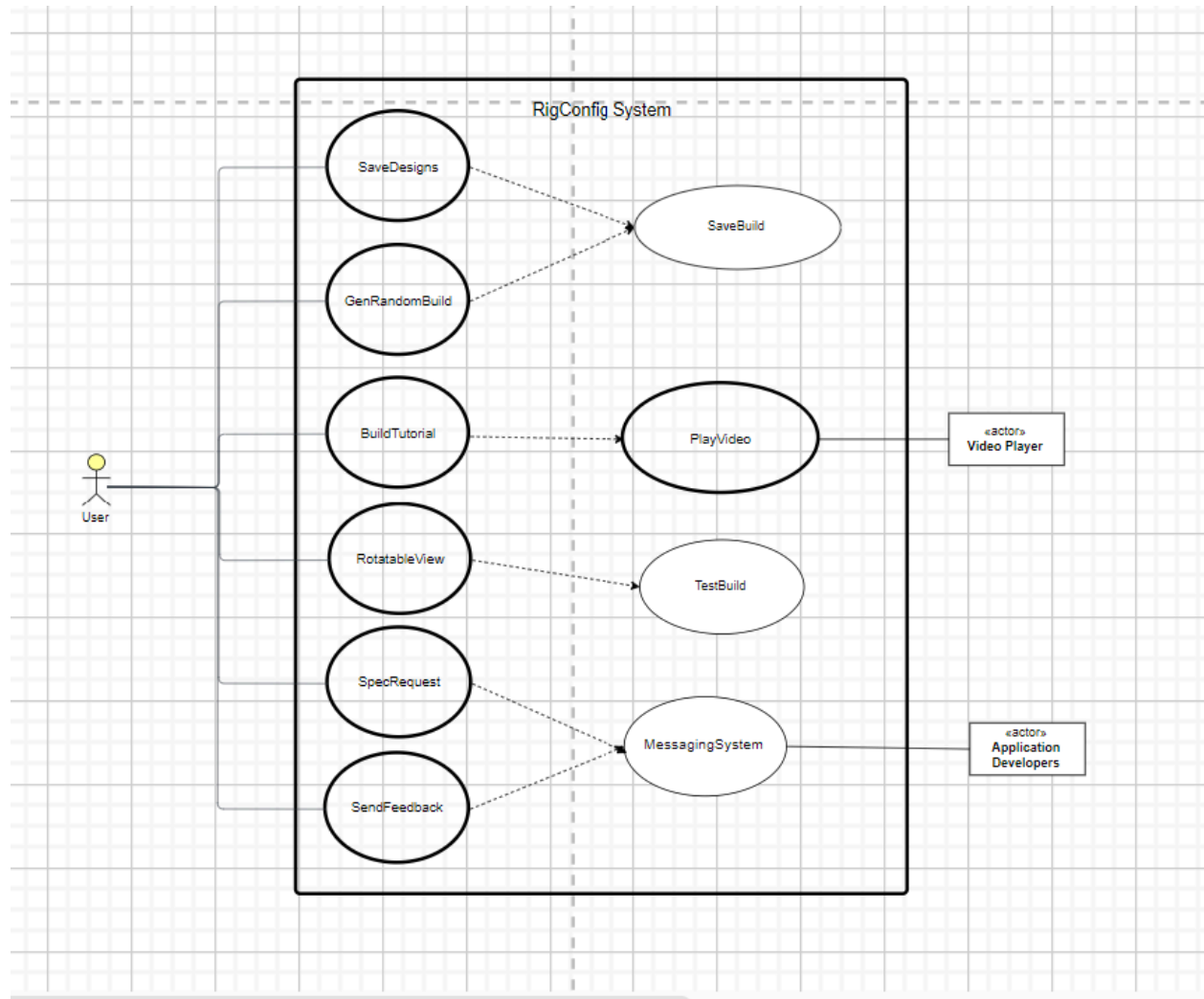
	light mode.
Main Success Scenario	<ol style="list-style-type: none"> 1. The user logs in and navigates to the settings menu. 2. The user locates the “Preferences” section and selects dark mode. 3. The user is now switched from light to dark mode for the application.
Extensions	<ol style="list-style-type: none"> 1a. The user is unable to log in. <ol style="list-style-type: none"> 1. The application notifies the user that they must either correctly re-enter their password, reset their password, or create an account. 2. The user chooses one of the following to get access to their account. 3. The user is able to navigate to the “Preferences” section and select which mode they prefer. 1b. The user does not log in. <ol style="list-style-type: none"> 1. The user navigates to the “Preferences” section of the settings menu and enables dark mode.
Special Requirements	The choice of either mode should not affect the overall aesthetics and readability of the website.
Technology & Data Variation List	N/A

Use Case Diagrams

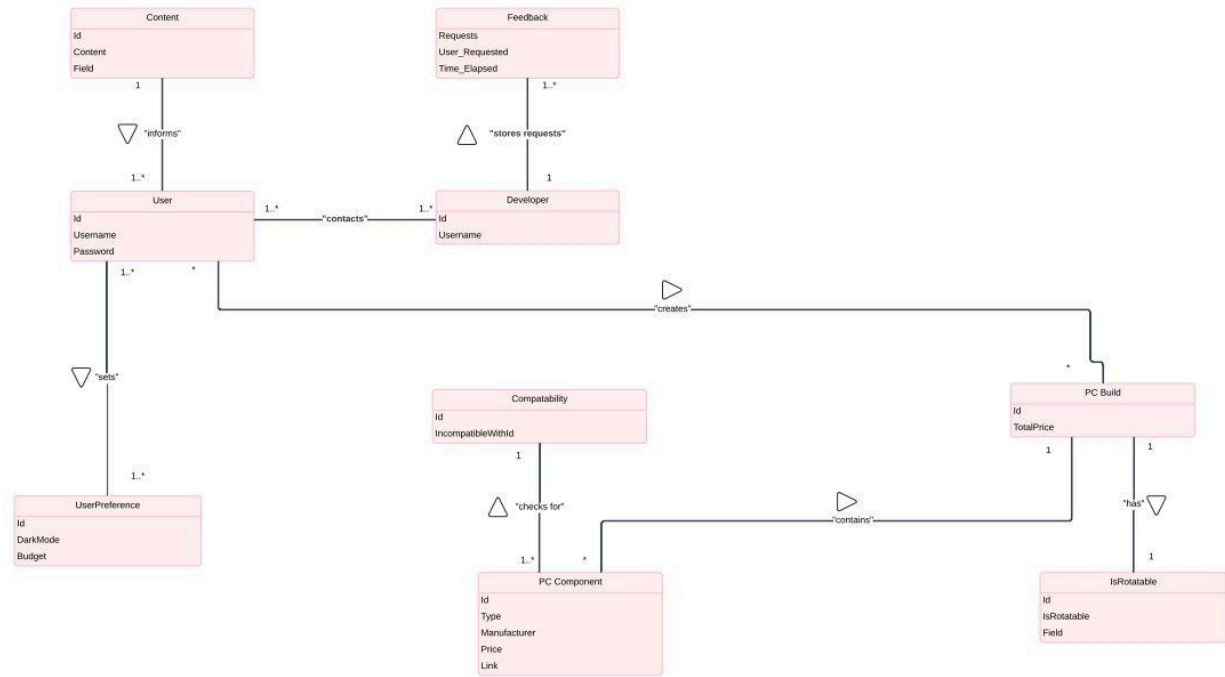








Conceptual Class Diagram



Supplementary Specifications

1. The design of the website should be aesthetically pleasing- it shouldn't look "cheap", text font should be clear but not basic, etc
 2. Blank space should be minimized to make features and text appear larger and clearer to the user.
 3. Features and text on the application should be clearly visible within "sitting distance"- users should not have to constantly be zooming in and out, or leaning forward to read or view the model
 4. No typos on the application, otherwise the application would look unprofessional and/or incomplete
 5. When the final build model is running, animations should be played at 60 frames per second for a smooth demonstration
 6. The model should load relatively quickly (less than 10 seconds)
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Project Work Mapping

Name	Use Cases	Diagram Designed	Non-Functional Requirement (Supplementary Specifications)
Michael Sun	1-4	Use Case Diagram	1
Logan Natysin	5-8	Use Case Diagram	2
Geo Vasconcelos	9-12	Use Case Diagram	3
Ayaan Sheikh	13-16	Conceptual Class Diagram	4
Zain Syed	17-20	Conceptual Class Diagram	5
Jibran Satar	21-24	Conceptual Class Diagram	6