UAT Test Plan for ARVR Immersive Learning Solution (Car Parts)

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1. Scope

a) Objectives and business requirements

Goals:

- The primary goal of this UAT is to assess the effectiveness and usability of the ARVR Immersive Learning Solution (Car Parts) (Car Parts). This entails evaluating how well the application fulfils its intended purpose of providing an Immersive and engaging Learning experience for automotive engineering students and professionals. Testers will gauge the application's ability to effectively convey complex concepts related to car engine components through interactive simulations and visual representations.
- Another crucial objective is to ensure that the application meets the educational needs of its target audience. This includes catering to the diverse Learning styles and preferences of automotive engineering students and professionals. The UAT will focus on verifying whether the application provides sufficient depth of understanding, fosters critical thinking skills, and supports practical skill development in the field of automotive engineering.
- Success in this UAT will be measured by the application's ability to fulfil specific criteria:
    - **Facilitation of Interactive Learning Experiences:** Testers will assess the degree to which the application engages users in interactive Learning experiences. This includes evaluating the interactivity of 3D models, animations, and other ARVR features.
    - **Accurate Representation of Car Engine Components:** The accuracy and fidelity of 3D models representing car engine components will be scrutinized to ensure they align with real-world counterparts.
    - **Seamless Integration of 3D Models and ARVR Features:** The integration between 3D models and ARVR features should be seamless, allowing users to navigate, interact with, and manipulate virtual objects effortlessly.

These goals collectively serve to ascertain the ARVR Immersive Learning Solution (Car Parts)'s efficacy in enhancing Learning outcomes, providing a valuable educational resource, and addressing the educational requirements of automotive engineering students and professionals. The UAT aims to validate the application's ability to meet these objectives and contribute positively to the field of automotive education and training.

b) Pain Point

- The existing methods of learning about car engine components lack interactivity and engagement, hindering effective comprehension and practical skill development. Traditional educational approaches often rely on static textbooks or lectures, which fail to provide hands-on experiences or visualizations of complex concepts. As a result, learners may struggle to grasp key principles and apply them in real-world scenarios.

c) What We Are Testing

i. **Functionality, Usability, and Integration Aspects:** The scope of testing encompasses various aspects of the ARVR Immersive Learning Solution (Car Parts). This includes evaluating its functionality, usability, and integration capabilities to ensure a seamless user experience.

ii. **Accuracy of 3D Models:** Testers will verify the accuracy and fidelity of 3D models representing car engine components. These models should closely resemble their real-world counterparts to facilitate effective Learning and comprehension.

iii. **Effectiveness of Animations:** The effectiveness of animations depicting assembly and disassembly processes will be assessed. These animations play a crucial role in elucidating complex concepts and procedures, enhancing understanding and retention.

iv. **Implementation of Interactive Features:** The implementation of interactive features such as drag-and-drop functionality and labelling will be evaluated. These features aim to engage users actively in the learning process, promoting exploration and experimentation.

v. **Unity Implementation:** The integration between Blender-created 3D models and ARVR features implemented in Unity will undergo testing to ensure seamless functionality and interaction.

vi. **User Experience:** User experience aspects including navigation, interface design, and responsiveness will be scrutinized. A user-friendly interface and intuitive navigation pathways are essential for maximizing user engagement and satisfaction.

d) What We Are Not Testing

i. **Hardware Compatibility and Performance:** Testing of hardware compatibility or performance limitations of VR headsets or devices falls outside the scope of this UAT. The focus remains on evaluating the application's functionality and usability rather than the underlying hardware infrastructure.

ii. **Administrative Features and Team Management Functionalities:** Administrative features such as user management or team collaboration functionalities are not within the purview of this UAT. The emphasis is on assessing the core educational features and functionality of the ARVR Immersive Learning Solution (Car Parts).

iii. **Data Overview Aspects:** Detailed data analytics or reporting features are excluded from testing in this stage. While data collection and analysis may be relevant for future iterations, they are not priorities for the current UAT phase.

By defining the scope clearly, we ensure that the UAT focuses on validating essential aspects of the ARVR Immersive Learning Solution (Car Parts) while aligning with business goals and requirements. This approach helps prioritize testing efforts and ensures that the application meets the desired objectives effectively.

2. Testing team

Name	Responsibility
Lim Hon Sheang	As the UAT Coordinator, Lim Hon Sheang plays a pivotal role in ensuring effective communication between end users and the Quality Assurance (QA) team. They serve as the central point of contact, facilitating discussions, gathering feedback, and conveying it to the QA team for action. Additionally, Lim Hon Sheang is responsible for setting up staging environments and developing usability test cases tailored to the end users' requirements. They meticulously document test results, analyse findings, and compile comprehensive reports summarizing the UAT outcomes. Their role is crucial in ensuring that the UAT process runs smoothly and that any issues or concerns raised by end users are addressed promptly and effectively.
Danny Chan Yi Xiang	Danny Chan Yi Xiang is primarily responsible for designing test cases that comprehensively cover the UAT objectives. Drawing upon their expertise in testing methodologies, Danny meticulously plans and structures test scenarios to validate the functionality, usability, and integration aspects of the ARVR Immersive Learning Solution (Car Parts) (Car Parts). In addition to designing test cases, Danny is tasked with creating test data sets that accurately represent real-world usage scenarios. They meticulously execute test cases, recording observations and findings, and collaborate with the QA team to ensure thorough testing coverage. Furthermore, Danny takes charge of writing detailed UAT reports, documenting test results, analysing trends, and providing actionable insights for further improvements. Their contributions are instrumental in ensuring the quality and effectiveness of the UAT process.

3. Milestones and deliverables

a) Design & Wireframes

- Link to designs:
  The designs for the ARVR Immersive Learning Solution (Car Parts), including 3D models, animations, and user interface elements, will be shared through this link. These designs serve as visual references to ensure that the QA team understands the intended functionality and user experience.
- Link to wireframes:
  Wireframes outlining the layout and structure of the application's screens and interactions will be provided via this link. Wireframes offer a simplified representation of the application's design, focusing on layout and content organization.

Testing Stages

1. **Staging Environment Setup:**
   - The staging environment, orchestrated by Lim Hon Sheang, will replicate the production environment to the closest extent possible. This environment ensures that testing occurs in a controlled setting that mirrors real-world conditions. To achieve this, a snapshot of the production database will be captured and utilized within the staging environment, providing testers with access to authentic data for testing purposes.

2. **Training:**
   - Training sessions led by Danny Chan Yi Xiang will be conducted to prepare UAT testers for their roles and responsibilities. These sessions will cover various aspects, including an overview of the ARVR application's features, navigation guidelines, and testing procedures. Through comprehensive training, testers will gain the necessary knowledge and skills to effectively execute test cases and provide valuable feedback during UAT.

3. **UAT Execution:**
    - During the UAT execution phase, testers will execute predefined test cases to evaluate the application's performance and functionality. Test cases will encompass scenarios related to 3D model accuracy, animation functionality, interactive features, and user experience. Testers will meticulously document their observations, noting any discrepancies, bugs, or usability issues encountered during testing. The execution of test cases will adhere to a structured approach, ensuring thorough coverage of all relevant aspects of the ARVR application.

4. **Reporting:**
    - Following the completion of UAT execution, a comprehensive data analysis will be conducted to review the test results. This analysis involves bug triage, where identified issues are prioritized based on severity and impact on the application's usability and functionality. A collaborative meeting will be convened to discuss the outcomes of the UAT, review the bug triage results, and strategize on necessary actions to address identified issues. The UAT report, compiled by Lim Hon Sheang, will document the findings, recommendations, and action plans derived from the UAT process.

b) Staging environment

The staging environment for the ARVR Immersive Learning Solution (Car Parts) will be designed to closely replicate the production environment while providing a controlled setting for UAT testing. The following requirements outline the setup and accessibility of the staging environment:

- **Data Replication:** To simulate real-world conditions, a copy of the production database will be utilized within the staging environment. This ensures that testers have access to authentic data sets and can perform testing activities with realistic scenarios. The process of copying the production database to the staging environment

will be overseen by the system administrator or designated personnel to maintain data integrity and security.

- **User Onboarding:** Testers will be onboarded to the staging environment using our existing user profiles or credentials. This approach ensures consistency and familiarity for testers, allowing them to access the staging environment with the same user permissions and privileges as in the production environment.
- **Precautionary Measures:** Clear guidelines will be provided to testers to prevent accidental modifications or disruptions to live production systems. Additionally, measures will be in place to monitor and mitigate any potential risks or issues that may arise during UAT testing to safeguard the integrity of production systems.

By adhering to these requirements, the staging environment will serve as a reliable and secure platform for conducting UAT testing of the ARVR Immersive Learning Solution (Car Parts). Testers will have access to realistic data model and scenarios, allowing them to evaluate the application's functionality, usability, and performance effectively.

c) Training

For the training of beta testers participating in the User Acceptance Testing (UAT) of the ARVR Immersive Learning Solution (Car Parts), a structured approach will be adopted to ensure testers are equipped with the necessary knowledge and skills to effectively carry out their testing responsibilities. The training sessions will be conducted over a series of meetings held during the UAT period. The following outline delineates the training schedule and content:

Training Schedule

1. First Meeting (Week 1):
    - Duration: 30 minutes
    - Agenda:
      Presentation of New Feature & Business Objectives:

- An overview of the ARVR Immersive Learning Solution (Car Parts) will be presented, highlighting its key features, functionalities, and intended objectives.
- The business objectives driving the development of the ARVR Solution will be discussed to provide context for testers.

2. Second Meeting (Week 2):
   - Duration: 1 hour
   - Agenda:

     Logging into Staging Environment:
     - Detailed instructions will be provided on how to access the staging environment for UAT testing.
     - Enabling and Best Practices on the New Feature:
     - Testers will be guided on how to enable the ARVR feature within the staging environment and navigate through its functionalities.
     - Best practices for utilizing the ARVR Immersive Learning Solution (Car Parts) effectively will be shared, including tips for optimal user experience and engagement.

3. Third Meeting (Week 3):
   - Duration: 1 hour
   - Agenda:

     Reporting on Test Cases:
     - Testers will be trained on how to report their findings, observations, and test results using predefined test cases or reporting templates.
     - Guidelines on documenting issues, bugs, or usability concerns encountered during testing will be provided.

Q&A Session:

- An opportunity for testers to ask questions, seek clarification on any aspects of the ARVR Solution or testing process, and discuss any challenges or concerns.

Training Facilitator:

- Danny Chan Yi Xiang will oversee the organization and facilitation of the training sessions.
- As the designated UAT Coordinator, Lim Hon Sheang will ensure that testers receive comprehensive training and support throughout the UAT process.

By conducting structured training sessions, testers will gain a thorough understanding of the ARVR Immersive Learning Solution (Car Parts), its features, and functionalities. This enables testers to execute their testing tasks effectively, provide valuable feedback, and contribute to the success of the UAT initiative.

d) UAT Execution

The UAT execution for the ARVR Immersive Learning Solution (Car Parts) will span over a designated period to allow testers to thoroughly evaluate the application's functionality, usability, and performance.

Timeline:

- UAT Execution Period: [1/4/2024] to [3/4/2024]
- Deadline for UAT Execution: [5/4/2024]

Steps:

1. **Onboarding:**
    - Each UAT tester will be individually onboarded to the staging environment.
    - Assistance will be provided to help testers access the ARVR Immersive Learning Solution (Car Parts).

- Testers will be briefed on the testing objectives, expectations, and guidelines, which were also covered during the training sessions.

2. **Test Case Execution:**
    - Testers will be assigned specific test cases tailored to evaluate different aspects of the ARVR Solution.
    - Testers will execute the assigned test cases, interacting with the application's features and functionalities as per the defined scenarios.
    - Testers will report any bugs, issues, or feedback encountered during test case execution using the designated reporting mechanism (feedback form).
3. **Feedback Collection:**
    - Upon completion of test case execution, a quick meeting will be scheduled with each tester to gather feedback on their overall experience.
    - Testers will have the opportunity to provide insights, suggestions, and comments regarding the application's usability, effectiveness, and any areas for improvement.
    - Feedback collected during these sessions will be documented and compiled for further analysis and review.
4. **Deadline for UAT Execution:**
    - The UAT execution must be completed by the specified deadline to ensure timely evaluation and subsequent actions based on the feedback received.

Reporting and Analysis:

- Testers' feedback, bug reports, and test case results will be compiled and analysed to identify patterns, trends, and areas requiring attention.
- A comprehensive UAT report will be prepared, summarizing the findings, observations, and recommendations gathered during the testing phase.
- The UAT report will serve as a valuable resource for informing decision-making, prioritizing enhancements, and driving improvements to the ARVR Immersive Learning Solution (Car Parts).

By following these steps and adhering to the designated timeline, the UAT execution will proceed systematically, enabling testers to provide valuable insights and feedback essential for refining and optimizing the ARVR Solution before its final deployment.

e) Reporting & data analysis

Test Case TC-001

During the execution of Test Case TC-001, testers found the eye-tracking sensor to be highly responsive and accurate in detecting the user's eye movements. The sensor effectively tracked the user's gaze as they interacted with the ARVR interface, reflecting the movement of their eyes in real-time within the virtual environment. This seamless integration of eye-tracking technology with the ARVR interface contributed to a smooth and intuitive user experience.

- Testers reported no difficulties or issues encountered while performing the test cases, indicating the reliable functionality of the eye-tracking sensor. Users expressed satisfaction with the ease of use and precision of the eye-tracking feature, highlighting its effectiveness in enhancing user interaction within the ARVR environment.
- Feedback from testers was overwhelmingly positive, emphasizing the added value brought by the eye-tracking sensor to the overall ARVR experience. The accurate detection of eye movements and seamless integration with the interface were noted as particularly impressive features.
- No significant areas of improvement were identified during the testing process, indicating that the eye-tracking sensor met or exceeded expectations in terms of performance and usability.

Overall, the successful execution of Test Case TC-001 demonstrates the effectiveness and reliability of the eye-tracking technology integrated into the ARVR solution.

Test Case TC-002

During the execution of Test Case TC-002, the functionality of the stylus pen for drag and drop actions and button clicks was thoroughly evaluated to ensure its effectiveness in facilitating user interaction within the ARVR interface.

- Testers confirmed that the stylus pen was detected and ready for use, indicating that the device was properly recognized by the system. This initial observation reassured testers that the stylus pen was available for interaction within the ARVR environment, setting the stage for further testing.
- Users successfully performed drag and drop actions using the stylus pen, demonstrating its capability to interact with components within the ARVR interface. This functionality enables users to manipulate virtual objects effectively, allowing them to engage with the learning content in a hands-on manner. The successful execution of drag and drop actions signifies the responsiveness and accuracy of the stylus pen, essential for an immersive learning experience.
- Testers verified that the stylus pen accurately clicked on buttons within the ARVR interface, prompting the expected actions. This precise control and responsiveness enable users to navigate through the interface seamlessly, accessing various features and functionalities with ease. The ability to trigger actions through stylus pen clicks enhances user interaction and facilitates intuitive exploration of the ARVR environment.

Overall, the successful execution of Test Case TC-002 demonstrates that the stylus pen functionality for drag and drop actions and button clicks aligns with the specified requirements. The stylus pen serves as an effective tool for user interaction within the ARVR environment, contributing to an immersive and engaging learning experience for users.

Test Case TC-003

During the execution of Test Case TC-003, the functionality of the overview button within the ARVR interface was thoroughly evaluated to ensure its effectiveness in providing users with an overview of the model.

- Testers successfully navigated to the overview section within the ARVR interface, indicating that the navigation system was intuitive and user-friendly. This seamless navigation experience ensures that users can easily access relevant sections of the interface without encountering any obstacles or confusion.
- Upon clicking the overview button using the stylus pen, testers observed that the overview of the model was promptly displayed as expected. This functionality allows users to gain a quick understanding of the model's layout and main components, providing valuable context for further exploration and learning. The clear and concise presentation of the model overview enhances users' comprehension and facilitates their engagement with the learning content.

Overall, Test Case TC-003 yielded a pass result, indicating that the functionality of the overview button successfully met the specified requirements. The ability to access and display the model overview enhances the ARVR learning experience by providing users with essential information in a convenient and accessible manner.

Test Case TC-004

In the analysis of Test Case TC-004, the focus was on evaluating the effectiveness of the car engine button within the ARVR interface and its associated functionalities.

- The initial step involved testers navigating to the car engine section within the ARVR interface. The successful completion of this step indicates that the interface's navigation system is intuitive and user-friendly. This aspect is crucial for ensuring that users can seamlessly access different sections of the application without encountering any obstacles or confusion.
- Upon clicking the car engine button using the stylus pen, testers confirmed that the car engine model appeared promptly on the screen. This observation verifies that the button's functionality to display the corresponding model works as intended. The prompt display of the car engine model is essential for providing

users with immediate visual feedback and engaging them in the learning process effectively.

- Testers verified that the dissect button, which allows users to initiate the dissection animation for the car engine model, was correctly displayed. This verification ensures that users have access to all relevant functionalities within the ARVR interface. The presence of the dissect button enhances the application's interactive nature, enabling users to explore the internal components of the car engine in-depth.
- Upon clicking the dissect button, testers confirmed that the dissection animation commenced without any issues. This observation indicates that the animation feature is seamlessly integrated into the application and responds promptly to user interactions. The initiation of the dissection animation enhances the educational experience by providing users with a dynamic visualization of the car engine's internal structure and operation.

In summary, the analysis of Test Case TC-004 demonstrates that the car engine button's functionality within the ARVR interface meets the specified requirements effectively. The successful display of the car engine model and initiation of the dissection animation contribute to an immersive and informative learning experience for users. These observations affirm the application's capability to engage users and facilitate their understanding of complex concepts in automotive engineering.

Test Case TC-005

During Test Case TC-005, it demonstrates the car battery model and the button’s functionality within the ARVR interface.

- The initial step involves the user navigating to the car battery section within the ARVR interface. This step aims to verify the ease and effectiveness of the interface's navigation system in accessing specific sections. Upon execution, the user successfully reaches the car battery section without encountering any navigational issues. This confirms that the navigation within the interface is intuitive and user-friendly, ensuring seamless exploration of different components.

- After reaching the car battery section, the user proceeds to click the car battery button using the stylus pen. The expected outcome is the display of the car battery model on the screen. Upon execution, the car battery model is promptly displayed, indicating that the button's functionality to showcase the corresponding model operates as intended. This ensures that users can visually inspect and explore the car battery component within the ARVR environment.
- Following the display of the car battery model, the user verifies the presence of the dissect button associated with the car battery. This step aims to ensure that users have access to additional functionalities, such as initiating dissection animations, for further exploration. Upon verification, the dissect button is visible and correctly displayed for the car battery model, confirming that users can engage in detailed examinations of the component's internal structure.
- In the final step, the user clicks the dissect button to trigger the dissection animation for the car battery model. The expected outcome is the seamless initiation of the animation, allowing users to explore the internal components of the battery. Upon execution, the dissection animation starts as expected, indicating successful integration and functionality of the animation feature within the ARVR interface. This enables users to gain insights into the intricate details of the car battery's construction and operation.

In summary, Test Case TC-005 verifies the functionality of the car battery button within the ARVR interface, including the display of the corresponding model and the initiation of dissection animations. The successful execution of each step ensures a comprehensive and engaging learning experience for users, facilitating their understanding of car battery components and functionalities.

Test Case TC-006

During Test Case TC-006, the user successfully navigated to the designated fuel section within the ARVR interface without encountering any issues. This initial step ensured that the user could access the specific area intended for exploring the fuel component.

- Upon reaching the fuel section, the user utilized the stylus pen to interact with the interface, specifically clicking on the fuel button. This action triggered the display of the 3D model representing the fuel system, allowing the user to visually examine the component's details and structure. The successful rendering of the fuel model indicated that the interface responded appropriately to the user's input, ensuring a seamless transition to the fuel exploration mode.
- Following the display of the fuel model, the user proceeded to verify the presence of the start button, which is essential for initiating the flow animation. Confirming the visibility of the start button ensured that users could easily access the functionality required to commence the animation sequence.
- Once satisfied with the verification, the user clicked on the start button using the stylus pen. This action initiated the flow animation, simulating the process of fuel moving from the fuel tank to the engine within the ARVR environment. The animation sequence played smoothly, providing users with a realistic representation of the fuel flow dynamics.

Throughout the test case execution, the ARVR interface exhibited robust functionality, accurately responding to user interactions and effectively delivering the intended learning experience. The successful completion of Test Case TC-006 confirms the proper functionality of the fuel button and flow animation feature, contributing to the overall effectiveness of the ARVR immersive learning solution for car parts.

4. Environmental requirements

a) Hardware requirements

The ARVR immersive learning solution for car parts may have specific hardware requirements to ensure optimal performance and user experience. These requirements should be verified by the QA team to ensure compatibility with testers' machines. The following outlines the minimal and recommended hardware specifications that we will be using:

- **CPU**: 11th Gen Intel® Core™ i5-11400H processor
- **GPU**: NVIDIA® GeForce RTX™ 3060 with 6GB GDDR6 VRAM
- **Memory**: Dual-channel 16GB DDR4 SDRAM
- **Additional Requirements**:
    - Stylus Pen: A compatible stylus pen for interaction with the ARVR interface.

Meeting the recommended specifications will enhance performance and overall user experience.

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5. Features to be tested

a) Test Case Plan

Test Case ID	Description	Test Priority	Pre-Requisite	Post-Requisite
TC-001	Track user's eyes in the laptop	High	Laptop setup with eye-tracking sensor	Successful detection of user's eyes by sensor
TC-002	Verify stylus pen functionality for drag and drop	High	Stylus pen available	Stylus pen successfully drags and drops components
TC-003	Verify functionality of overview button	High	ARVR interface loaded with overview model	Overview of the model is displayed upon clicking the button
TC-004	Verify functionality of car engine button	High	ARVR interface loaded with car engine model	Car engine model is displayed upon clicking the button Dissect button is displayed for car engine
TC-005	Verify functionality of car battery button	High	ARVR interface loaded with car battery model	Car battery model is displayed upon clicking the button

				Dissect button is displayed for car battery
TC-006	Verify functionality of fuel button	High	ARVR interface loaded with fuel model	Fuel model is displayed upon clicking the button Start button is displayed for fuel model

b) Test Case

i. Eye tracking sensor

Test Scenario ID	TS-001	Test Case ID	TC-001
Description	User interaction with eye-tracking sensor	Test Priority	High
Pre-Requisite	Laptop setup with eye-tracking sensor	Post-Requisite	Successful detection of user's eyes by sensor

Test Execution Steps					
Step	Action	Inputs	Output	Test Result	Test Comments
1	User sits in front of the laptop	None	Proper visualization of ARVR interface	Pass	User's presence is detected by the eye-tracking sensor.
2	User moves eyes while looking at the screen	None	Movement of eyes reflected in the ARVR interface	Pass	Eye-tracking sensor accurately tracks user's eye movements.
3	User looks away from the screen briefly	None	Pause or stop in eye movement detection	Pass	Eye-tracking sensor pauses detection when user looks away.

ii. Stylus pen functionality

Test Scenario ID	TS-001	Test Case ID	TC-002
Description	Verify stylus pen functionality for drag and drop and click	Test Priority	High
Pre-Requisite	Stylus pen available	Post-Requisite	Stylus pen successfully drags and drops components and clicks buttons

Test Execution Steps

Step	Action	Inputs	Output	Test Result	Test Comments
1	User picks up the stylus pen	None	Proper functionality of stylus pen observed	Pass	Stylus pen is detected and ready for use.
2	User attempts to drag and drop a component in the ARVR interface	Stylus pen	Component is successfully dragged and dropped	Pass	Stylus pen successfully performs drag and drop action..
3	User attempts to click on a button using the stylus pen	Stylus pen	Button is clicked and action is triggered	Pass	Stylus pen successfully clicks buttons in the ARVR interface.

iii. Overview model

Test Scenario ID	TS-001	Test Case ID	TC-003
Description	Verify functionality of overview button	Test Priority	High
Pre-Requisite	ARVR interface loaded with overview model	Post-Requisite	Overview of the model is displayed upon clicking the button

Test Execution Steps

Step	Action	Inputs	Output	Test Result	Test Comments
1	User navigates to the overview section in the ARVR interface	None	User navigates to the overview section in the ARVR interface	Pass	User reaches the overview section without issues.
2	User locates and clicks the overview button using the stylus pen	Stylus pen	Overview of the model is displayed	Pass	Overview of the model is successfully displayed upon clicking the button.

iv. Car engine

Test Scenario ID	TS-001	Test Case ID	TC-004
Description	Verify functionality of car engine button	Test Priority	High
Pre-Requisite	ARVR interface loaded with car engine model	Post-Requisite	Car engine model is displayed upon clicking the button, and the dissect button is displayed for car engine

Test Execution Steps					
Step	Action	Inputs	Output	Test Result	Test Comments
1	User navigates to the car engine section in the ARVR interface	None	Navigation to the car engine section successful	Pass	User reaches the car engine section without issues.
2	User locates and clicks the car engine button using the stylus pen	Stylus pen	Car engine model is displayed	Pass	Car engine model is successfully displayed upon clicking the button.
3	User verifies the dissect button is	Stylus pen	Dissect button is visible	Pass	Dissect button is correctly displayed for the

	displayed for car engine				car engine model.
4	User clicks the dissect button	Stylus pen	Dissection animation starts	Pass	Dissection animation starts as expected upon clicking the dissect button.

v. Car battery

Test Scenario ID	TS-001	Test Case ID	TC-005
Description	Verify functionality of car battery button	Test Priority	High
Pre-Requisite	ARVR interface loaded with car battery model	Post-Requisite	Car battery model is displayed upon clicking the button, and the dissect button is displayed for the car battery

Test Execution Steps					
Step	Action	Inputs	Output	Test Result	Test Comments
1	User navigates to the car battery section in the ARVR interface	None	Navigation to the car battery section successful	Pass	User reaches the car battery section without issues.
2	User locates and clicks the car battery	Stylus pen	Car battery model is displayed	Pass	Car battery model is successfully

	button using the stylus pen				displayed upon clicking the button.
3	User verifies the dissect button is displayed for car battery model	Stylus pen	Dissect button is visible	Pass	Dissect button is correctly displayed for the car battery model.
4	User clicks the dissect button	Stylus pen	Dissection animation starts	Pass	Dissection animation starts as expected upon clicking the dissect button.

vi. Car fuel

Test Scenario ID	TS-001	Test Case ID	TC-006
Description	Verify functionality of fuel button and flow animation	Test Priority	High
Pre-Requisite	ARVR interface loaded with fuel model and start button visible	Post-Requisite	Animation for fuel flow from fuel tank to engine starts upon clicking the start button

Test Execution Steps

Step	Action	Inputs	Output	Test Result	Test Comments
1	User navigates to the fuel section in the ARVR interface	None	Navigation to the fuel section successful	Pass	User reaches the fuel section without issues.
2	User locates and clicks the fuel button using the stylus pen	Stylus pen	Fuel model is displayed.	Pass	Fuel model is successfully displayed upon clicking the button.
3	User verifies the start button is visible for the fuel model	Stylus pen	Start button is visible.	Pass	Start button is correctly displayed for the fuel model.

4	User clicks the start button	Stylus pen	Flow animation starts	Pass	Flow animation starts as expected upon clicking the start button.