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| **ID:** P1 | **Name:** Login | |
| **Actors:** Clinician | | **Preconditions:** Device is turned on, application is loaded and an account has been created. |
| **Main Flow:** When the user loads the application, a prompt will be displayed to enter the clinician email and password, these inputs are validated and checked through the database. A valid login will need to be accepted before the clinician can access the further elements of the system. | | **Alternative Flow:** Clinician enters incorrect email, resulting in an error message appearing. Clinician doesn’t have an account, in which they will have to create an account. |
| **Post Conditions:** Access to the main menu and the cognitive tests | | |

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| **ID:** P2 | **Name:** Create Account | |
| **Actors:** Clinician | | **Preconditions:** Application is loaded, clinician doesn’t have an account for the SDSA system. |
| **Main Flow:** If the clinician doesn’t have a login, they will be able to create one to use to further access the SDSA system, the Create Account method will require inputs such as email and password. These details will be saved in the database to be used for log in validation. | | **Alternative Flow:** Invalid details are entered, therefore the account cannot be saved to the database and created. |
| **Post Conditions**: Clinician is able to log into the system | | |

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| **ID:** P3 | **Name:** Enter Patient Details | |
| **Actors**: Clinician | | **Preconditions:** The clinician has successfully logged into the system with a valid email and password, which appears in the database |
| **Main Flow:** To ensure the SDSA is specific to each patient, the clinician will enter patient information into the system such as ID and locality e.g. European Signs, this information will be entered into the database and used to link test scores to a specific patient. | | **Alternative Flow:** Patient details are incorrectly entered therefore the system cannot proceed, e.g. entering a string datatype for Patient ID instead of an integer. |
| **Post Conditions:** patient information will be saved to the database. | | |

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| **ID:** P4 | Send patient details to Database | |
| **Actors**: N/A | | **Preconditions**: patient details have been entered |
| **Main Flow:** When button is clicked, patient details entered will be saved in the relevant table/fields to be retrieved later to link patient to the score. | | **Alternative Flow:** Invalid format of details entered. Patient table cannot be found. Patient’s details already in the database. |
| **Post Conditions:** Introductory pagewill display allowing the cognitive tests to begin. | | |

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| **ID:** P5 | **Name:** Introductory Page | |
| **Actors:** Clinician | | **Preconditions:** Device is turned on, application is loaded and an account has been created. |
| **Main Flow:** Once the patient details participating in the current SDSA have been entered, the system will display screen to enter patient details, select locality and begin testing. | | **Alternative Flow:** Screen doesn’t display due to errors with clinician/patient log in. |
| **Post Conditions:** Clinician will set up the cognitive tests for the user to participate in. | | |

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| **ID:** P6 | **Name:** Setup Game | |
| **Actors:** Clinician | | **Preconditions:** Patient ID entered, locality selected, introductory page displayed |
| **Main Flow:** N/A | | **Alternative Flow:** Errors setting up game, button link from introductory not working. |
| **Post Conditions:** Patient ready to do assessment | | |

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| **ID:** P7 | **Name:** Play Game | |
| **Actors:** Patient | | **Preconditions:** The clinician is logged in, the current SDSA test session is patient specific and the initial game has been set up by the clinician. |
| **Main Flow:** To begin the loop within the overall uses cases. On the application, the patient will view the instructions for each of the five cognitive tests, before completing them to the best of their ability by clicking the ‘next’ button at the end of each test to begin the subsequent test, until the last test is completed, allowing the next use case to begin. | | **Alternative Flow:** The instructions do not display, possibly resulting in invalid results as the user may not fully understand the tests.  Patient isn’t able to access the next game, as they cannot finish a game due to ambiguity or other errors. |
| **Post Conditions:** The system can collect a score from each cognitive test completed by the patient to enable the final pass/fail score to be generated and stored later in the system. | | |

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| **ID:** P8 | **Name:** Calculate Score | |
| **Actors:** N/A | | **Preconditions:** Patient completes each cognitive game. |
| **Main Flow:** Using the various attributes of each game such as number of answer correct/incorrect and time, the system uses a specific algorithm method to calculate a percentage outcome of each game, these scores will be used to generate the final score later in the system. | | **Alternative Flow:** Score cannot be calculated as user attempts to finish game before completing the current task. |
| **Post Conditions:** Each calculated score will be added to the database, and final pass/fail score generated for the patient. | | |

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| **ID:** P9 | **Name:** Send Score | |
| **Actors:** N/A | | **Preconditions:** The score has been calculated/formatted to a percentage |
| **Main Flow:** The relevant scoring metric from each game will be added to the database, with a foreign key of the patient ID to ensure the scores are patient specific. To exit the loop of this process, the user must complete all five cognitive tests. | | **Alternative Flow:** Unable to save to database, due to being offline. Score is incorrect format. Game ends before score can be taken. |
| **Post Conditions:** Generate the Pass/Fail score using the scores from each game in the database for the specific patient participating. | | |

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| **ID:** P10 | **Name:** Generate Pass/Fail | |
| **Actors:** N/A | | **Preconditions:** All games have been completed relevant scores have been sent to database |
| **Main Flow:** Using the relevant scoring metrics from each game from the database as parameters, an algorithm will be used to identify if the patient has passed or failed the SDSA if the final percentage is above or below the boundary. | | **Alternative Flow:** Not all metrics are take correctly, e.g. error causes application to close. Any anomalies with individual test score parameters. Database can’t be accessed to retrieve scores. |
| **Post Conditions:** Save final score to database and display the final outcome to the patient. | | |

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| **ID:** P11 | **Name:** Save Final Score in Database | |
| **Actors:** N/A | | **Preconditions:** Pass/Fail for the patient has been generated. |
| **Main Flow:** The final score (pass/fail) generated in the previous use case will be saved to the database for that specific patient, this will be stored securely for later reference. | | **Alternative Flow:** Table is not set up to save the final score. Final score isn’t in the correct data format. |
| **Post Conditions:** Display the score to the patient. | | |

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| **ID:** P12 | **Name:** View Score | |
| **Actors:** Patient | | **Preconditions:** Score generated and saved in the database. |
| **Main Flow:** The application will display to the patient if they have passed or failed the SDSA. | | **Alternative Flow:** Screen doesn’t display correct score System cannot retrieve score from database. |
| **Post Conditions:** Return score to user, return tablet to clinician. | | |

Secondary Use Cases – Clinician User Experience

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| **ID:** S1 | **Name:** Load Application | |
| **Actors:** Clinician | | **Preconditions:** Tablet acquired by clinician |
| **Main Flow:** To begin the SDSA, the clinician will load the android application on the tablet | | **Alternative Flow:** Tablet is unable to load the application due to compatibility or errors. Application is not downloaded on specific tablet Tablet doesn’t have sufficient battery power to load. |
| **Post Conditions:** Clinician is able to log in allowing patients to complete the SDSA | | |

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| **ID:** S2 | **Name:** Log In |
| Please Refer to Use Case ID: P1 | |

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| **ID:** S3 | **Name:** Setup game |
| Please Refer to Use Case ID: P6 | |

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| **ID:** S4 | **Name:** Read Instructions | |
| **Actors:** Clinician, Patient | | **Preconditions:** Game is Setup on the tablet and is ready to be played. |
| **Main Flow:** As each game has a different set of instructions, the clinician will read the instructions for each game to ensure the patent fully understands the cognitive test they are about to complete, to avoid any ambiguity issues that may result in invalid scores. | | **Alternative Flow:** Screen doesn’t display correct game instructions before the current test. Patient doesn’t fully understand the instructions, clinician required to repeat instructions. |
| **Post Conditions:** Patient is ready to participate in the SDSA cognitive tests on the tablet | | |

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| **ID:** S5 | **Name:** Hand Tablet to Patient | |
| **Actors:** Clinician, Patient | | **Preconditions:** Instructions for the current test have been read to the patient. |
| **Main Flow:** To enable the patient to interact with the system and participate in the cognitive tests, the clinician must physically hand the tablet containing the SDSA application to the patient. | | **Alternative Flow:** n/a |
| **Post Conditions:** Patient completes cognitive tests. | | |

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| **ID:** S6 | **Name:** Patient Completes Game | |
| **Actors:** Patient | | **Preconditions:** Patient is in possession of the tablet with the current game set up correctly. |
| **Main Flow:** The patient interacts with the tablet to complete each of the five tests by following the instructions stated earlier by the clinician prior to being handed the tablet. | | **Alternative Flow:** patient doesn’t click the finish button. Patient skips a section of the test Patient completes game incorrectly |
| **Post Conditions:** Patient returns the tablet to the clinician after each test | | |

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| **ID:** S7 | **Name:** Return Tablet to clinician | |
| **Actors:** Patient, Clinician | | **Preconditions:** The current cognitive test of the SDSA has been completed by the patient. |
| **Main Flow:** The patient will show they have finished the current test and are ready for the next test or the end of the five tests, the Next or Finish button will be clicked and the tablet will be handed back to the clinician. | | **Alternative Flow:** N/A |
| **Post Conditions:** Clinician views final score from tablet screen | | |

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| **ID:** S8 | **Name:** Clinician views score | |
| **Actors:** Clinician | | **Preconditions:** Tablet has been returned to clinician from the patient. |
| **Main Flow:** Clinician can view the patients score of each game that has been calculated by the system. | | **Alternative Flow:** |
| **Post Conditions:** Return to set up the next game and cycle through the loop again. | | |

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| **ID:** S9 | **Name:** View Pass/View | |
| **Actors:** Patient, Clinician | | **Preconditions:** Loop has been exited after completing all five tests and handing tablet back to clinician. |
| **Main Flow:** The final score will be calculated for the clinician to view from the database on the application | | **Alternative Flow:** System cannot retrieve score from database. Error calculating score. Retrieve wrong patients score. Score inaccurate. |
| **Post Conditions:** Share score will patient. | | |

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| **ID:** S10 | **Name:** Display Pass/Fail to patient | |
| **Actors:** Clinician, Patient | | **Preconditions:** Patient’s Pass/Fail score retrieved from database |
| **Main Flow:** The clinician will share the calculated pass or fail score to the specific patient to share if they are able to resume driving again after their stroke. | | **Alternative Flow:** System doesn’t display score on screen. |
| **Post Conditions:** Close SDSA application | | |