

Coursework Test Plan – 5COSC019C Object Oriented Programming

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Objective: To ensure that the coded application functions as expected and meets the requirements specified in the coursework description.

Scope: The test plan covers all the management actions of the console application: adding a new doctor, deleting a doctor, printing the list of doctors, saving, and reading information from a file, and adding consultation details for doctors. The functionality of the program, exception handling, wrong inputs, and possible crashes of application are tested. The test plan also covers the functionality of the User GUI application.

Test Environment: The test plan will be executed on a Windows 11 machine with 16GB of RAM and an Intel Core i7 processor. The Java version will be Java Version 17.0.2.

Test Cases:

Test Id	Test Case	Instructions / Steps	Expected Result	Actual Result	Status
C1	Program initialises correctly.	Run the “Main.java” file in IDE	The program should start and display prompt to load previously saved file.	The program does start and display prompt to load previously saved file.	Pass
C2	The menu is printed correctly.	After running the program, select “n” to the load data prompt.	The program should display a menu with six options for the manager and a quit option.	The program does display a menu with six options for the manager and a quit option.	Pass

C3	Add a new doctor	From the console menu, select "Add a new doctor" option and add a new doctor with all relevant and correct information.	The system should display the details of the added doctor, a message saying "Dr.{Surname of doctor} was successfully added to the centre." and the total number of doctors in the centre.	The system does display the details of the added doctor, a message saying "Dr.{Surname of doctor} was successfully added to the centre." and the total number of doctors in the centre.	Pass
C4	Delete a doctor	From the menu, select option to "Delete a doctor", and enter the medical licence number of a doctor to delete.	The system should display the information of the doctor that has been deleted, a message saying "Dr.{Surname of doctor} was removed." and the total number of doctors in the centre.	The system does display the information of the doctor that has been deleted, a message saying "Dr.{Surname of doctor} was removed." and the total number of doctors in the centre.	Pass
C5	Request the list of doctors.	Select the "View list of doctors" option from the console menu to view the doctors	The system should display a list of all doctors in the centre, sorted alphabetically by surname and a list of doctors with all their details also sorted alphabetically by surname.	The system does display a list of all doctors in the centre, sorted alphabetically by surname and a list of doctors with all their details also sorted alphabetically by surname.	Pass
C6	Save information in a file	Select the "Save to a file" option to save to a file from console menu	The system should create a data file and save all relevant doctor data in it.	The system does create a data file and save all relevant doctor data in it.	Pass
C7	Read information from a file on start of program	Enter "y" when the application first starts and ask to load data from file.	The system should read the information from the file and add saved doctor data back to the console application.	The system does read the information from the file and add saved doctor data back to the console application.	Pass

C8	Read information from a file after program starts	Select the "Load from a file" option to load data from file from console menu, then confirm the prompt asking to overwrite current doctor data	The system should read the information from the file and overwrite the current doctor data with saved doctor data.	The system does read the information from the file and overwrite the current doctor data with saved doctor data.	Pass
C9	Run a fresh instance of application without loading previous data.	When the application starts, enter "n" to loading saved doctors prompt	The system should not load from the file and start a fresh instance with no doctors added.	The system does skip loading from the file and starts a fresh instance with no doctors added.	Pass
C10	Entering wrongly formatted text for birthday.	When adding a birthday of a doctor, enter wrong input that does not match the date format (yyyy-MM-dd).	The system should display "Date should be formatted as "yyyy-MM-dd". yyyy- year, MM – month, dd – day." and prompt to enter data again.	The system does display "Date should be formatted as "yyyy-MM-dd". yyyy- year, MM – month, dd – day." and prompts to enter data again.	Pass
C11	Entering an invalid year, month, and date for birthday.	When adding a birthday of a doctor, enter invalid month, day or year. (Ex: Year: 123456, Month: 96, Day: 420)	The system should display "Error! Enter a valid year, month and/or day for the date of birth." and prompt to enter data again.	The system does display "Error! Enter a valid year, month and/or day for the date of birth." and prompts to enter data again.	Pass
C12	Entering a future date for the birthday.	When adding a birthday of a doctor, enter a future date as the birthday	The system should display "Error! Birthday cannot be in the future!" and prompt to enter data again.	The system does display "Error! Birthday cannot be in the future!" and prompts to enter data again.	Pass
C13	Entering an invalid phone number.	When adding the phone number of a doctor, enter a invalid phone number which is not formatted as XXX-XXX-XXXX.	The system should display "Not a valid phone number! Phone number should be formatted as XXX-XXX-XXXX" and prompt to enter the phone number again.	The system does display "Not a valid phone number! Phone number should be formatted as XXX-XXX-XXXX" and prompts to enter the phone number again.	Pass

C14	Adding a doctor when the maximum number of doctors are already added.	When 10 doctors are already added, select add doctor option from menu.	The system should display "Error! Maximum number of doctors reached." and go back to main menu.	The system does display "Error! Maximum number of doctors reached." and goes back to main menu.	Pass
C15	Adding a doctor with same medical licence number of an already added doctor.	When adding a doctor, for the medical licence number enter an already existing doctor's medical licence number.	The system should display "Error! A doctor with the same medical licence number already exists." and go back to menu.	The system does display "Error! A doctor with the same medical licence number already exists." and goes back to menu.	Pass
C16	Deleting a doctor when there are no doctors added.	On a fresh instance of the program, select delete a doctor option from menu.	The system should display "There are no doctors added" and go back to main menu.	The system does display "There are no doctors added" and goes back to main menu.	Pass
C17	Entering a non-existing doctor's medical licence number when deleting a doctor.	From menu, select delete a doctor option, and enter invalid medical licence number.	The system should display "A doctor with matching medical licence number was not found. Try again with a medical licence number of an existing doctor." and go back to menu.	The system does display "A doctor with matching medical licence number was not found. Try again with a medical licence number of an existing doctor." and goes back to menu.	Pass
C18	When listing doctors sorted alphabetically checking if it alters the order of the doctors added.	Add 10 doctors to program in a specific order, select the "view list of doctors" option from menu (this should be listed sorted), then load GUI application and select view doctors.	Doctors should be in the order they were added and not already sorted alphabetically.	Doctors are in the order they were added and are not already sorted alphabetically.	Pass
C19	Viewing doctors without adding doctors to the program.	On a fresh instance of the program, select "view list of doctors" option from menu.	The system should display "There are no doctors" and go back to main menu.	The system should display "There are no doctors" and go back to main menu.	Pass

C20	Loading from file when file is non-existent.	Delete the file from directory and select the option to load from file from the menu.	They system should display "Error! Unable to locate the data file or read the data file. Make sure the file exists, check for file permission, and try again" and go back to main menu.	They system does display "Error! Unable to locate the data file or read the data file. Make sure the file exists, check for file permission, and try again" and goes back to main menu.	Pass
C21	Save to a file without write access.	Make the data file read-only and run the program and select save to file.	The system should display "Error! Unable to write to file. Please check for file permission and try again" and go back to menu.	The system does display "Error! Unable to write to file. Please check for file permission and try again" and goes back to menu.	Pass
C22	Saving to file without the file already existing.	Delete if a data file already exists and load the program, add some doctors, and select save to file option from console menu.	The program should create a new file and save doctor data to that file.	The program does create a new data file named "skinconsultationdoctordata" and save doctor data to that file.	Pass
C23	Adding consultation date/times to a doctor	After adding a doctor, select option "C" from the menu and enter all the required details correctly.	The program should add consultation date/time details to the specific doctor and display "Consultation time slot for Dr.XXXX added successfully!".	The program does add consultation date/time details to the specific doctor and display "Consultation time slot for Dr.XXXX added successfully!".	Pass
C24	Adding a consultation date/time which is in the past.	After adding a doctor, select option "C" from the menu and enter doctor's medical licence number and add enter a date in the past.	The program should display "Error! Doctor available time cannot be in the past!" and should prompt to enter date/time again.	The program does display "Error! Doctor available time cannot be in the past!" and prompts to enter date/time again.	Pass
C25	Adding a consultation with incorrectly formatted time.	After adding a doctor, select option "C" from the menu and enter doctor's medical licence	The program should display "Time should be formatted as "HH:mm".	The program does display "Time should be formatted as "HH:mm". HH- hours, mm	Pass

		number and enter correct date and an invalid time.	HH- hours, mm – minutes” and prompt user to enter date and time again.	– minutes” and prompts user to enter date and time again.	
C26	Entering invalid duration for consultation time	After adding a consultation date/time correctly, enter an invalid input for duration. (Ex: String)	The program should display “Error! Enter an integer!” and prompt to add duration again.	The program does display “Error! Enter an integer!” and prompts to add duration again.	Pass
C27	Entering more than 8 hours for duration.	After adding consultation date/time correctly, enter a number higher than 8 for duration.	The program should display “Duration cannot be zero, negative or more than 8 hours!” and prompt to add duration again.	The program does display “Duration cannot be zero, negative or more than 8 hours!” and prompts to add duration again.	Pass
C28	Program saves doctor data and exists on user command.	When program is running, select quit option from menu, then enter “y” to save data prompt.	Program should save data to the file, display “Doctor data was successfully saved. Quitting...” and quit.	Program does save data to the file, displays “Doctor data was successfully saved. Quitting...” and quits.	Pass
C29	Exit program without saving data	When program is running, select quit option from menu, then enter “y” to save data prompt.	Program should display “Quitting...” and quit.	Program does display “Quitting...” and quits.	Pass
G1	Load user GUI application.	Run the “UserApplication” file.	The main page of GUI should be loaded in a new window.	The main page of GUI is loaded in a new window.	Pass
G2	View doctors with relevant details.	With User GUI running, press “View Doctors” button.	The existing window should be closed and a new window with a table of doctors should be opened.	The existing window does close and a new window with a table of doctors does open.	Pass

G3	Sort list of doctors	In the "View list of doctors" window, press "Sort Alphabetically" button.	The doctors in the table should be sorted alphabetically by their surname.	The doctors in the table are sorted alphabetically by their surname.	Pass
G4	Going back to home window	When in any other window, press "Go Back" button.	The current window should be closed, and home window "Skin Consultation Centre" should be opened.	The current window is closed, and home window "Skin Consultation Centre" is opened.	Pass
G5	Going to add consultation window.	From home page, press "Add Consultation" button	The current window should be closed, and home window "Add Consultation" should be opened.	The current window is closed, and home window "Add Consultation" is opened.	Pass
G6	Check availability of doctor in specific date/time	In "Add Consultation" window, select a doctor from the combo box and enter a valid date and time and press "Check" button.	A message popup should be displayed with the message "Dr.{Surname of doctor} is available for consultation."	A message popup is displayed with the message "Dr.{Surname of doctor} is available for consultation."	Pass
G7	Check availability of in specific date/time when doctor does have a consultation timeslot or the time is already booked for consultation.	After adding a consultation in specific time, enter the same date and time and press "check" button.	A message popup should be displayed with the message "Dr.{Surname of doctor} is unavailable. Selecting a random doctor" and selected random doctor details should be displayed on the doctor information text area.	A message popup is displayed with the message "Dr.{Surname of doctor} is unavailable. Selecting a random doctor" and selected random doctor details are displayed on the doctor information text area.	Pass
G8	When checking for time/date for consultation entering a past date.	When adding consultation, enter a past date and click "Check" button.	A message popup with the message "Please select a future date and time!" should be displayed.	A message popup with the message "Please select a future date and time!" is displayed.	Pass

G9	Adding the information of a new patient.	After filling all the relevant fields, click "Check ID" button.	A message popup with the message "New Patient! First consultation will be £15 per hour." should be displayed.	A message popup with the message "New Patient! First consultation will be £15 per hour." is displayed.	Pass
G10	Adding information of an already existing patient.	After filling all relevant fields, including the "Patient ID" field, click "Check ID" button.	A popup with the message "Welcome back! Your consultation will be £25 per hour" should be displayed.	A popup with the message "Welcome back! Your consultation will be £25 per hour" is displayed.	Pass
G11	Add cost, notes and images to consultation and booking consultation.	After filling the previous fields, add cost (based on whether it's users first consultation or not), add notes, click "Upload Image", select image file and press "Book Consultation" button.	A window with all added information including the duration (calculated from the cost), encrypted notes and image text should be displayed.	A window with all added information including the duration (calculated from the cost), encrypted notes and image text is displayed.	Pass
G12	Decrypt and view notes and image.	In the "Consultation Details" window, press "Decrypt and view" button.	The encrypted text of note and images should be decrypted and should be displayed to the user.	The encrypted text of note and image are decrypted, and the note and the image are displayed to the user.	Pass
G13	View added consultations	In the home page, click "View consultations" button.	A new window with a table filled with relevant added consultations' details should be displayed.	A new window with a table filled with relevant added consultations' details is displayed.	Pass

Test Acceptance Criteria:

Console Application

1. Manager should be able to add and delete doctors as specified in the coursework description.

2. Manager should be able to print the list of doctors in the correct sorting order.
3. Manager should be able to save to a file on their command.
4. Manager should be able to load doctor data on application start.
5. Manager should be able to load doctor data on their command.
6. Manager should be able to add consultation details for doctors.
7. Manager should be able to exit program on their command.

GUI Application

1. The GUI application should be able to visualise the list of doctors with relative information.
2. Alphabetical sorting feature should work as intended by ensuring that the list is correctly sorted when the sort button is clicked.
3. User should be able to select a doctor and add a consultation.
4. User should be able to check the availability of the doctor in specific date/time.
5. User should be able to book a consultation for a specific date and time. If the doctor is not available, another doctor should be allocated randomly.
6. User should be able to add patient information, including name, surname, date of birth, gender, mobile number, and patient ID.
7. User should be able to enter and save the cost for the consultation, and the correct cost should be calculated based on the length of the consultation and whether it is the first consultation for the patient.
8. User should be able to add some notes, or images. That the data should be stored encrypted.
9. User should be able to view the added consultation with all stored information.
10. User should be able to temporarily decrypt and view notes and images after adding the consultation.
11. User should be able to view previously added consultations with limited information.

Review and Revision: The test plan was reviewed and revised as needed throughout the testing process to ensure that it covers all relevant functionality and meets all the acceptance criteria.