

Amira Mohamed (219311869)

Reporting bugs:

Problem Report Form	
Problem report number	1
Reported by	Amira Mohamed
Date reported	March 23, 2024
Program/Class name	AddPhysicianGUI class
Report type	Coding/Design issue
Severity	High
Problem summary	Physician can be added without their complete information
Problem description and how to reproduce it	Run the "RoleSelectionGUI" and log in as an admin with user "admin" and password "pass". Click on "Hire Physician" to add a physician to the hospital. The problem is that the physician can be added even if the fields of the form are not complete. This means that the hospital system will not the full information of the physician and thus the physician can be added with no first name, last name, age, gender, address.
Suggested fix	The code must ensure that all the personal information fields are filled by the user before allowing the addition of a physician. If any of these fields are left empty, the system should prevent the physician addition process and prompt the user to provide the missing information.

Problem Report Form	
Problem report number	2
Reported by	Amira Mohamed
Date reported	March 23, 2024
Program/Class name	AddPhysicianGUI class
Report type	Coding/Design issue
Severity	High
Problem summary	Physician can be added without having a first name and last name
Problem description and how to reproduce it	Run the "RoleSelectionGUI" and log in as an admin with username "admin" and password "pass". Click on "Hire Physician" to add a physician to the hospital. Complete the "Add physician" page with age, gender, address, and specialty for the physician information and leave the first name and last name fields blank. Also add a username and password to create an account. The physician will be successfully added to the hospital which means that the physician will have no first name nor last name. Then return to the dashboard and sign out as an admin and log in with the newly created account. The physician was able to login, and he will be directed to the patient portal.

Suggested fix	The code should include validation checks to ensure that all required fields, including first name and last name, are filled in before allowing the addition of a physician to the hospital. If any essential fields are missing, the system should prompt the user to complete them before proceeding with the physician addition process. Additionally, informative messages should be displayed to guide users on the specific fields that require input.
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Problem Report Form	
Problem report number	3
Reported by	Amira Mohamed
Date reported	March 23, 2024
Program/Class name	AddPhysicianGUI class
Report type	Coding/Design issue
Severity	High
Problem summary	Physician can be added with a username and no password.
Problem description and how to reproduce it	Run the "RoleSelectionGUI" and log in as an admin with user "admin" and password "pass". Click on "Hire Physician" to add a physician to the hospital. Fill out the "Add physician" page with the physician information, ensuring to include a username while leaving the password field blank. The physician will be successfully added to the hospital with only a username and no password. Then return to the dashboard and sign out as an admin and log in with the newly created username. The physician gains access to the system without entering a password and is directed to the patient portal. This oversight poses a significant security risk, allowing unauthorized access to sensitive patient information
Suggested fix	The code should verify that both a username and password are provided before adding a physician to the hospital. If either field is missing, the addition process should be suspended, prompting the user to input both username and password before proceeding. This precautionary measure ensures that only physicians with complete login credentials are granted access to the system, enhancing security, and preventing unauthorized entry.

Problem Report Form	
Problem report number	4
Reported by	Amira Mohamed
Date reported	March 23, 2024
Program/Class name	AddPhysicianGUI class

Report type	Coding/Design issue
Severity	High
Problem summary	Physician can be added without creating an account
Problem description and how to reproduce it	Run the "RoleSelectionGUI" and log in as an admin with username "admin" and password "pass". Click on "Hire Physician" to add a physician to the hospital. Fill out the "Add physician" page with the physician information but leave the "username" and "password" fields incomplete. The physician is successfully added to the hospital system despite the incomplete fields. Consequently, the physician gains access to the patient portal without providing valid login credentials, posing a security risk.
Suggested fix	To address this issue, the code should verify that the physician has a valid account with both a username and a password. If either of these fields is incomplete or missing, the system should indicate that there is no valid account associated with the physician, thereby preventing access to the patient portal until the required login information is provided and a valid account is created.

Problem Report Form	
Problem report number	5
Reported by	Amira Mohamed
Date reported	March 23, 2024
Program/Class name	AddPhysicianGUI class
Report type	Coding/Design issue
Severity	Medium
Problem summary	No pop-up message to indicate that wrong type was added for age.
Problem description and how to reproduce it	Run the "RoleSelectionGUI" and log in as an admin with user "admin" and password "pass". Click on "Hire Physician" to add a physician to the hospital. Fill out the "Add physician" page with the physician information but enter a string for the age field. There will be an exception in the console " java.lang.NumberFormatException " but no pop-up message for the user to indicate a wrong data type.
Suggested fix	The code should verify that the user enters valid data type for the fields. If any of these fields has wrong data type, informative messages should be displayed to guide users on the specific data types required for the fields.

Problem Report Form	
Problem report number	6
Reported by	Amira Mohamed
Date reported	March 23, 2024
Program/Class name	AddPhysicianGUI class
Report type	Coding/Design issue
Severity	High
Problem summary	Physician can enter wrong data type for the first and last name
Problem description and how to reproduce it	Run the "RoleSelectionGUI" and log in as an admin with user "admin" and password "pass". Click on "Hire Physician" to add a physician to the hospital. Fill out the "Add physician" page with the physician information but enter an integer for the first name and last name fields. There will no error and no warning message to the user to indicate that a wrong data type was entered.
Suggested fix	The code should verify that the user enters valid data type for the fields. If any of these fields has wrong data type, informative messages should be displayed to guide users on the specific data types required for the fields.

Problem Report Form	
Problem report number	7
Reported by	Amira Mohamed
Date reported	March 23, 2024
Program/Class name	FirePhysicianGUI
Report type	Coding/Design issue
Severity	Medium
Problem summary	No pop-up message to confirm that the physician was resigned successfully.
Problem description and how to reproduce it	When you login as admin in the RoleSelectionGUI with user "admin" and password "pass", click on "Fire physician" button. Select the physician to be removed from the drop-down menu and click on "Remove Selected Physician". The issue is that there is no message about the process state. The physician will be removed from the list of the drop-down menu but no message popped-up to confirm that it was successfully removed.
Suggested fix	The code should add a pop-up informative message to confirm whether the removal was successful or not.

Problem Report Form	
Problem report number	8

Reported by	Amira Mohamed
Date reported	March 23, 2024
Program/Class name	AddPhysicianGUI class
Report type	Coding/Design issue
Severity	High
Problem summary	The sequence of the id of the physician that are added is not consistent.
Problem description and how to reproduce it	When you add a physician to the hospital system, the id assigned for each physician is not consistent. There is no sequence for the id assign for the physician which can lead to conflicts when duplicate IDs are assigned. This means a problem arise when an id gets assigned to the physician where this id already exists for another physician.
Suggested fix	The code should implement a sequential numbering system for physician IDs when the physician gets hired to ensure consistency and avoid conflicts.

Problem Report Form	
Problem report number	9
Reported by	Amira Mohamed
Date reported	March 24, 2024
Program/Class name	FirePhysicianGUI
Report type	Coding/Design issue
Severity	Medium
Problem summary	The system does not prevent the user from using the resign and removal button even if there no physician in the hospital.
Problem description and how to reproduce it	When you login as admin in the RoleSelectionGUI with user "admin" and password "pass", click on "Fire physician" button. The physician list in the drop-down menu is empty, however, you can still use the remove physician functionality and you can click on "Remove Selected Physician". The issue is that there is no message about the process state. The physician will be removed from the list of the drop-down menu but no message popped-up to confirm that it was successfully removed.
Suggested fix	The code should add a pop-up informative message to say that the physician list is empty and therefore, the removing functionality is disabled.

Problem Report Form	
Problem report number	10
Reported by	Amira Mohamed
Date reported	March 24, 2024
Program/Class name	AddPhysicianGUI
Report type	Coding/Design issue
Severity	High
Problem summary	The system should prevent the password to be less than 6 characters for security purposes
Problem description and how to reproduce it	Run the "RoleSelectionGUI" and log in as an admin with user "admin" and password "pass". Click on "Hire Physician" to add a physician to the hospital. Fill out the "Add physician" page with the physician information but enter one digit for the password. The issue is that the code will allow the physician to have no characters at all for the password which is not secure.
Suggested fix	The code should add a check that the password is 6 characters or more and display informative message to confirm whether this condition is met or not.

Code smells:

Code Smell 1	
Description	The "RoleSelectionGUI" class contains duplicated code for button functionality. Each of the "nurseButton", "doctorButton", and "adminRole" buttons has the same code block for their action listeners. This duplication violates the DRY (Don't Repeat Yourself) principle and makes the code harder to maintain.
Impact	<ol style="list-style-type: none"> 1) Code redundancy increases the risk of errors and inconsistencies. 2) It violates the DRY principle, leading to reduced code quality and readability. 3) Maintenance becomes more challenging as changes need to be done in multiple places (for each button).
Recommendation	Refactor the code to eliminate duplication by creating a separate method for the common functionality and call it from each button's active listener. This approach follows the DRY principle and improve the maintainability of the code.

Code Smell 2

Description	The “AddPhysicianGUI” lacks comments on the code which makes it harder for the developers to understand the code and the functionality of the methods in the class. Also, the classes “RoleSelectionGUI”, “AddPhysicianGUI”, “FirePhysicianGUI”, “LoginGUI” and “AdminGUI” do not have many comments.
Impact	It can be confusing for the others who is reading or testing the code.
Recommendation	Add comments for the methods and their functionality and what is expected from the code to do.

Code Smell 3	
Description	The “RoleSelectionGUI” prompt the user to enter a username when adding a physician to the hospital to create an account. But when the physician actually log in through the “LoginGUI”, it will be asked to enter a user and a password. Th
Impact	Inconsistency in variable naming can lead to confusion and make the code harder to understand.
Recommendation	Use consistent variable names throughout the code. The variable in the “LoginGUI” can be change to “username” to achieve consistency between the codes.