

1. Responsibility of Each Group Member

Frank Smith - Project Leader

Duties:

- 1) Proofread all work before it is submitted.
- 2) Write all weekly meeting minutes for group progress.
- 3) Remind all members of various due dates.
- 4) Write various sections of the projects documentation, and coding.

Member 1 - Project Coordinator

Duties:

- 1) Build all diagrams, tables and use cases.
- 2) Write project documentation, and various coding.
- 3) Build PowerPoint Presentation.

Member 2 - Project Developer

Duties:

- 1) Build various functions for the program.
- 2) Provide feedback, and written work for the project.
- 3) Build PowerPoint Presentation.

2. Meeting Minute Notes

Week of April 23rd, 2016

Coding issues are becoming present. While we are still aiming for a Monday completion date, testing will now begin on Sunday, May 1st, instead of April 30th. Corrections will be made on May 1st and May 2nd, and the completion date is scheduled for Tuesday, May 3rd. Writing the research paper will begin next Friday or Saturday, after the final presentation has been completed. The phase III paper is beginning to be completed, as various sections are trickling in from the designated members. Currently, I believe the project will be completed by the Wednesday, 10 PM due date.

Week of April 16th, 2016

I'm sorry I forgot to post this, I have so many projects going on that this slipped my mind. Last week, Member 1 updated all of the diagrams for phase III, and Member 2 was given the Graphical User Interface by me to complete the coding. All sections are on track for completion, but the coding section will be difficult with the two week constraint.

Week of April 9th, 2016

The group sections were being finalized, and the group met on Monday April 10th, to compile the document into its final form. The paper was posted on time, and complete with all sections needed for its submission.

Week of April 3rd, 2016

The group is currently running on time, and all tasks are being finalized. Based on the current schedule, the final deliverable for phase 2 will be distributed to all members on Monday evening, and any adjustments will be included on the posted document for Tuesday evening.

Week of March 27th, 2016

Currently everything is running on time - but due to the spring break, and the accompanying mid-term, phase II will be completed this weekend. We have designated various sections of the project, where Frank will be in charge of compiling the document with all of the various deliverables, as well as building the preliminary GUI for the program. Member 1 will build many of the various diagrams and models, and Member 2 is setting up the SQL server, and building the PowerPoint for the Presentation on April 7th. I believe we will run on time with the deliverable, and by having the due date pushed back, I have very little doubt that we will have any large problems.

Week of March 20th, 2016

Due to the spring break, and impending exam, no project work has occurred. On Saturday, March 26th, project sections will be sent out to all members, and the various project phase II sections will commence. So far, this team is working very well together, and I do not see any reasons for the project to fall behind on the timeline.

Week of March 6th, 2016

Group meetings were held on the 6th, 7th, and 8th to complete the Phase 1 deliverable, and prepare for the presentation. In addition, the group met early on the 10th to run through any questions before they were asked during the presentation.

We are on spring break for the following week, so there are currently no plans on meeting. We will need to meet virtually; however, since the research paper proposal is due on the 20th.

Week of February 21st, 2016

The team met with Dr. Song on Monday 2/29/2016, and provided our current materials for review. The team discussed the changes that needed to be made, and met

on 3/3/2016 to finalize the user stories, and build the DFD. We are currently on track, and need to build the PowerPoint once the document is finalized this weekend.

Week of February 21st, 2016

Our group met on Saturday the 20th, and completed the bulk of the phase 1 deliverable. Most of the written work has been completed, and it is currently being expanded upon. We have been in contact with each other throughout the week, increasing the completeness of the deliverable overall.

Our next meeting is at 4PM on 2/25/2016 to decide what additional tasks need to be worked on over the coming week.

Week of February 14th, 2016:

On **2/11/2016** the project leader sent the “Term Project Phase I” file to all members via Google Docs, providing everyone access to what is due, before class, on **3/8/2016**.

A group discussion, on the topic of the “Research Paper”, was started February 15th via e-mail by the project leader. The topic that has been chosen is “Cloud Computing for Mobile Users”. Each member will find an article to be evaluated by the team with a deadline of Saturday **2/20/2016** at 11:59 PM.

Following class on **2/18/2016**, team Binary will meet to discuss their strengths and weaknesses in relation to the given “phase I” requirements. Preliminary work will commence, and a group peer review will begin on **2/25/2016**. This will identify any issues that need to be improved, and provide help from other members when and if needed.

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1. Detailed Design

All included information has been enhanced, with the exception of the data flow diagram. This was included for reference when viewing the traceability table.

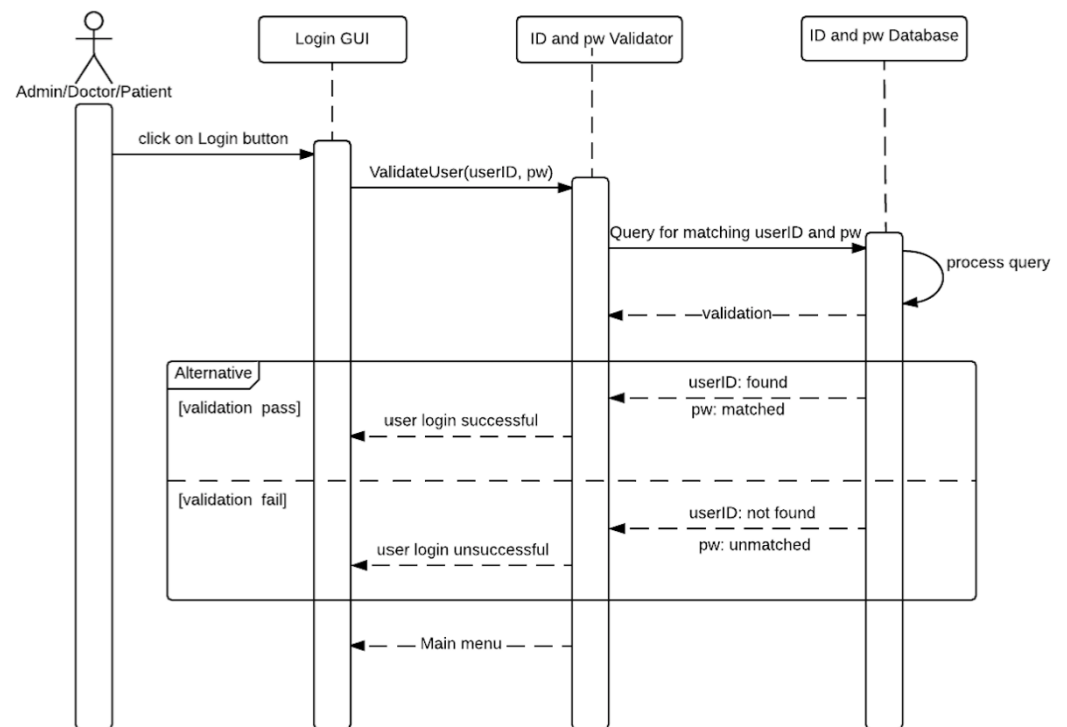
1.1 Module detailed design

1.1.1 Module 1 Detail – Login

Use Case Name: Login	ID: UC01
Primary Actor: Admin, Patient, Doctor	
Description: This use case describes how a user logs into the MedEasy system	
Trigger: The user clicks on “login”	
Precondition: The actor must be authorized	
Post condition: Login is successfully	
Basic Flow: <ol style="list-style-type: none">1. The system requests that the actor enter his/her ID and password.2. The actor enters his/her ID and password.3. The system validates the entered ID and password, and logs the actor into the system.4. The use case ends.	
<i>Alternative Flows:</i> <ol style="list-style-type: none">1. <i>Invalid Name / Password: If in the Basic Flow the actor enters an invalid name and/or password, the system displays an error message. The actor can choose to either return to the beginning of the Basic Flow, or cancel the login, at which point the use case ends.</i>	

Figure 1

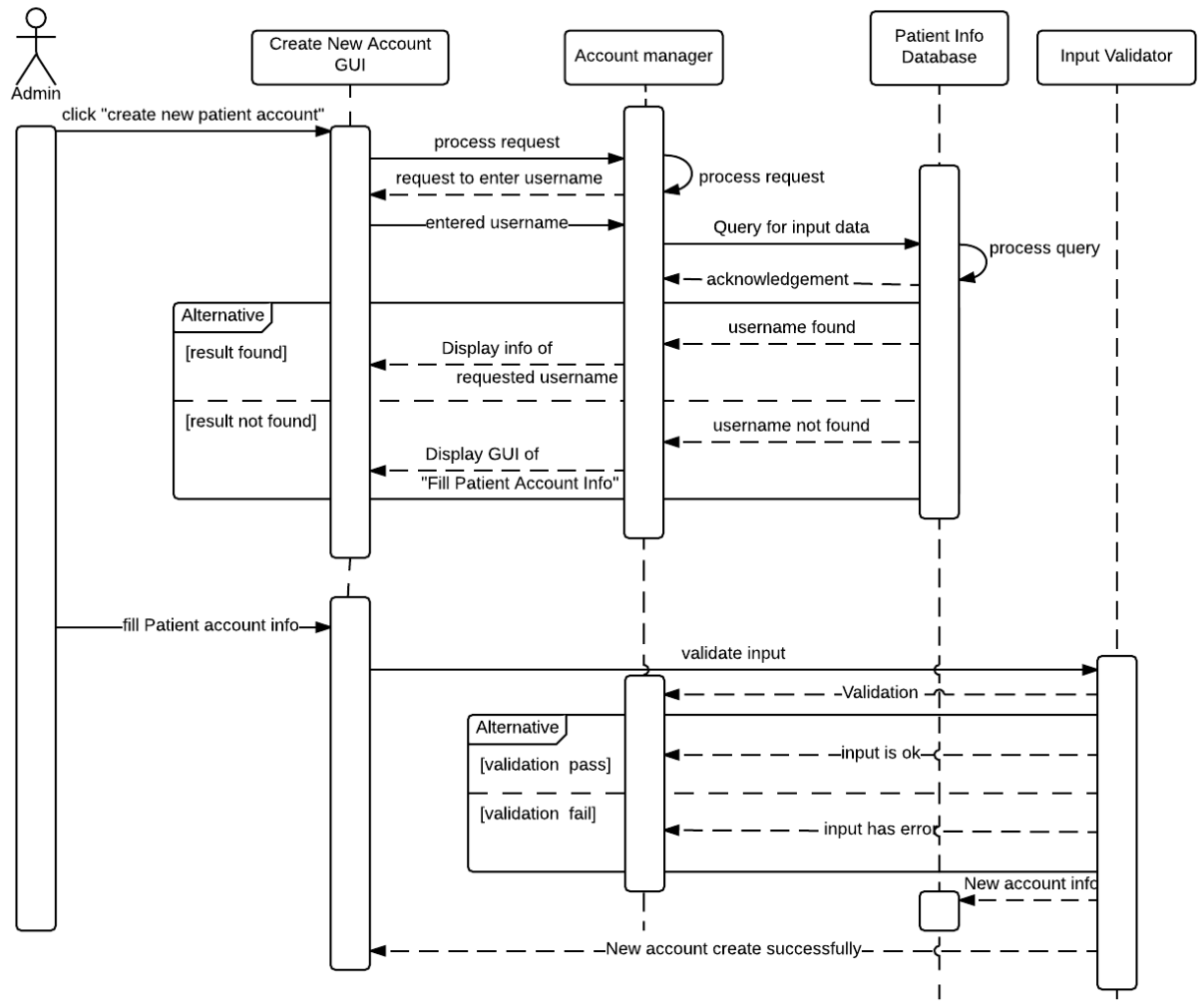
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1.1.2 Module 2 Detail - Create Patient Account

Use Case Name: Create patient account	ID: UC02
Primary Actor: Admin	
Description: This use case describes how an admin creates a new account for a patient	
Trigger: The user clicks “Create New Account”	
Precondition: The actor must be authorized	
Post-conditions: The new account has been created successfully	
<p>Basic Flow:</p> <ol style="list-style-type: none">1. The actor enters patient ID.2. The system’s database query if the username is existed.3. The new account creation page will be displayed if the username is not exiting.4. The system validates the entered Patient Account information.5. The Patients Account information is stored in the Patient Info database.6. The system displays a “New account created successfully” message.7. The use case ends.	
<p>Alternative Flows:</p> <ol style="list-style-type: none">1. List User’s Information: If the searched username has been found from the database, the information of the user will be displayed.2. User Enters Invalid Patient Account Information: During Create Account, if the system determines that the user entered invalid New Patient Account information, the following occurs:<ol style="list-style-type: none">1) The system describes which entered data was invalid, and presents the User with suggestions for entering valid data.2) The system prompts the User to re-enter the invalid information.3) The User re-enters the information and the system re-validates it.4) If valid information is entered, the Patient Account Information is stored.5) If invalid information is entered the invalid alternative flow is executed again. This continues until the User enters valid information, or chooses Cancel6) Invalid Patient Account information includes:<ul style="list-style-type: none">○ Missing information items○ Username already exists in the system○ Patient Account information entered does not comply to its definition in the glossary○ Improperly formed e-mail address	

Figure 2

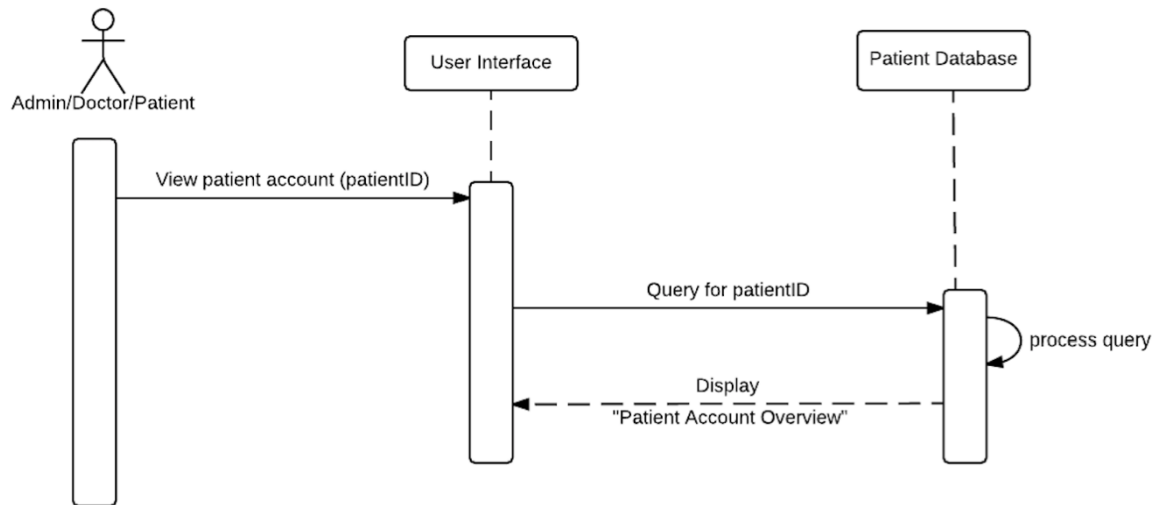


1.1.3 Module 3 Detail - Acquire Patient Information

Use Case Name: Acquire Patient Information	ID: UC03
Primary Actor: Admin, Doctor, Patient	
Description: This use case describes how an admin acquires a patients information from the system	
Trigger: The user enters the patient's ID	
Precondition: The user must be authorized, and the searching patient has to be an existing user	
Post condition: Acquired Patient Info successfully	
Basic Flow: <ol style="list-style-type: none">1. The actor enters the patient's ID in the search engine.2. The system displays the search results.3. The use case ends.	
Alternative Flows: <ol style="list-style-type: none">1. Search not found: If the actor entered an invalid patient ID, or non-existent patient ID	

Figure 3

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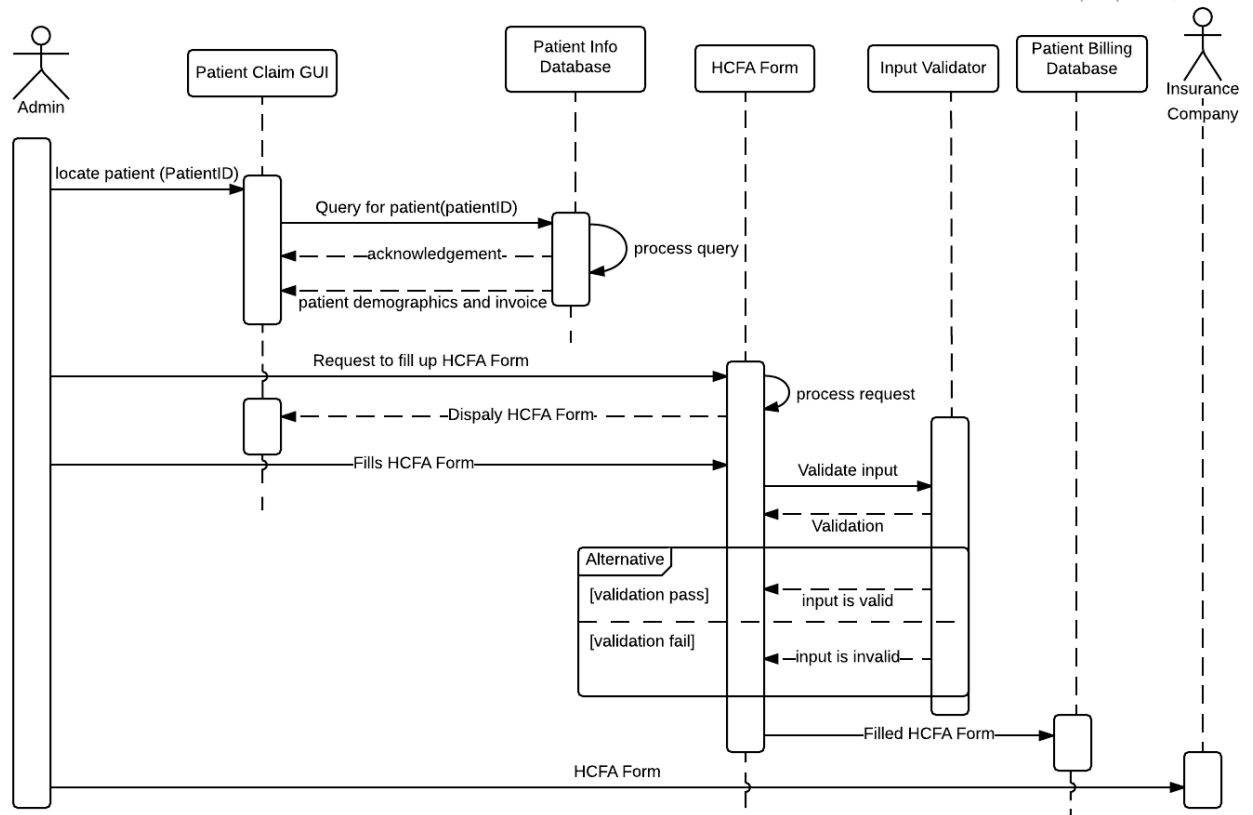


1.1.4 Module 4 Detail - File Claims

Use Case Name: File claims	ID: UC04
Primary Actor: Admin	
Passive Actor: Insurance Company	
Description: This use case describes how an admin files claims for patients	
Trigger: The user clicks “File Claim”	
Precondition: The user must be authorized, and the patient’s invoice has been produced for his/her visit	
Post condition: Claims have been filed, and stored in the Patient Billing data store	
<p>Basic Flow:</p> <ol style="list-style-type: none"> 1. The actor search’s for the patient using the patient’s ID. 2. The system returns the search results, including the patients demographic and insurance information. 4. The actor fills the HCFA claims form out for the patient. 5. The claim form will be stored in the Patient Billing data store. 6. The actor sends the claim form to the insurance company. 7. The use case ends. 	
<p><i>Alternative Flows:</i></p> <ol style="list-style-type: none"> 1. <i>The actor enters invalid information in the claim form: If the system determines that the user entered invalid information, the following occurs:</i> <ol style="list-style-type: none"> 1) The system displays a message when a field is required. 2) The system prompts the User to re-enter the invalid information. 3) The user re-enters the information, and the system re-validates it. 4) If valid information is entered, the Claim Form(HCFA) is stored. 5) If invalid information is entered, the Invalid alternative flow is executed again. This continues until the User enters valid information, or chooses Cancel. 6) Invalid Patient Account information includes: <ul style="list-style-type: none"> - Missing information items - The claim form information that is entered does not comply to its definition in the glossary - Improperly formed information, such as an email address. 	

Figure 4

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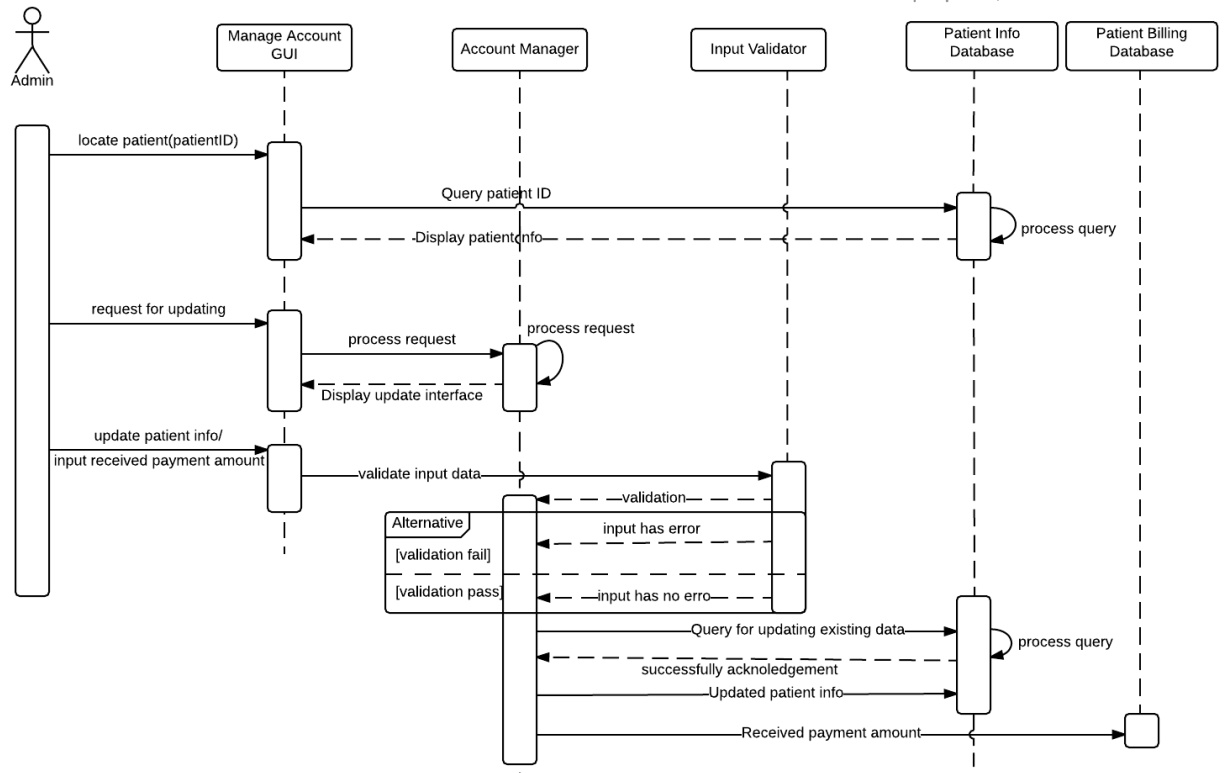


1.1.5 Module 5 Detail - Manage Patient Account

Use Case Name: Manage Patient Account	ID: UC05
Primary Actor: Admin	
Description: This use case describes how an admin manages a patients account	
Trigger: The user receives updated information for the patient, and/or payment from either the patient, or insurance company	
Precondition: The user must be authorized, and the claim has been approved by the insurance company	
Post condition: The patients account in Patient Account has been updated successfully	
<p>Basic Flow:</p> <ol style="list-style-type: none">1. The actor searches for the patient using their patient ID.2. The system returns the search results by displaying the patients account page.3. The actor updates the patient's information, including payments received from either the insurance company, patient, or both.4. The updated patient's info is stored in Patient Info Database, and the received payment information is stored in the Patient Billing Database.5. The use case ends.	
<p><i>Alternative Flows:</i></p> <p><i>1. The actor enters invalid information in the claim form: If the system determines that the user entered invalid information, the following occurs:</i></p> <ol style="list-style-type: none">1) The system displays a message when a field is required.2) The system prompts the User to re-enter the invalid information.3) The user re-enters the information, and the system re-validates it.4) If valid data is entered, the updated information is stored.5) If invalid data is entered, the Invalid alternative flow is executed again. This continues until the User enters valid information, or chooses Cancel.6) Invalid Patient Account information includes:<ul style="list-style-type: none">- Missing information items- The input data that is entered does not comply to its definition in the glossary- Improperly formed information, such as an email address	

Figure 5

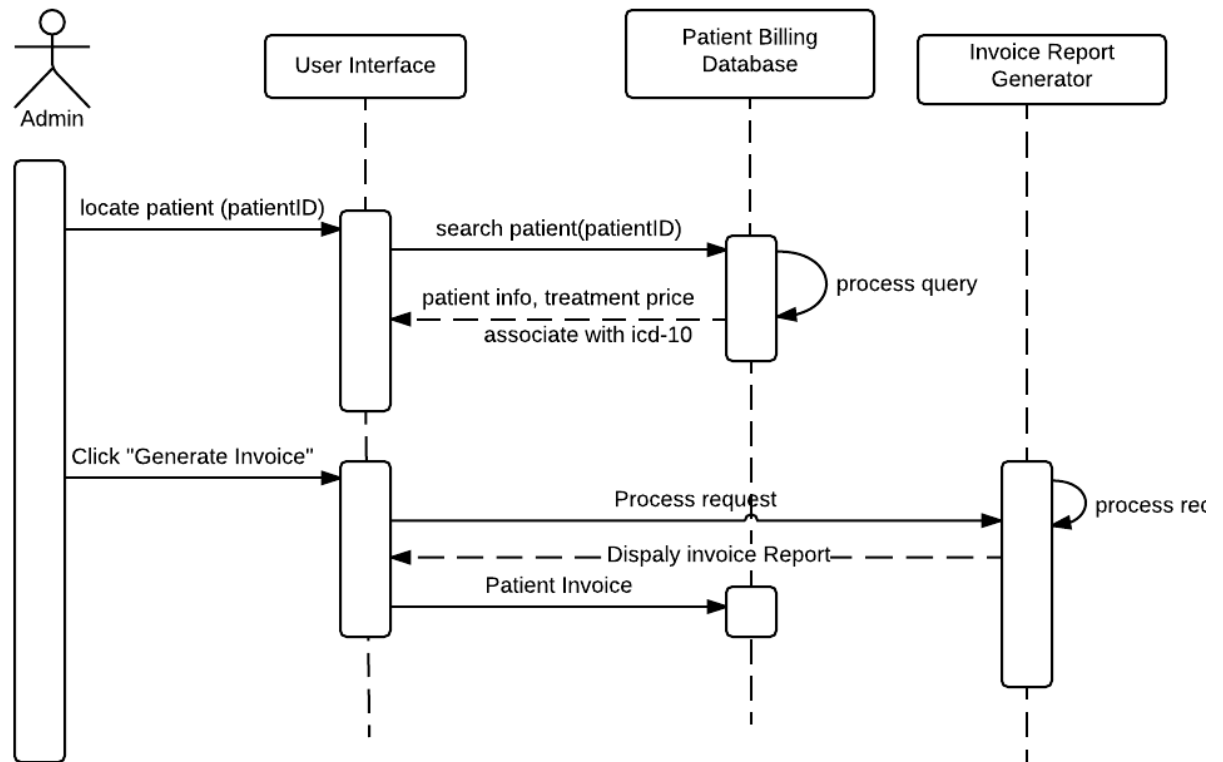
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1.1.6 Module 6 Detail - Produce Invoice

Use Case Name: Produce Invoice	ID: UC6
Primary Actor: Admin	
Description: This use case describes how an admin produces an invoice	
Trigger: The Admin clicks the “Produce Invoice” button	
Precondition: The doctor has input the ICD-10 code	
Post condition: Invoices have been produced and stored	
Basic Flow: <ol style="list-style-type: none">1. The actor searches for the patient using their patient ID.2. The system displays the patient’s information, including their ICD-10 codes, which are entered by patient’s doctor.3. The actor clicks “generate invoice” button.4. The new invoice is stored in the Patient Billing data store.5. The use case ends.	
<i>Alternative Flows:</i>	

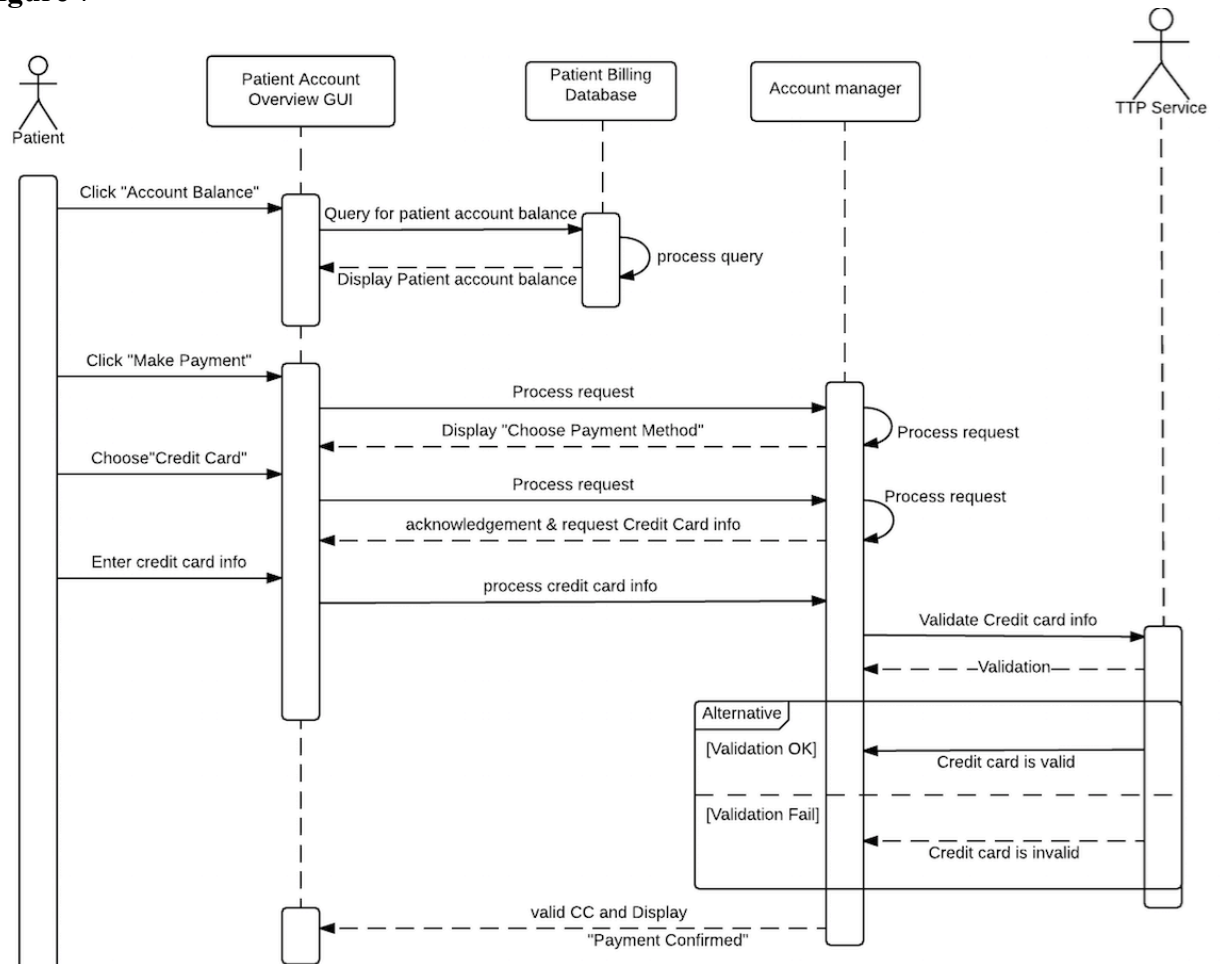
Figure 6



1.1.7 Module 7 Detail - Make Payment

Use Case Name: Make a Payment	ID: UC07
Primary Actor: Patient	
Description: This use case describes how a patient makes a payment.	
Trigger: The user saw the balance due in his/her account	
Precondition: The user must be authorized, and has bills that need to be paid	
Post condition: The system display “Payment Confirmed”	
<p>Basic Flow:</p> <ol style="list-style-type: none">1. The actor clicks “Account Balance” from Account Overview.2. The system displays the patient account balance.3. The actor chooses to make a payment if his/her account balance has not been paid off.4. The actor chooses pay by credit card, cash, or check.5. If the actor pays by credit card, he/she has to enter the credit card information.6. The Payment will then be charged by the TTP (Trusted Third Party) Service.7. The “Payment Confirmed” message will be displayed if the credit card has been approved.8. The use case ends.	
<p><i>Alternative Flows:</i></p> <ol style="list-style-type: none">1. Payment doesn’t confirm: If the TTP Service doesn’t approve the credit card, the payment will not be confirmed by the system.	

Figure 7

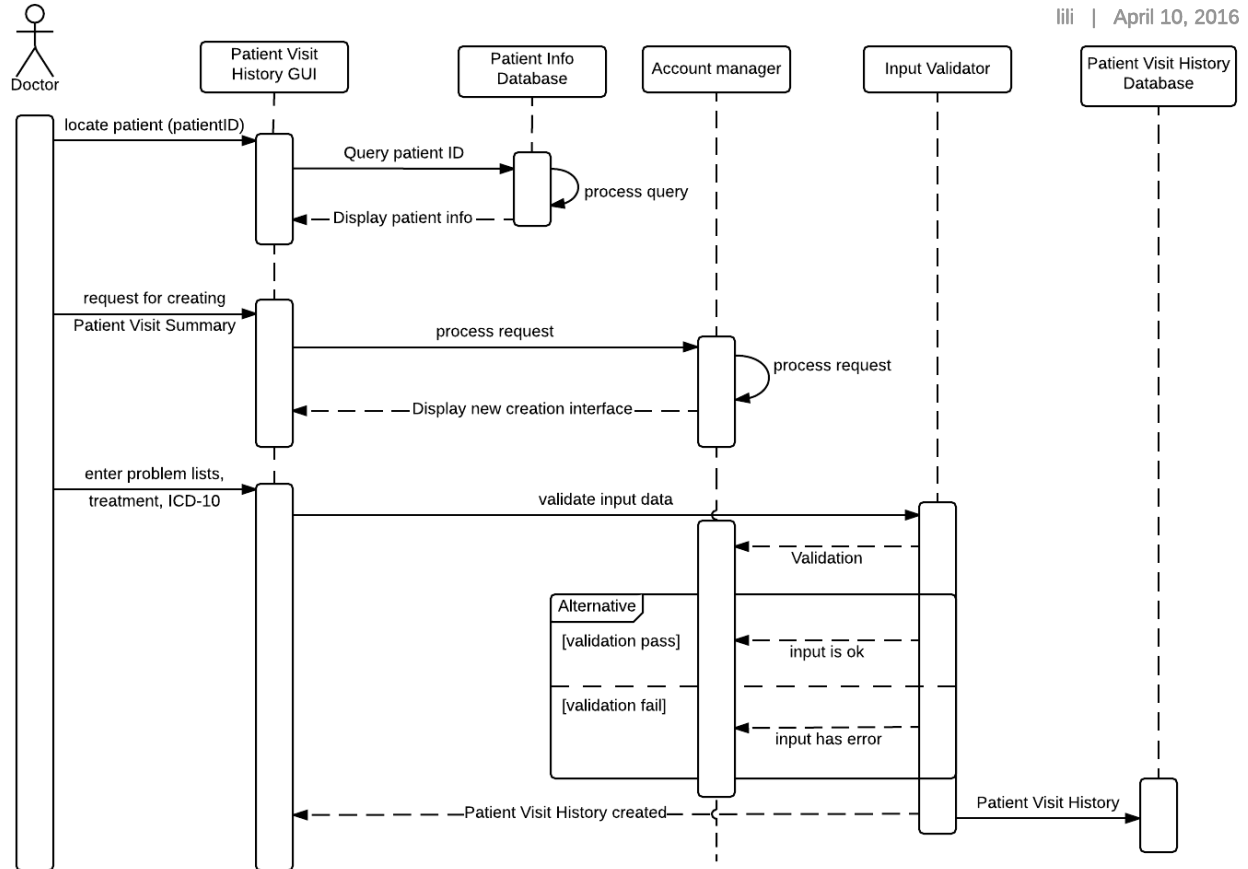


1.1.8 Module 8 Detail - Produce Patient Visit Summary

Use Case Name: Produce a Patients Visit Summary	ID: UC08
Primary Actor: Doctor	
Description: This use case describes how a doctor produces his/her Patients Visit Summary in the system	
Trigger: The patient has visited the doctor	
Precondition: The user must be authorized, and have seen a patient	
Post condition: A Patient Visit Summary has been produced and stored in the Patient Visit Summary data store	
<p>Basic Flow:</p> <ol style="list-style-type: none">1. The actor enters the patient's ID into the search engine.2. The system displays the Patients Information.3. The actor inputs the Patient Visit Summary, including the Patient Problem List, Treatment, and ICD-10 code.4. The Patient Visit Summary is stored in Patient Visit Summary data store.5. The use case ends.	
<p><i>Alternative Flows:</i></p> <ol style="list-style-type: none">1. <i>The actor enters invalid information in the claim form: If the system determines that the user entered invalid information, the following occurs:</i><ol style="list-style-type: none">1) The system displays a message when a field is required.2) The system prompts the User to re-enter the invalid information.3) The user re-enters the information and the system re-validates it.4) If valid information is entered, the Patient Visit Summary is stored.5) If invalid information is entered, the Entered Information is Invalid alternative flow is executed again. This continues until the User enters valid information, or chooses Cancel.6) Invalid Patient Account information include:<ul style="list-style-type: none">- Missing information items- Claim form information entered does not comply to its definition in the glossary- Not well formed information	

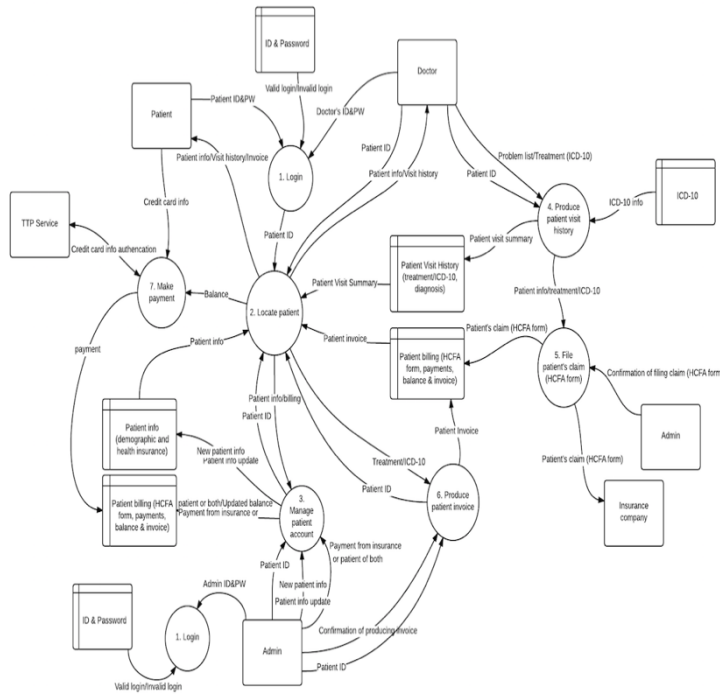
Figure 8

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1.2 Data Flow Diagram

Figure 9




2. User Manual

2.1 Patient

2.1.1 Logging into the System

Any user that has been granted access into the MedEasy system will be provided their login information by the administrator. All users will first access the login portal below, but as a “Patient”, you will input your provided “Username” and “Password” Once the prior criteria has been provided, you will then click “Login”. (GUI01-1)

A screenshot of the MedEasy login portal. The background is a light gray. At the top, the word "MedEasy" is displayed in a large, bold, black serif font. Below it, the text "Please login to your account:" is centered in a smaller, bold, black serif font. There are two input fields: the first is labeled "→ Username:" and the second is labeled "→ Password:". Both labels are in a bold, black serif font, and the arrows are red. The input fields are white with a thin gray border. Below the input fields, there is a button labeled "→ Login". The button is white with a thin gray border, and the label is in a bold, black serif font, with a red arrow pointing to it from the left.

2.1.2 Patient Demographics

Once you have logged into the system, you will click on the information you would like to change, and you will have the ability to correct or modify the fields as you see fit. The information is automatically saved when entered, so no extra work is required to save. You may Log out of the system at any time, by clicking the “Log Out” button located at the bottom of the screen.
(GUI02-1)

The screenshot displays the 'Patient Demographics' form within a medical system's interface. At the top, a navigation bar includes tabs for 'Patient Demographics', 'Patient Insurance', 'Billing Information', 'Primary Care Physician', and 'Patient Balance'. A red arrow points to the 'Patient Demographics' tab. The form itself is titled 'Patient's Demographics' and includes a 'Patient ID' field. Below this, there are input fields for 'First Name', 'Middle Name', and 'Last Name'. To the right of these fields are checkboxes for 'Employed' and 'Student'. Further right is a 'Patient Visit History' button. Below the name fields are fields for 'DOB' and 'Gender' (a dropdown menu). To the right of these are checkboxes for 'Relationship: Child', 'Single', 'Other', and 'Married'. Below the DOB and Gender fields are fields for 'Home Phone' and 'Work Phone'. To the right of these is a vertical list of insurance types with checkboxes: 'MEDICARE', 'MEDICAID', 'CHAMPUS', 'CHAMPVA', 'GROUPHEALTH', 'FECA', and 'OTHER'. Below the Home Phone and Work Phone fields are fields for 'Address', 'City', 'State', and 'Zip Code'. To the right of these is an 'Emergency Contact' field. Below the Address and City fields are fields for 'Home Phone' and 'Work Phone'. To the right of these is an 'Employed' checkbox. At the bottom center of the form is a 'Log Out' button.

2.1.3 Insurance

You may change any information that has changed on this screen, and you may log out of the system at any time by clicking the “Log Out” button, located at the bottom of the screen. (GUI03-1)

Patient Demographics **Patient Insurance** Billing Information Primary Care Physician Patient Balance

Insured Information Patient Visit History

Insured Name: Employer's or School Name:
Insured ID: Insured Group Number:
Gender: Insurance Plan Name:
DOB: Insurance Plan City:
Address: Phone:
City: State:
Zip Code: Other Health Plan ? ☐

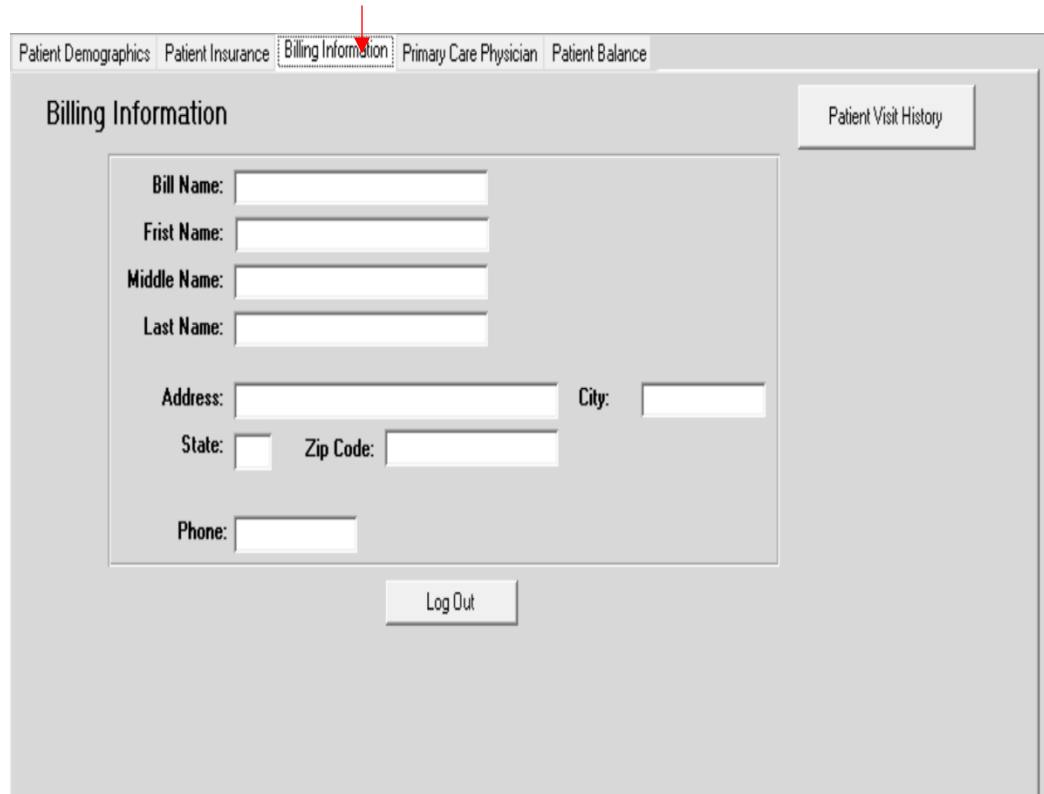
Other Insured Info

Employer's Name: Other Insured Name:
Insured DOB: Other Insured Policy:
Insurance Plan Name:
InsurancePlan City:

Log Out

2.1.4 Billing

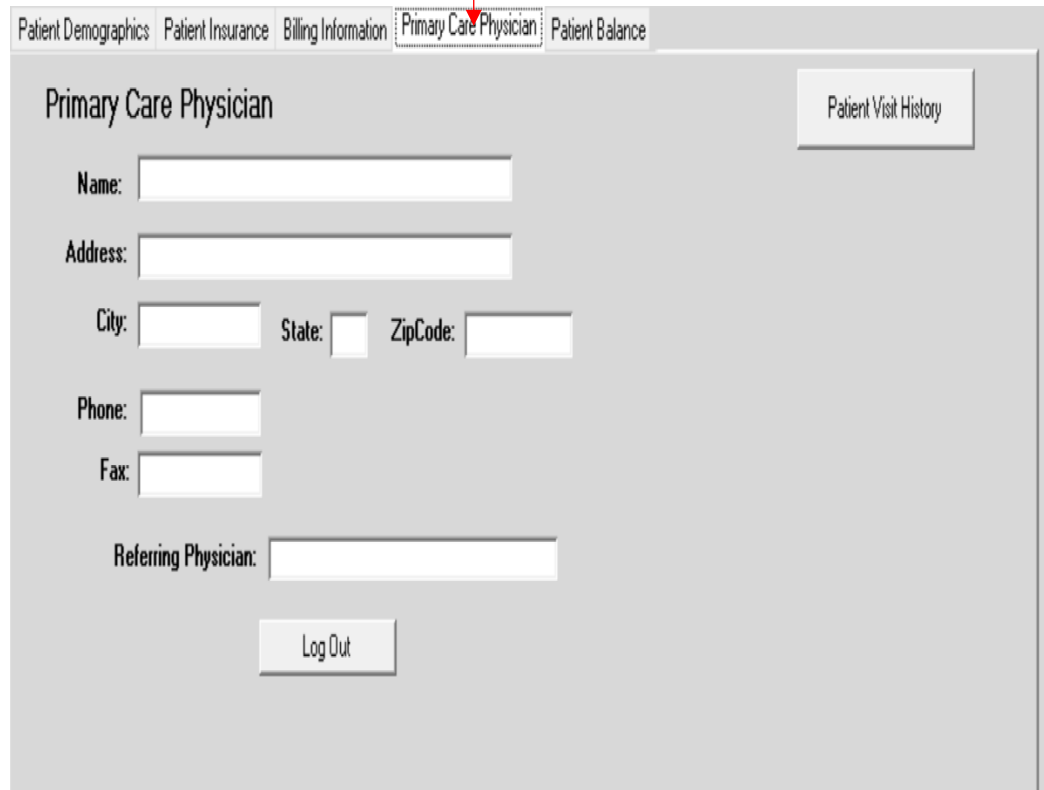
You may change any information that has changed on this screen, and you may log out of the system at any time by clicking the “Log Out” button, located at the bottom of the screen. **(GUI04-1)**



The screenshot displays a web-based interface for managing patient billing information. At the top, a horizontal navigation bar contains five tabs: "Patient Demographics", "Patient Insurance", "Billing Information", "Primary Care Physician", and "Patient Balance". A red arrow points to the "Billing Information" tab, which is currently selected. Below the navigation bar, the main content area is titled "Billing Information". To the right of this title is a button labeled "Patient Visit History". The central part of the screen contains a form with several input fields: "Bill Name:", "First Name:", "Middle Name:", and "Last Name:", each followed by a text box. Below these are fields for "Address:", "City:", "State:", "Zip Code:", and "Phone:", each followed by a text box. At the bottom center of the form area is a "Log Out" button.

2.1.5 Primary Physician

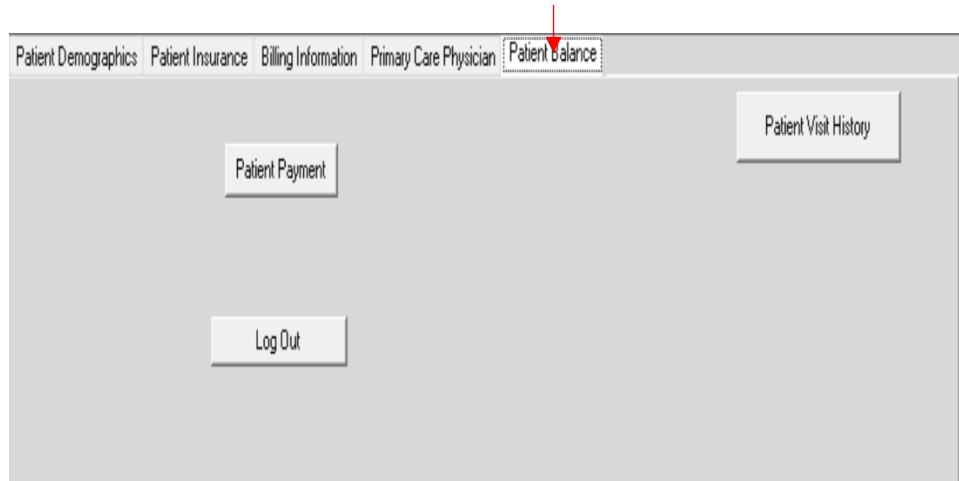
You may change any information that has changed on this screen, and you may log out of the system at any time by clicking the “Log Out” button, located at the bottom of the screen. **(GUI05-1)**



The screenshot displays a web-based form for updating a patient's primary care physician information. At the top, a horizontal navigation bar contains five tabs: "Patient Demographics", "Patient Insurance", "Billing Information", "Primary Care Physician" (which is highlighted with a red arrow), and "Patient Balance". Below the tabs, the main content area is titled "Primary Care Physician" in a large, bold font. To the right of this title is a button labeled "Patient Visit History". The form contains several input fields: "Name:" followed by a text box, "Address:" followed by a text box, "City:" followed by a text box, "State:" followed by a dropdown menu, "ZipCode:" followed by a text box, "Phone:" followed by a text box, "Fax:" followed by a text box, and "Referring Physician:" followed by a text box. At the bottom center of the form is a button labeled "Log Out".

2.1.6 Patient Balance

You may Log out of the system at any time, by clicking the “Log Out” button located at the bottom of the screen. I wasn’t able to get a more up to date screenshot, if this made it in. **(GUI06-1)**



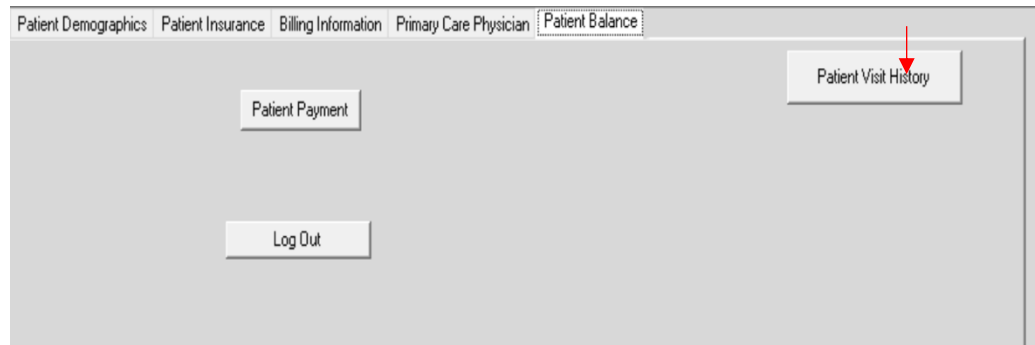
2.1.6.1 Payment

After entering the amount, you would like to pay, and your payment information, you will then click “Submit and back to Menu” to be brought back to the previous screen. **(GUI07-1)**

A screenshot of a web form titled "tblPatientPayment" in a light blue header. The form contains several input fields with labels to their left: "PatientID" (text input), "Date" (calendar icon, showing "5/8/16"), "Name on Card" (text input), "Credit Card Number" (text input), "EXP" (text input, showing "0"), "Amount Paid" (text input, showing "\$0.00"), and "CVC" (text input, showing "0"). At the bottom right of the form is a button labeled "Submit and back to Menu".

2.1.7 Patient History

You may Log out of the system at any time, by clicking the “Log Out” button located at the bottom of the screen. When clicked, a display box will appear, so that a report may be generated. (GUI08-1)



2.1.7.1 Visit History

When the user is finished viewing their visit history, they will click the “x” in the upper right corner of the screen to go back to the last screen. (GUI09-1)

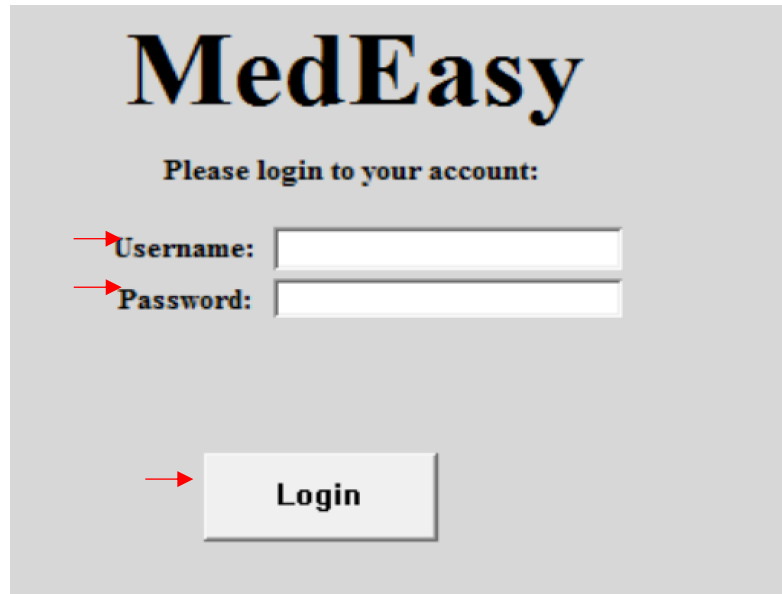
The screenshot shows a table titled "tblPatientVisitHistoryTable". The table has columns: VisitID, PatientID, ProviderID, Date, Diagnosis-1, PinNO, and Authorizatic. A red box highlights the close button (x) in the upper right corner of the table window.

VisitID	PatientID	ProviderID	Date	Diagnosis-1	PinNO	Authorizatic
1020790	212368774	EVELYN	4/11/16	311	528329-01	
1020791	Reddy, Sundeeep S	EVELYN	6/28/16	296.90	528329-01	00QM20000
1020793	Reddy, Sundeeep S	EVELYN	7/4/16	296.90	528329-01	00QM20000
*(New)			5/8/16			

2.2 Doctor

2.2.1 Logging into the System

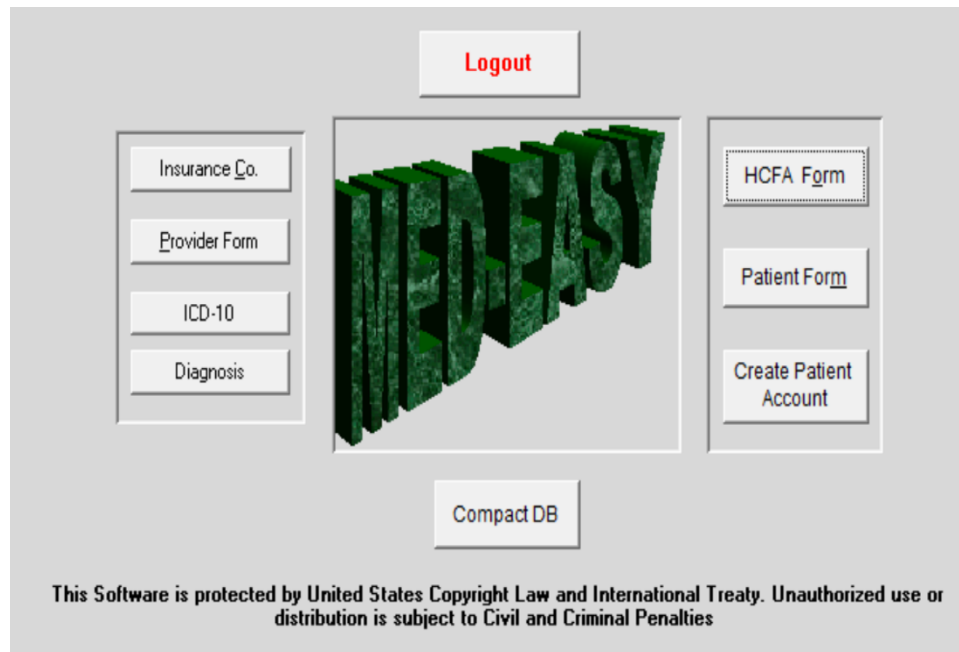
Any user that has been granted access into the MedEasy system will be provided their login information by the Administrator. All users will first access the login portal below, but as a “Doctor”, you will input your provided “Username” and “Password”. Once the prior criteria has been provided, you will then click “Login”. (GUI01-2)



The image shows a login portal for the MedEasy system. At the top, the word "MedEasy" is displayed in a large, bold, serif font. Below it, the text "Please login to your account:" is centered. There are two input fields: "Username:" and "Password:", each with a red arrow pointing to the text label. Below these fields is a "Login" button, also with a red arrow pointing to it. The entire form is set against a light gray background.

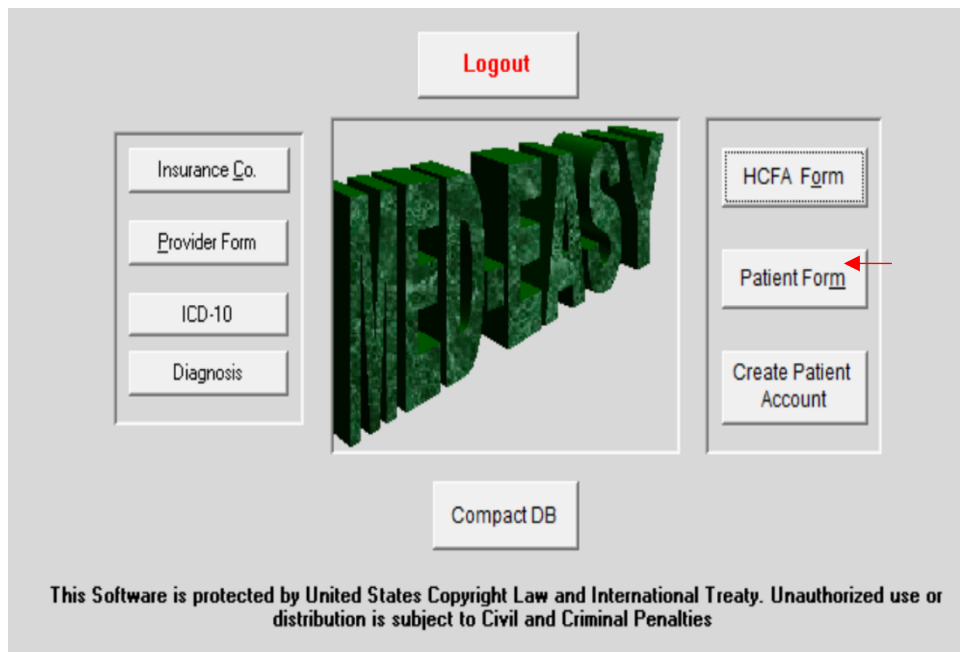
2.2.2 Main Menu

After logging into the system, you will be presented with the “Main Menu” of the system. This will have two options, one where you can access forms, such as “HCFA”, and another where you can input information. You will also have the option to “Log Out” of the system, which is located at the top of the “Main Menu” page. (GUI02-2)



2.2.3 Patient Form

When selecting the “Patient Form” button, you will be directed to the “Patient Demographics” menu. In addition, you will be able to navigate to the patients “Insurance”, “Billing”, “Primary Physician”, and “Patient History” sections when desired. When you wish to move between pages, simply click the appropriate button located on the left hand side of the screen. When located on editable pages, you will click the information you would like to change, and you will have the ability to modify the fields as you see fit. The information is automatically saved when entered, so there is no extra work that is required to save the information. **(GUI02-2-1)**



2.2.3.1 Patient Demographics

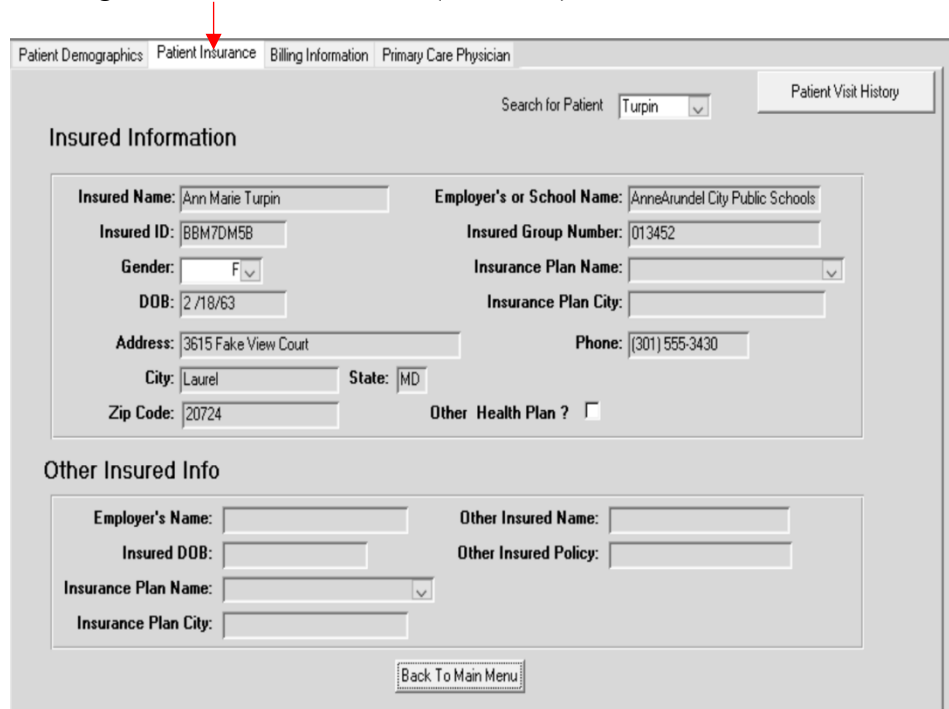
When located on this page, you will click the information you would like to change, and you will have the ability to correct or modify the given fields as you see fit. You may go back to the main menu at any time, simply by clicking “Back to Main Menu”.

(GUI03-2)

The screenshot shows a web-based form for patient demographics. At the top, there is a navigation bar with tabs: "Patient Demographics", "Patient Insurance", "Billing Information", and "Primary Care Physician". A red arrow points to the "Patient Demographics" tab. Below the navigation bar, the form is titled "Patient's Demographics". It includes a "Patient ID" field with the value "101926009" and a "Search for Patient" dropdown menu with "Turpin" selected. There is a button labeled "Add New Patient Record" and a checkbox for "Inactive Patient". The form is divided into several sections: "First Name" (Emerald), "Middle Name" (F), "Last Name" (Turpin), "DOB" (8/10/65), "Gender" (F), "Address" (3615 Fake View Court), "State" (MD), "Zip Code" (20724), "City" (Laurel), "Home Phone" ((301) 555-8750), "Work Phone" ((703) 555-1000), "Emergency Contact" (Ann M. Turpin), "Home Phone" ((301) 555-7870), "Work Phone" (empty), and "Employed" (checkbox). There are also checkboxes for "Employed" (checked), "Student" (unchecked), "Relationship" (Child, Single, Other, Married), and "Other" (checked). On the right side, there is a section for insurance types: "MEDICARE" (checkbox), "MEDICAID" (checkbox), "CHAMPUS" (checkbox), "CHAMPVA" (checkbox), "GROUPHEALTH" (checkbox), "FECA" (checkbox), and "OTHER" (checked). At the bottom, there is a button labeled "Back To Main Menu".

2.2.3.2 Insurance

Any changes can be made to the information on this page when needed. You may go back to the main menu at any time, simply by clicking “Back to Main Menu”. (GUI04-2)



The screenshot shows a web application interface for patient insurance information. At the top, there are four tabs: "Patient Demographics", "Patient Insurance" (highlighted with a red arrow), "Billing Information", and "Primary Care Physician". To the right of the tabs is a "Search for Patient" dropdown menu with "Turpin" selected, and a "Patient Visit History" button. Below the tabs is the "Insured Information" section, which contains two columns of form fields. The left column includes "Insured Name" (Ann Marie Turpin), "Insured ID" (BBM7DM5B), "Gender" (F), "DOB" (2/18/63), "Address" (3615 Fake View Court), "City" (Laurel), "State" (MD), and "Zip Code" (20724). The right column includes "Employer's or School Name" (AnneArundel City Public Schools), "Insured Group Number" (013452), "Insurance Plan Name" (dropdown), "Insurance Plan City" (dropdown), "Phone" ((301) 555-3430), and "Other Health Plan ?" (checkbox). Below the "Insured Information" section is the "Other Insured Info" section, which contains four form fields: "Employer's Name", "Insured DOB", "Insurance Plan Name" (dropdown), and "Insurance Plan City". At the bottom right of the form is a "Back To Main Menu" button.

Patient Demographics Patient Insurance Billing Information Primary Care Physician

Search for Patient Turpin Patient Visit History

Insured Information

Insured Name: Ann Marie Turpin Employer's or School Name: AnneArundel City Public Schools

Insured ID: BBM7DM5B Insured Group Number: 013452

Gender: F Insurance Plan Name: Insurance Plan City:

DOB: 2/18/63 Insurance Plan City:

Address: 3615 Fake View Court Phone: (301) 555-3430

City: Laurel State: MD

Zip Code: 20724 Other Health Plan ? ☐

Other Insured Info

Employer's Name: Other Insured Name:

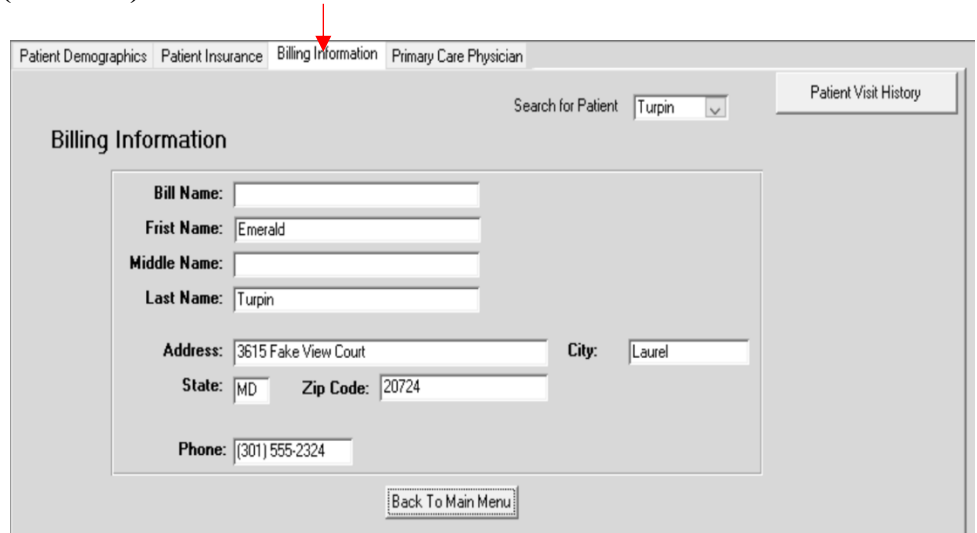
Insured DOB: Other Insured Policy:

Insurance Plan Name: Insurance Plan City:

Back To Main Menu

2.2.3.3 Billing

All fields are editable on this screen, and you may go back to the main menu at any time, simply by clicking “Back to Main Menu”.
(GUI05-2)



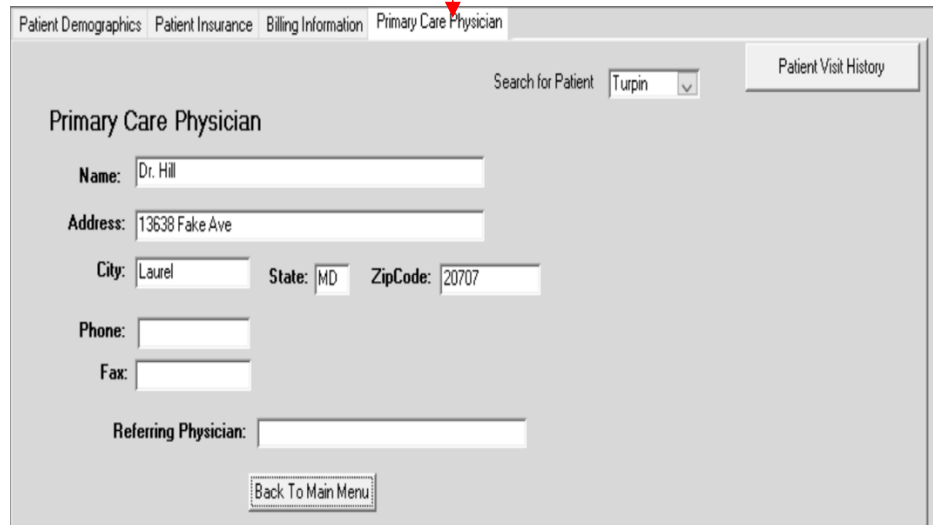
The screenshot shows a web-based interface for managing patient information. At the top, there is a navigation bar with four tabs: "Patient Demographics", "Patient Insurance", "Billing Information", and "Primary Care Physician". A red arrow points to the "Billing Information" tab. To the right of the tabs is a "Search for Patient" dropdown menu with "Turpin" selected, and a "Patient Visit History" button. The main content area is titled "Billing Information" and contains a form with the following fields:

- Bill Name:
- Frist Name:
- Middle Name:
- Last Name:
- Address:
- City:
- State:
- Zip Code:
- Phone:

At the bottom right of the form area is a button labeled "Back To Main Menu".

2.2.3.4 Primary Physician

You will have the ability to change all of the information on the page, and you may go back to the main menu at any time, simply by clicking “Back to Main Menu”. (GUI06-2)



The screenshot shows a web-based form for a medical application. At the top, there is a navigation bar with four tabs: "Patient Demographics", "Patient Insurance", "Billing Information", and "Primary Care Physician". A red arrow points to the "Primary Care Physician" tab. To the right of the tabs is a "Search for Patient" dropdown menu with "Turpin" selected, and a "Patient Visit History" button. The main form area is titled "Primary Care Physician" and contains several input fields: "Name:" with "Dr. Hill", "Address:" with "13638 Fake Ave", "City:" with "Laurel", "State:" with "MD", "ZipCode:" with "20707", "Phone:", "Fax:", and "Referring Physician:". At the bottom center of the form is a button labeled "Back To Main Menu".

2.2.3.5 Patient History

You may Log out of the system at any time, by clicking the “Log Out” button located at the bottom of the screen. When clicked, a display box will appear, so that a report may be generated. (GUI07-2)

Patient DemographicsPatient InsuranceBilling InformationPrimary Care Physician

Search for PatientTurpin

Patient Visit History

Primary Care Physician

Name:Dr. Hill

Address:13638 Fake Ave

City:LaurelState:MDZipCode:20707

Phone:

Fax:

Referring Physician:

Back To Main Menu

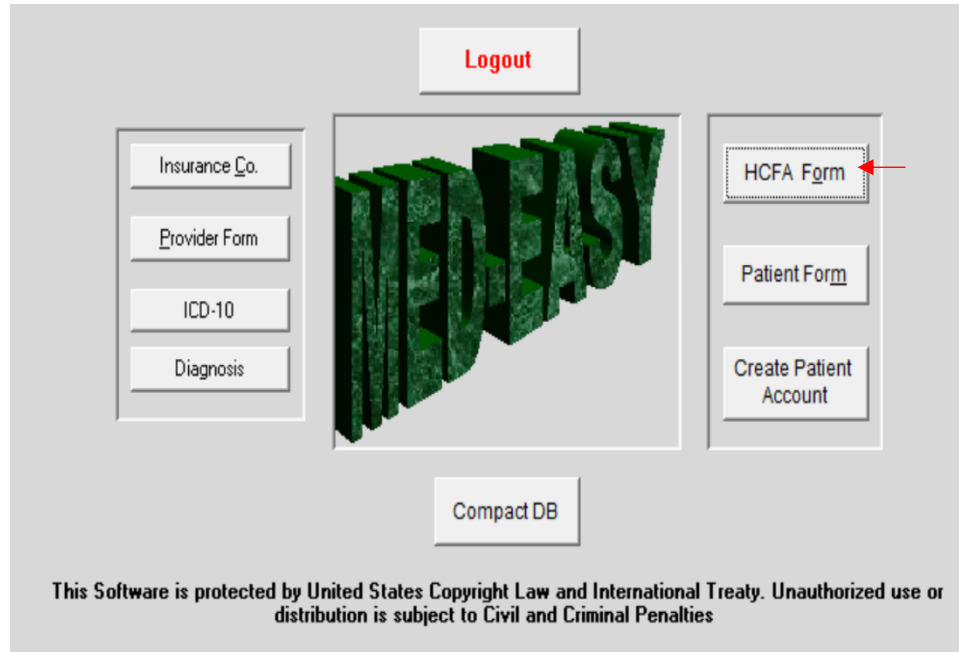
2.2.3.5.1 Patient Visit History

When the user is finished viewing their visit history, they will click the “x” in the upper right corner of the screen to go back to the last screen. (GUI08-2)

VisitID	PatientID	ProviderID	Date	Diagnosis-1	PinNO	Authorizatic	PlanName
1020790	212368774	EVELYN	4/11/16 311	528329-01			
1020791	Reddy, Sundeep S	EVELYN	6/28/16 296.90	528329-01	00QM20000		
1020793	Reddy, Sundeep S	EVELYN	7/4/16 296.90	528329-01	00QM20000		
* (New)			5/8/16				

2.2.4 HCFA

When selecting the “HCFA” button, you will be directed to the “HCFA” form, where you will have access to input all of the various information that is required within the form. (GUI02-2-2)



2.2.4.1 Navigation

Please click the desired button when entering the information. **(GUI09-2)**

The screenshot displays the HCFA Form interface. At the top, there is a navigation bar with a dropdown menu labeled 'Lookup Visit/Patient', a 'Show all Records' button, and a large 'HCFA Form' button. To the right of these are four smaller buttons: 'Add Record', 'Delete Record', 'Add Patient', and 'Close Form'. Below the navigation bar, there are three tabs: 'Patients Demographics', 'Doctors Procedure', and 'Generate Patient Invoice'. The main form area is divided into several sections. On the left, there are fields for 'Claim ID: (New)', 'Date:', 'Provider ID:', 'Primary Ins Co.Name:', 'Sec.Ins. Co.Name:', and 'Service Rendered At:'. Below these is a section for insurance information with fields for 'Primary Insurance:', 'Primary Insurance City:', 'Secondary Insurance:', and 'Secondary Insurance City:'. A 'Remark:' field is located below the insurance section. On the right, there are fields for 'Patient Name:', 'Address:', 'Previous Diagnosis 1:', and 'Previous Diagnosis 2:'. Below these are two boxes, each containing 'Diagnosis-1:', 'Diagnosis-2:', 'Pin NO:', and 'Group#:' fields. At the bottom right, there are 'Local19' and 'AUTH' fields. At the very bottom, there are four summary fields: 'Sum of Charges:', 'Sum Insurance Paid:', 'Sum Patient Paid:', and 'Balance Due:'.

2.2.4.1.1 Top Panel

2.2.4.1.1.1 Lookup Record

This option provides a search bar that will allow you to pull the HCFA forms for a specified patient. **(GUI010-2)**

2.2.4.1.1.2 Show All Records

This option provides all records for the selected individual from the “Lookup Visit/Patient”. **(GUI11-2)**

2.2.4.1.1.3 Add Record

This option generates a new HCFA Form when selected for an individual. **(GUI12-2)**

2.2.4.1.1.4 Delete Record

This option will remove the HCFA form from the system. **(GUI13-2)**

2.2.4.1.1.5 Add Patient

This option provides the ability to add a new patient so a HCFA Form can be created. **(GUI14-2)**

2.2.4.1.1.6 Menu

This option will take you back to the forms menu. **(GUI15-2)**

2.2.4.1.2 Entering Information

Once you have selected the correct patient, and have their records pulled, please enter the appropriate information into the various fields. **(GUI16-2)**

2.2.4.1.3 Entry Options

You may put information into three different areas, “Patient Demographics”, “Doctors Procedure”, or “Generate Patient Invoice”.

2.2.4.1.3.1 Patient Demographics

(GUI09-2-1)

The screenshot displays the 'HCFA Form' interface with the 'Patient Demographics' tab selected. At the top, there is a 'Lookup Visit/Patient' dropdown menu with a red arrow pointing to it, a 'Show all Records' button, and a 'HCFA Form' title. To the right are buttons for 'Add Record', 'Delete Record', 'Add Patient', and 'Close Form'. Below the title bar, there are three tabs: 'Patients Demographics' (active), 'Doctors Procedure', and 'Generate Patient Invoice'. The main form area contains several input fields: 'Claim ID: (New)', 'Date:', 'Patient Name:', 'Address:', 'Primary Ins Co.Name:', 'Sec. Ins. Co.Name:', 'Service Rendered At:', 'Primary Insurance:', 'Primary Insurance City:', 'Secondary Insurance:', 'Secondary Insurance City:', 'Remark:', 'Diagnosis-1:', 'Diagnosis-2:', 'Pin NO:', 'Group#:', 'Local19', and 'AUTH'. At the bottom, there are four summary fields: 'Sum of Charges:', 'Sum Insurance Paid:', 'Sum Patient Paid:', and 'Balance Due:'.

2.2.4.1.3.2 Doctors Procedure

This is where the doctor will enter the information from the previous visit. (GUI17-2)

The screenshot displays a software interface for an HCFA Form. At the top, there is a navigation bar with a dropdown menu labeled 'Lookup Visit/Patient', a button 'Show all Records', and a large button 'HCFA Form'. To the right of these are four buttons: 'Add Record', 'Delete Record', 'Add Patient', and 'Close Form'. Below the navigation bar is a tabbed interface with four tabs: 'Patients', 'Demographics', 'Doctors Procedure' (which is the active tab), and 'Generate Patient Invoice'. The main content area of the 'Doctors Procedure' tab contains several input fields and buttons. On the left, there is a 'Patient Name' dropdown and a 'Visit ID' dropdown with '(New)' next to it. Below these are several other dropdowns: 'From:', 'Place of Service:', 'Diagnosis Code:', 'ICD Code:', 'Charges:', 'Type of Service:', and '24K:'. On the right side of the form, there are two stacked boxes. The top box contains 'Insurance Paid:' and 'Insurance Paid Date:'. The bottom box contains 'Patient Paid:', 'Patient Paid Date:', and 'Balance Due:'. At the bottom right of the form, there is a button labeled 'Open Report'.

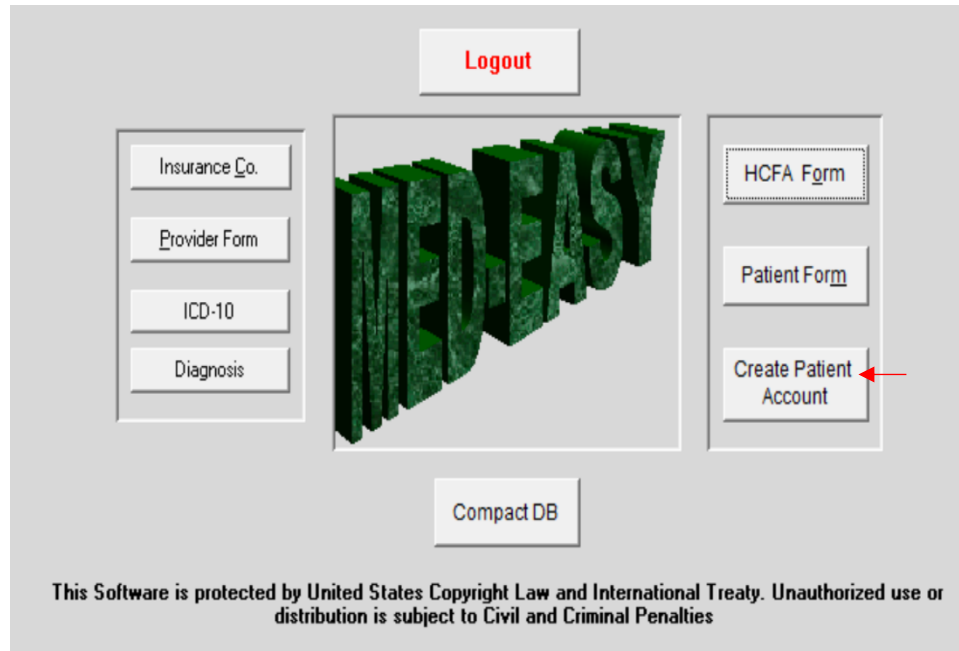
2.2.4.1.3.3 Generate Patient Invoice

This is the section of the program that creates the invoice for the various patients. (GUI18-2)

The screenshot displays a software interface for generating patient invoices. At the top, there is a navigation bar with a dropdown menu labeled 'Lookup Visit/Patient', a 'Show all Records' button, and a main title 'HCEA Form'. To the right of the title are four buttons: 'Add Record', 'Delete Record', 'Add Patient', and 'Close Form'. Below this bar is a tabbed interface with four tabs: 'Patients', 'Demographics', 'Doctors Procedure', and 'Generate Patient Invoice'. The 'Generate Patient Invoice' tab is currently selected. The main content area of this tab contains several input fields: 'Patient Name:' with a dropdown menu, 'Visit ID:' with a 'New' button, 'Visit Date:', 'Changes:', 'Patient Payment:', 'Insurance Payment:', and 'Balance Due:'. A large, empty rectangular area is located below these fields, likely intended for a detailed invoice breakdown or notes.

2.2.5 Create Patient Account

From the “Main Menu” screen, you will select “Create Patient Account”.
(GUI02-2-3)



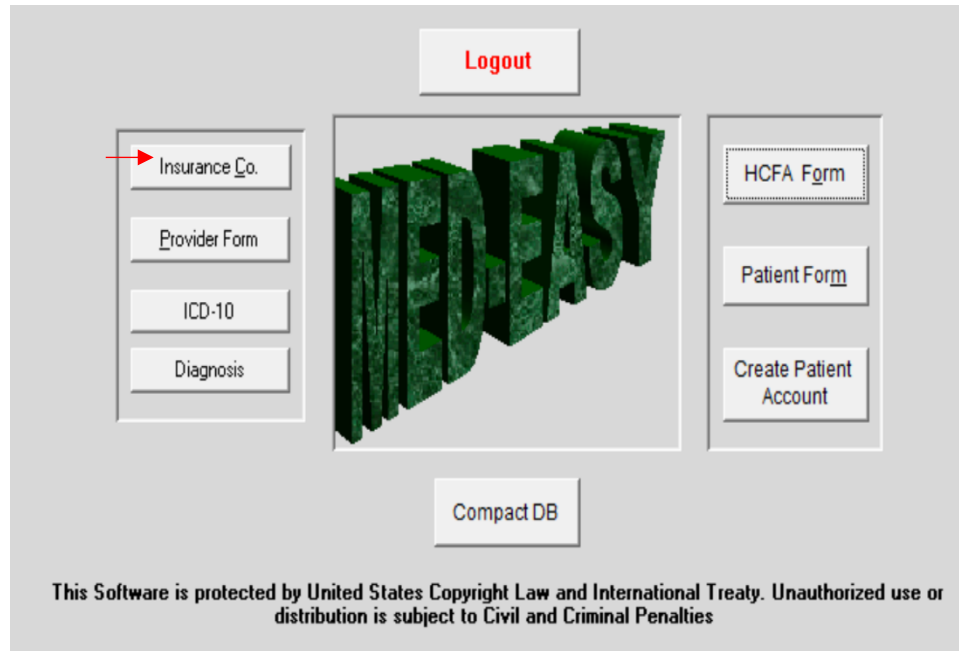
2.2.5.1 Data Entry

When on this page, the user will enter new users “username”, and “password”, and once completed, they will click “Add New User”. Once finished, the user may click “Close Form” to go back to the main menu. (GUI19-2)

The screenshot shows a window titled 'Create User Account Login'. The window has a title bar with standard minimize, maximize, and close buttons. The main content area has a header 'Create User Account Login' in a dark box. Below the header, there are two input fields: 'User Name' and 'Password'. The 'User Name' field contains the text 'doctor'. The 'Password' field contains six asterisks '*****'. To the right of the 'User Name' field is an 'Add New User' button. Below the 'Password' field is a 'Close Form' button. At the bottom of the window, there is a status bar with the text 'Record: 1 of 3', a 'No Filter' button, and a 'Search' button.

2.2.6 Insurance Company

From the “Main Menu” screen, you will select “Insurance Co.”.
(GUI02-2-4)



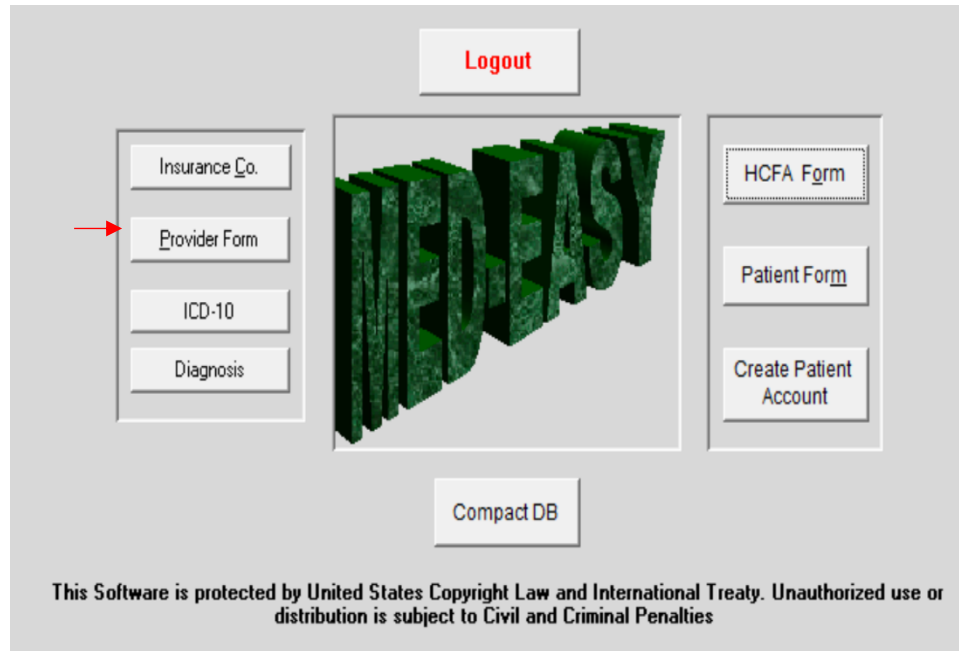
2.2.6.1 Data Entry

After selecting “Insurance Co.”, you will be brought to the screen below, where you will enter your information, and click “Add Record”. You will have the option to return to the main menu of the system, by clicking the button on the left hand side of the screen, named “Back to Main Menu”. (GUI20-2)

The image shows the 'Data Entry' screen for the 'Insurance Company' section. It features several input fields for data entry: 'Insurance Co. ID:' (with a 'New' button next to it), 'Insurance Co. Name:', 'Insurance Co. Address:', 'Insurance Co. City:', 'Insurance Co. State:', 'Insurance Co. ZipCode:', and 'Insurance Co. Phone:'. On the left side, there is a 'Back To Main Menu' button with a red arrow pointing to it. On the right side, there is an 'Add Record' button with a red arrow pointing to it.

2.2.7 Provider Form

From the “Main Menu” screen, you will select “Provider Form”.
(GUI02-2-5)



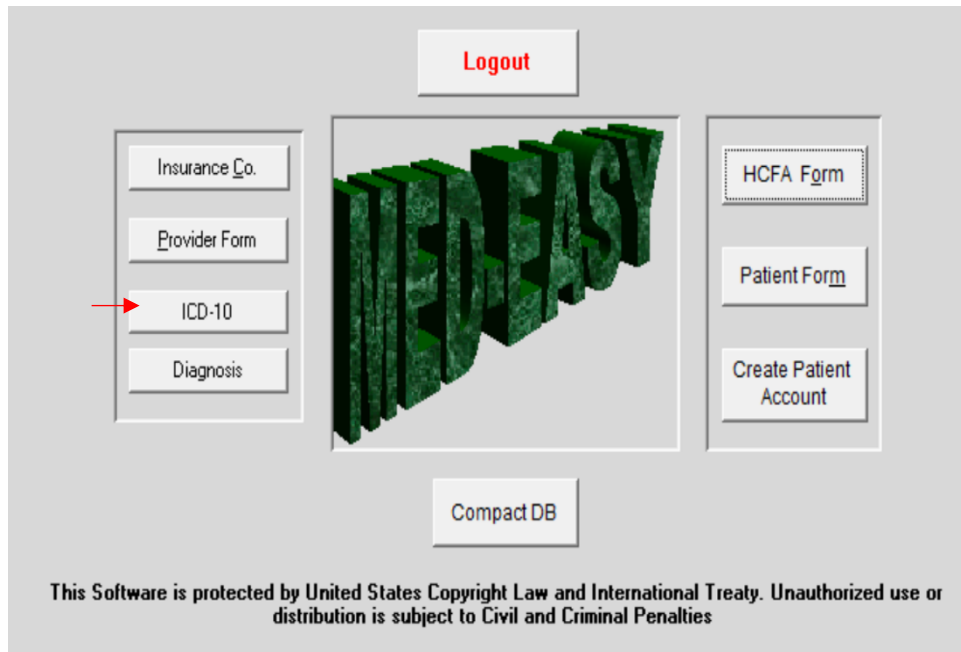
2.2.7.1 Data Entry

When you want to add a new provider into the system, you need to add the required information into the textboxes, and then click “Add Record” button, in order to save the new information into the system. You will then click “Back to Main Menu”, to go back to the main menu. (GUI21-2)

The screenshot shows the 'Provider Data Entry' form. On the left is a 'Back to Main Menu' button, highlighted with a red arrow. To its right are four input fields: 'Provider ID:' with a '(New)' button, 'First Name:', 'Middle Name:', and 'Last Name:'. On the far right is an 'Add Record' button, also highlighted with a red arrow.

2.2.8 ICD-10

From the “Main Menu” screen, you will select “ICD-10”. (GUI02-2-6)



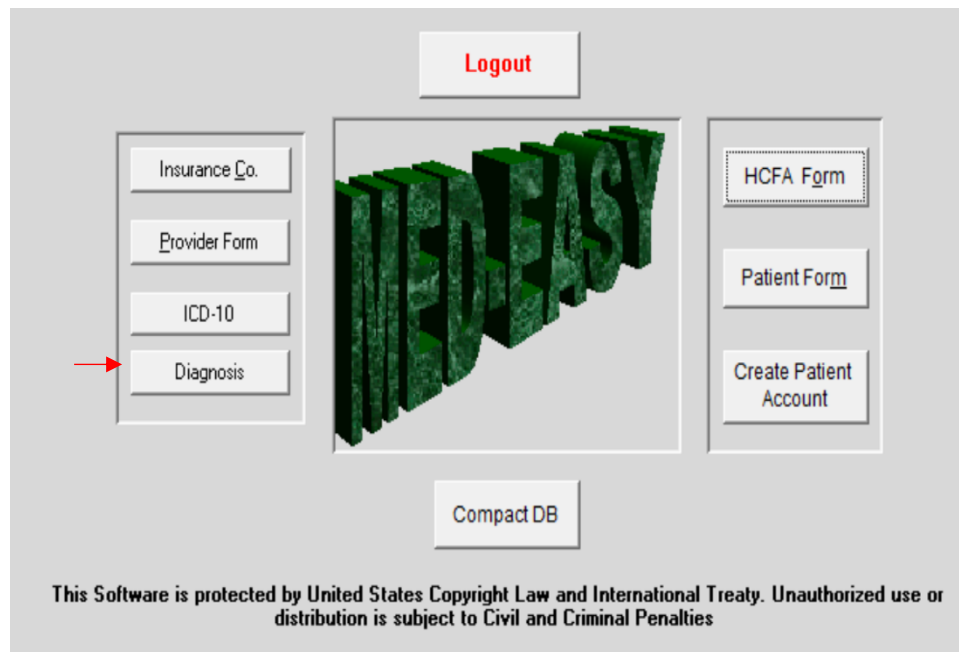
2.2.8.1 Adding Data

When adding a new ICD-10 code into the system, you will enter the information into the various textboxes, and click the “Add Record” button to save the new information into the system. You may then press the “Back to Main Menu”, to go back to the main menu. (GUI22-2)



2.2.9 Diagnosis

From the “Main Menu” screen, you will select “Diagnosis”. (GUI02-2-7)



2.2.9.1 Data Entry

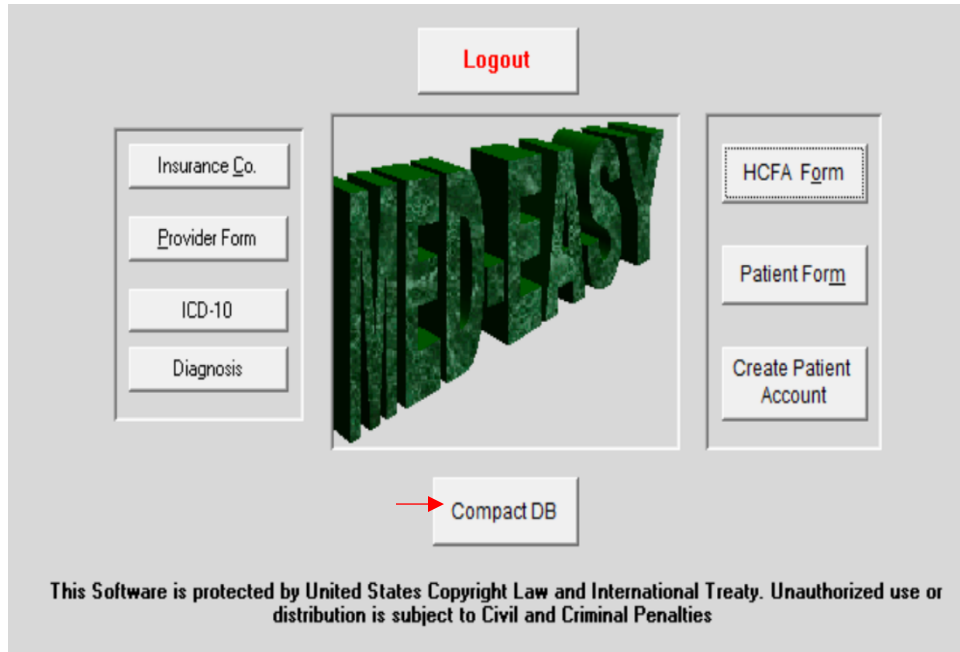
When you want to add new information into the system, you will enter the information into the various text boxes, and then click “Add Record” button to save the new information into the system. You may then press the “Back to Main Menu”, to go back to the main menu. (GUI23-2)

The screenshot shows the 'Data Entry' screen. It features a 'Back to Main Menu' button on the left. In the center, there are two text input fields: the top one is labeled 'Diagnosis' and the bottom one is labeled 'Description'. On the right side, there is an 'Add Record' button.

2.2.10 Compact Database

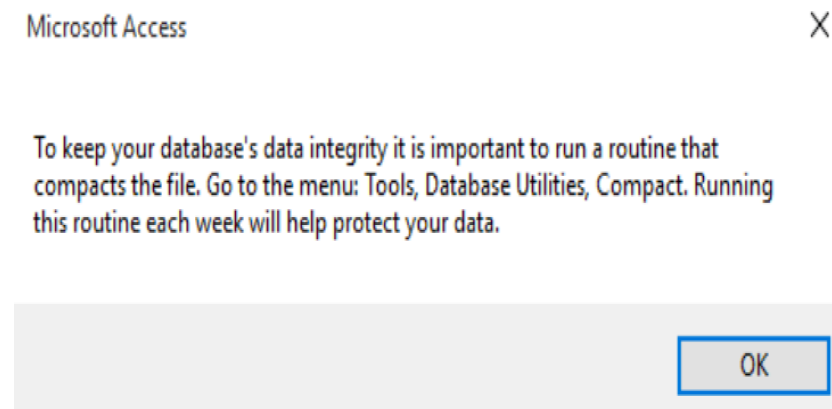
From the “Main Menu” screen, you will select “Compact Database”.

(GUI-2-2-8)



2.2.10.1 Display

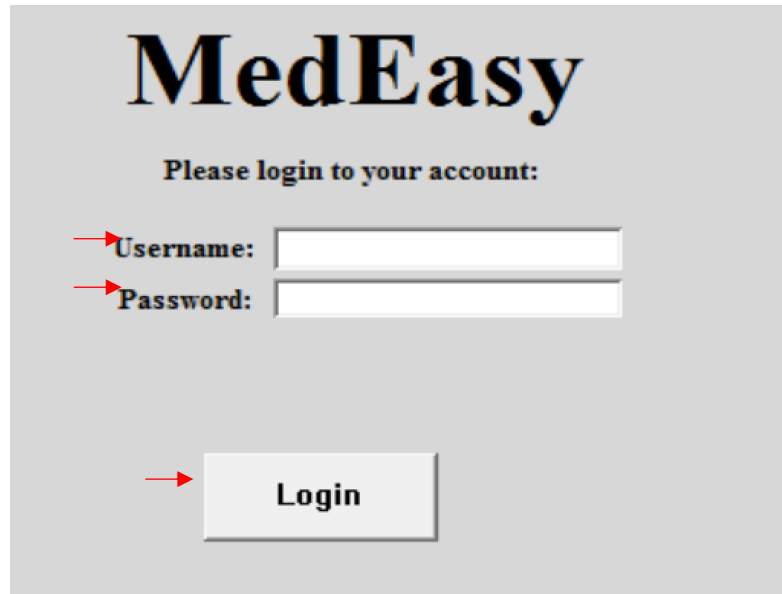
This button will only display a message to remind the primary users of the system to occasionally compact their database, and the necessary steps to accomplish it. (GUI24-2)



2.3 Administrator

2.3.1 Logging into the System

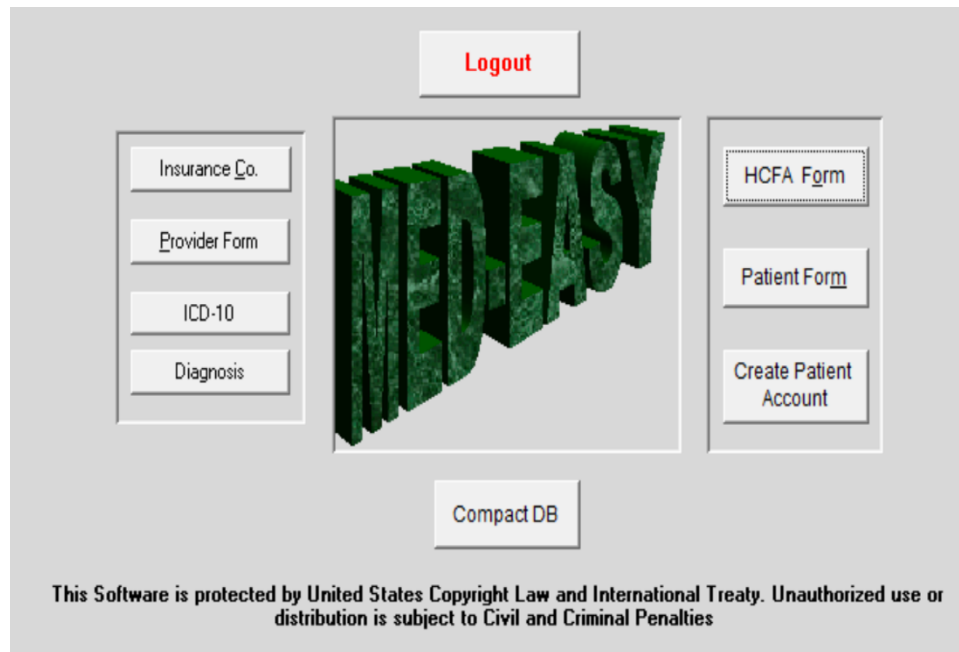
Any user that has been granted access into the MedEasy system will be provided their login information by the Administrator. All users will first access the login portal below, but as a “Administrator”, you will input your provided “Username” and “Password. Once the prior criteria has been provided, you will then click “Login”. (GUI01-3)



The image shows a login portal for a system named "MedEasy". The title "MedEasy" is displayed in a large, bold, serif font at the top. Below it, the text "Please login to your account:" is centered. There are two input fields: "Username:" and "Password:", each preceded by a red arrow pointing to the field. Below these fields is a "Login" button, also preceded by a red arrow. The entire form is set against a light gray background.

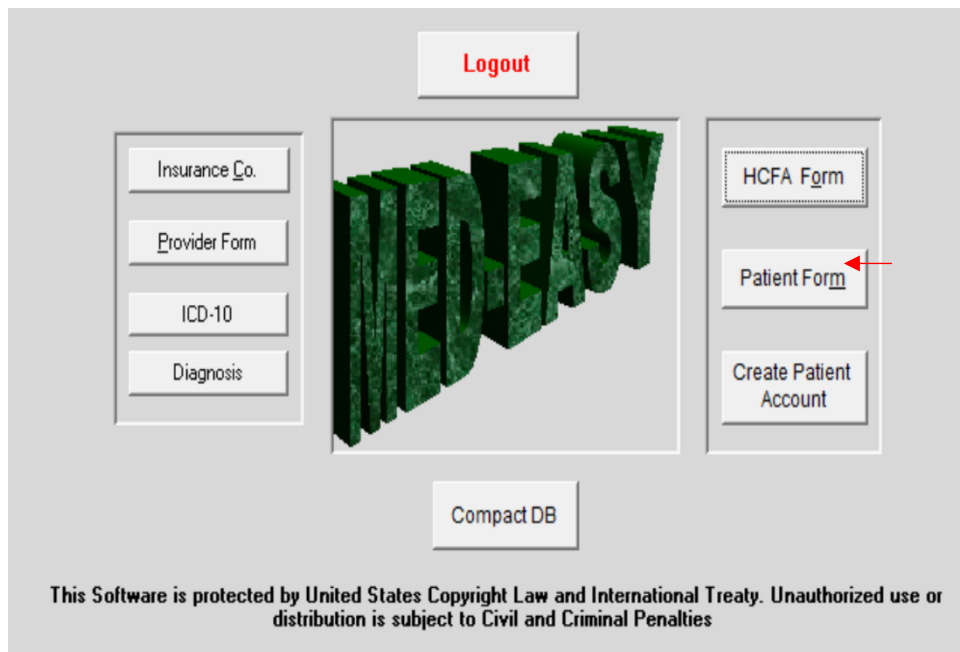
2.3.2 Main Menu

After logging into the system, you will be presented with the “Main Menu” of the system. This will have two options, one where you can access forms, such as “HCFA”, and another where you can input information. You will also have the option to “Log Out” of the system, which is located at the top of the “Main Menu” page. (GUI02-3)



2.3.3 Patient Form

When selecting the “Patient Form” button, you will be directed to the “Patient Demographics” menu. In addition, you will be able to navigate to the patients “Insurance”, “Billing”, “Primary Physician”, and “Patient History” sections when desired. When you wish to move between pages, simply click the appropriate button located on the left hand side of the screen. When located on editable pages, you will click the information you would like to change, and you will have the ability to modify the fields as you see fit. The information is automatically saved when entered, so there is no extra work that is required to save the information. **(GUI02-3-1)**



2.3.3.1 Patient Demographics

When located on this page, you will click the information you would like to change, and you will have the ability to correct or modify the given fields as you see fit. You may go back to the main menu at any time, simply by clicking “Back to Main Menu”.

(GUI03-3)

The screenshot shows a web-based form for patient demographics. At the top, there is a navigation bar with tabs: "Patient Demographics", "Patient Insurance", "Billing Information", and "Primary Care Physician". A red arrow points to the "Patient Demographics" tab. Below the navigation bar, the form is titled "Patient's Demographics". It includes a "Patient ID" field with the value "101926009" and a "Search for Patient" dropdown menu with "Turpin" selected. There is a button labeled "Add New Patient Record" and a checkbox for "Inactive Patient". The form is divided into several sections: "Personal Information" with fields for First Name (Emerald), Middle Name (F), Last Name (Turpin), DOB (8/10/65), Gender (F), Address (3615 Fake View Court), State (MD), Zip Code (20724), and City (Laurel); "Insurance Information" with checkboxes for Medicare, Medicaid, CHAMPUS, CHAMPVA, GROUPHEALTH, FECA, and OTHER; "Relationship Information" with checkboxes for Child, Single, Other, and Married; "Home Phone" and "Work Phone" fields; and "Emergency Contact" information for Ann M. Turpin. A "Back To Main Menu" button is located at the bottom right of the form.

Patient Demographics Patient Insurance Billing Information Primary Care Physician

Patient's Demographics Patient ID 101926009 Search for Patient Turpin Patient Visit History

☐ Inactive Patient

Add New Patient Record

Employed: ☒ Student: ☐

Relationship: Child: ☐ Single: ☐ Other: ☐ Married: ☒

Home Phone: (301) 555-8750 Work Phone: (703) 555-1000

MEDICARE: ☐ MEDICAID: ☐ CHAMPUS: ☐ CHAMPVA: ☐ GROUPHEALTH: ☐ FECA: ☐ OTHER: ☒

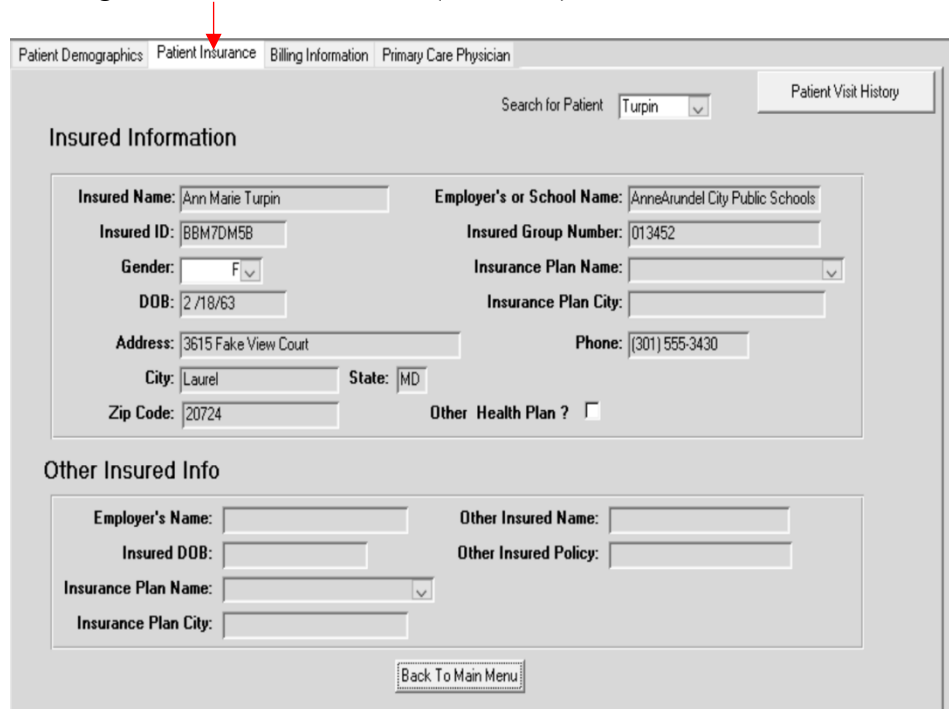
First Name: Emerald Middle Name: F Last Name: Turpin DOB: 8/10/65 Gender: F Address: 3615 Fake View Court State: MD Zip Code: 20724 City: Laurel

Emergency Contact: Ann M. Turpin Home Phone: (301) 555-7870 Work Phone: Employed: ☐

Back To Main Menu

2.3.3.2 Insurance

Any changes can be made to the information on this page when needed. You may go back to the main menu at any time, simply by clicking “Back to Main Menu”. (GUI04-3)



The screenshot shows a web application interface for patient insurance information. At the top, there are four tabs: "Patient Demographics", "Patient Insurance", "Billing Information", and "Primary Care Physician". A red arrow points to the "Patient Insurance" tab. To the right of the tabs is a "Search for Patient" dropdown menu with "Turpin" selected, and a "Patient Visit History" button. Below the tabs is the "Insured Information" section, which contains two columns of form fields. The left column includes "Insured Name" (Ann Marie Turpin), "Insured ID" (BBM7DM5B), "Gender" (F), "DOB" (2/18/63), "Address" (3615 Fake View Court), "City" (Laurel), "State" (MD), and "Zip Code" (20724). The right column includes "Employer's or School Name" (AnneArundel City Public Schools), "Insured Group Number" (013452), "Insurance Plan Name" (dropdown), "Insurance Plan City" (dropdown), "Phone" ((301) 555-3430), and "Other Health Plan ?" (checkbox). Below the "Insured Information" section is the "Other Insured Info" section, which contains four form fields: "Employer's Name", "Insured DOB", "Insurance Plan Name" (dropdown), and "Insurance Plan City". At the bottom right of the form is a "Back To Main Menu" button.

Patient Demographics Patient Insurance Billing Information Primary Care Physician

Search for Patient Turpin Patient Visit History

Insured Information

Insured Name: Ann Marie Turpin Employer's or School Name: AnneArundel City Public Schools

Insured ID: BBM7DM5B Insured Group Number: 013452

Gender: F Insurance Plan Name: Insurance Plan City:

DOB: 2/18/63 Insurance Plan City:

Address: 3615 Fake View Court Phone: (301) 555-3430

City: Laurel State: MD

Zip Code: 20724 Other Health Plan ? ☐

Other Insured Info

Employer's Name: Other Insured Name:

Insured DOB: Other Insured Policy:

Insurance Plan Name: Insurance Plan City:

Back To Main Menu

2.3.3.3 Billing

All fields are editable on this screen, and you may go back to the main menu at any time, simply by clicking “Back to Main Menu”.
(GUI05-3)

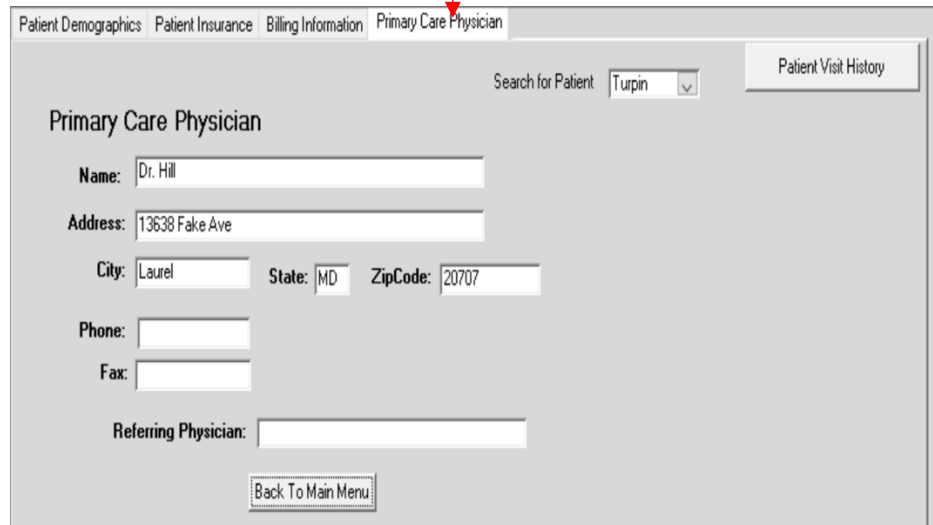
The screenshot shows a web-based interface for a medical system. At the top, there is a navigation bar with four tabs: "Patient Demographics", "Patient Insurance", "Billing Information", and "Primary Care Physician". A red arrow points to the "Billing Information" tab. To the right of the tabs is a "Search for Patient" dropdown menu with "Turpin" selected, and a "Patient Visit History" button. The main content area is titled "Billing Information" and contains a form with the following fields:

- Bill Name:
- Frist Name:
- Middle Name:
- Last Name:
- Address:
- City:
- State:
- Zip Code:
- Phone:

At the bottom right of the form area is a button labeled "Back To Main Menu".

2.3.3.4 Primary Physician

You will have the ability to change all of the information on the page, and you may go back to the main menu at any time, simply by clicking “Back to Main Menu”. (GUI06-3)



The screenshot shows a web-based form for a Primary Care Physician. At the top, there is a navigation bar with four tabs: "Patient Demographics", "Patient Insurance", "Billing Information", and "Primary Care Physician". A red arrow points to the "Primary Care Physician" tab. Below the tabs, there is a "Search for Patient" section with a dropdown menu showing "Turpin" and a "Patient Visit History" button. The main form area is titled "Primary Care Physician" and contains several input fields: "Name:" with the value "Dr. Hill", "Address:" with the value "13638 Fake Ave", "City:" with the value "Laurel", "State:" with the value "MD", "ZipCode:" with the value "20707", "Phone:", "Fax:", and "Referring Physician:". At the bottom of the form, there is a "Back To Main Menu" button.

Tab	Field	Value
Patient Demographics	Name	Dr. Hill
Patient Demographics	Address	13638 Fake Ave
Patient Demographics	City	Laurel
Patient Demographics	State	MD
Patient Demographics	ZipCode	20707
Patient Demographics	Phone	
Patient Demographics	Fax	
Patient Demographics	Referring Physician	
Patient Insurance		
Billing Information		
Primary Care Physician		

2.3.3.5 Patient History

You may Log out of the system at any time, by clicking the “Log Out” button located at the bottom of the screen. When clicked, a display box will appear, so that a report may be generated. (GUI07-3)

Patient Demographics Patient Insurance Billing Information Primary Care Physician

Search for Patient Turpin

Patient Visit History

Primary Care Physician

Name: Dr. Hill

Address: 13638 Fake Ave

City: Laurel State: MD ZipCode: 20707

Phone:

Fax:

Referring Physician:

Back To Main Menu

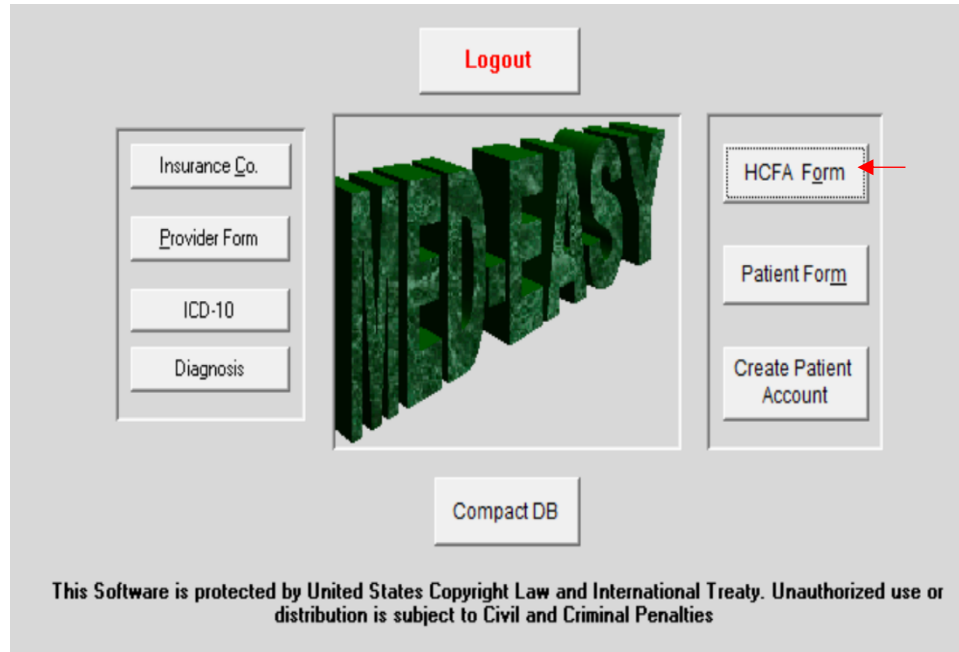
2.3.3.5.1 Patient Visit History

When the user is finished viewing their visit history, they will click the “x” in the upper right corner of the screen to go back to the last screen. (GUI08-3)

VisitID	PatientID	ProviderID	Date	Diagnosis-1	PinNO	Authorizatic	PlanName
1020790	212368774	EVELYN	4/11/16 311	528329-01			
1020791	Reddy, Sundeep S	EVELYN	6/28/16 296.90	528329-01	00QM20000		
1020793	Reddy, Sundeep S	EVELYN	7/4/16 296.90	528329-01	00QM20000		
*	(New)		5/8/16				

2.3.4 HCFA

When selecting the “HCFA” button, you will be directed to the “HCFA” form, where you will have access to input all of the various information that is required within the form. (GUI02-3-2)



2.3.4.1 Navigation

Please click the desired button when entering the information. **(GUI09-3)**

The screenshot shows a web application interface for HCFA forms. At the top, there is a navigation bar with a dropdown menu labeled 'Lookup Visit/Patient', a button 'Show all Records', and a large button 'HCFA Form'. To the right of 'HCFA Form' are four buttons: 'Add Record', 'Delete Record', 'Add Patient', and 'Close Form'. Below this bar is a sub-navigation bar with three tabs: 'Patients Demographics', 'Doctors Procedure', and 'Generate Patient Invoice'. The main content area is divided into several sections. On the left, there are input fields for 'Claim ID: (New)', 'Date:', 'Provider ID:', 'Primary Ins Co.Name:', 'Sec.Ins. Co.Name:', and 'Service Rendered At:'. Below these is a section for insurance information with fields for 'Primary Insurance:', 'Primary Insurance City:', 'Secondary Insurance:', and 'Secondary Insurance City:'. A 'Remark:' field is also present. On the right, there are fields for 'Patient Name:', 'Address:', 'Previous Diagnosis 1:', 'Previous Diagnosis 2:', 'Diagnosis-1:', 'Diagnosis-2:', 'Pin NO:', and 'Group#:', all within a shaded box. Below this box are fields for 'Local19' and 'AUTH'. At the bottom, there are four summary fields: 'Sum of Charges:', 'Sum Insurance Paid:', 'Sum Patient Paid:', and 'Balance Due:'.

2.3.4.1.1 Top Panel

2.3.4.1.1.1 Lookup Record

This option provides a search bar that will allow you to pull the HCFA forms for a specified patient. **(GUI010-3)**

2.3.4.1.1.2 Show All Records

This option provides all records for the selected individual from the “Lookup Visit/Patient”. **(GUI11-3)**

2.3.4.1.1.3 Add Record

This option generates a new HCFA Form when selected for an individual. **(GUI12-3)**

2.3.4.1.1.4 Delete Record

This option will remove the HCFA form from the system. **(GUI13-3)**

2.3.4.1.1.5 Add Patient

This option provides the ability to add a new patient so a HCFA Form can be created. **(GUI14-3)**

2.3.4.1.1.6 Menu

This option will take you back to the forms menu. **(GUI15-3)**

2.3.4.1.2 Entering Information

Once you have selected the correct patient, and have their records pulled, please enter the appropriate information into the various fields. **(GUI16-3)**

2.3.4.1.3 Entry Options

You may put information into three different areas, “Patient Demographics”, “Doctors Procedure”, or “Generate Patient Invoice”.

2.3.4.1.3.1 Patient Demographics

(GUI09-3-1)

The screenshot displays the 'HCFA Form' application window. At the top, there is a 'Lookup Visit/Patient' dropdown menu with a red arrow pointing to it, a 'Show all Records' button, and a title bar 'HCFA Form'. To the right of the title bar are buttons for 'Add Record', 'Delete Record', 'Add Patient', and 'Close Form'. Below the title bar, there are three tabs: 'Patients Demographics' (which is selected), 'Doctors Procedure', and 'Generate Patient Invoice'. The main content area is divided into several sections. On the left, there are fields for 'Claim ID: (New)', 'Date:', 'Provider ID:', 'Primary Ins Co.Name:', 'Sec. Ins. Co.Name:', and 'Service Rendered At:'. Below these is a box containing 'Primary Insurance:', 'Primary Insurance City:', 'Secondary Insurance:', and 'Secondary Insurance City:'. At the bottom left is a 'Remark:' text area. On the right, there are fields for 'Patient Name:', 'Address:', 'Previous Diagnosis 1:', 'Previous Diagnosis 2:', 'Diagnosis-1:', 'Diagnosis-2:', 'Pin NO:', and 'Group#:'. Below these is a 'Local19' field and an 'AUTH' button. At the very bottom, there are four summary fields: 'Sum of Charges:', 'Sum Insurance Paid:', 'Sum Patient Paid:', and 'Balance Due:'. Each of these fields has a corresponding input box below it.

2.3.4.1.3.2 Doctors Procedure

This is where the doctor will enter the information from the previous visit. **(GUI17-3)**

The screenshot displays a software interface for an HCFA Form. At the top, there is a navigation bar with a dropdown menu labeled 'Lookup Visit/Patient', a button 'Show all Records', and a large button 'HCFA Form'. To the right of 'HCFA Form' are four buttons: 'Add Record', 'Delete Record', 'Add Patient', and 'Close Form'. Below this is a tabbed interface with four tabs: 'Patients', 'Demographics', 'Doctors Procedure' (which is the active tab), and 'Generate Patient Invoice'. The main content area contains several input fields and buttons. On the left, there is a 'Patient Name' dropdown and a 'Visit ID' dropdown with '(New)' next to it. Below these are five stacked input fields: 'From:', 'Place of Service:', 'Diagnosis Code:', 'ICD Code:', 'Charges:', 'Type of Service:', and '24K:'. On the right, there are two stacked boxes. The top box contains 'Insurance Paid:' and 'Insurance Paid Date:'. The bottom box contains 'Patient Paid:' and 'Patient Paid Date:'. Below these boxes is a 'Balance Due:' field. At the bottom right of the form is an 'Open Report' button. A red arrow points from the 'Show all Records' button to the 'Doctors Procedure' tab.

Lookup Visit/Patient Show all Records HCFA Form Add Record Delete Record Add Patient Close Form

Patients Demographics Doctors Procedure Generate Patient Invoice

Patient Name: Visit ID: (New)

From: Place of Service: Diagnosis Code: ICD Code: Charges: Type of Service: 24K:

Insurance Paid: Insurance Paid Date: Patient Paid: Patient Paid Date: Balance Due:

Open Report

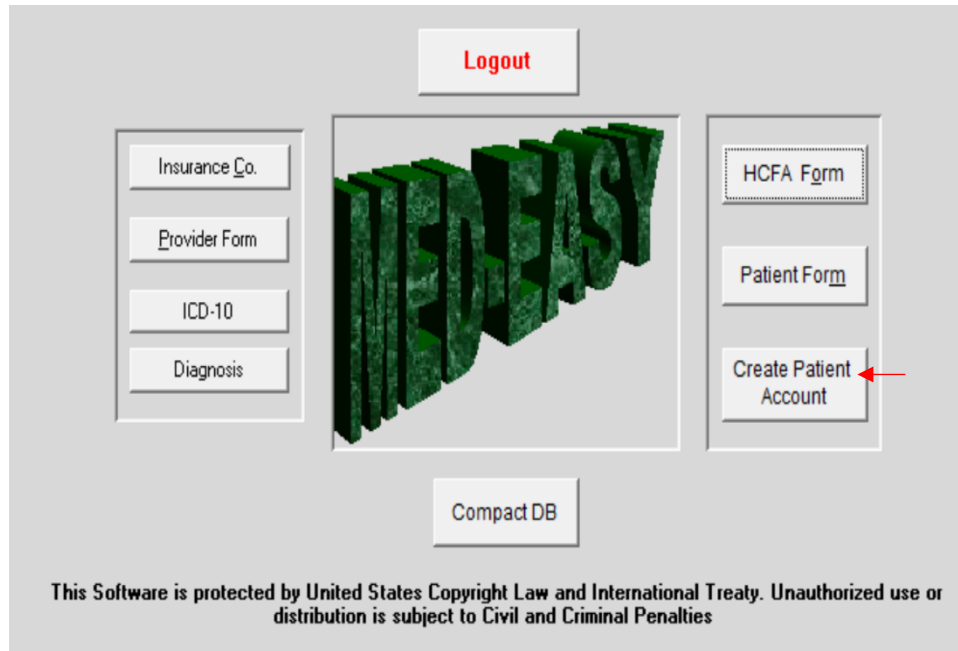
2.3.4.1.3.3 Generate Patient Invoice

This is the section of the program that creates the invoice for the various patients. (GUI18-3)

The screenshot displays a software interface for generating patient invoices. At the top, there is a header bar with a dropdown menu labeled 'Lookup Visit/Patient', a button 'Show all Records', and a title 'HCFA Form'. To the right of the title are four buttons: 'Add Record', 'Delete Record', 'Add Patient', and 'Close Form'. Below the header is a tabbed interface with four tabs: 'Patients', 'Demographics', 'Doctors Procedure', and 'Generate Patient Invoice'. The 'Generate Patient Invoice' tab is currently selected. The main area of the form contains several input fields: 'Patient Name' with a dropdown arrow, 'Visit ID' with a 'New' button, 'Changes' with a text input, 'Visit Date' with a text input, 'Patient Payment' with a text input, 'Insurance Payment' with a text input, and 'Balance Due' with a text input. A horizontal line separates the input fields from a large, empty rectangular area at the bottom of the form.

2.3.5 Create Patient Account

From the “Main Menu” screen, you will select “Create Patient Account”.
(GUI02-2-3)



2.3.5.1 Data Entry

When on this page, the user will enter new users “username”, and “password”, and once completed, they will click “Add New User”. Once finished, the user may click “Close Form” to go back to the main menu. (GUI19-2)

The screenshot shows a web-based form titled 'Create User Account Login'. The form has a header bar with the title. Below the header, there are two input fields: 'User Name' and 'Password'. The 'User Name' field contains the text 'doctor'. The 'Password' field contains six asterisks '*****'. To the right of the 'User Name' field is an 'Add New User' button. Below the 'Password' field is a 'Close Form' button. At the bottom of the form, there is a status bar that reads 'Record: 1 of 3' and includes navigation icons. To the right of the status bar, there is a 'No Filter' button and a 'Search' input field.

2.3.6 Insurance Company

From the “Main Menu” screen, you will select “Insurance Co.”.
(GUI02-2-4)

The Main Menu screen features a central 3D logo that reads "MED EASY". Above the logo is a "Logout" button. Below the logo is a "Compact DB" button. To the left of the logo is a vertical menu with four buttons: "Insurance Co.", "Provider Form", "ICD-10", and "Diagnosis". A red arrow points to the "Insurance Co." button. To the right of the logo is another vertical menu with three buttons: "HCFA Form", "Patient Form", and "Create Patient Account". At the bottom of the screen, a copyright notice states: "This Software is protected by United States Copyright Law and International Treaty. Unauthorized use or distribution is subject to Civil and Criminal Penalties".

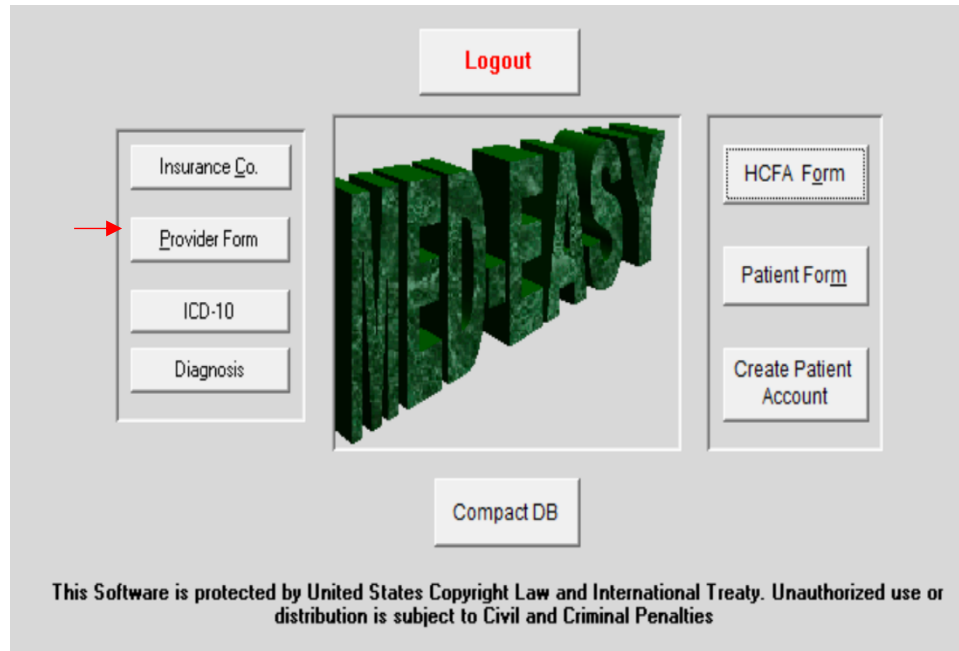
2.3.6.1 Data Entry

After selecting “Insurance Co.”, you will be brought to the screen below, where you will enter your information, and click “Add Record”. You will have the option to return to the main menu of the system, by clicking the button on the left hand side of the screen, named “Back to Main Menu”. (GUI20-2)

The Data Entry screen for Insurance Co. contains several input fields and two buttons. On the left, a button labeled "Back To Main Menu" has a red arrow pointing to it. On the right, a button labeled "Add Record" has a red arrow pointing to it. The input fields are: "Insurance Co. ID:" with a dropdown menu showing "New"; "Insurance Co. Name:"; "Insurance Co. Address:"; "Insurance Co. City:"; "Insurance Co. State:" with a dropdown menu; "Insurance Co. ZipCode:"; and "Insurance Co. Phone:". The "Insurance Co. ID:" field is highlighted with a black border.

2.3.7 Provider Form

From the “Main Menu” screen, you will select “Provider Form”.
(GUI02-2-5)



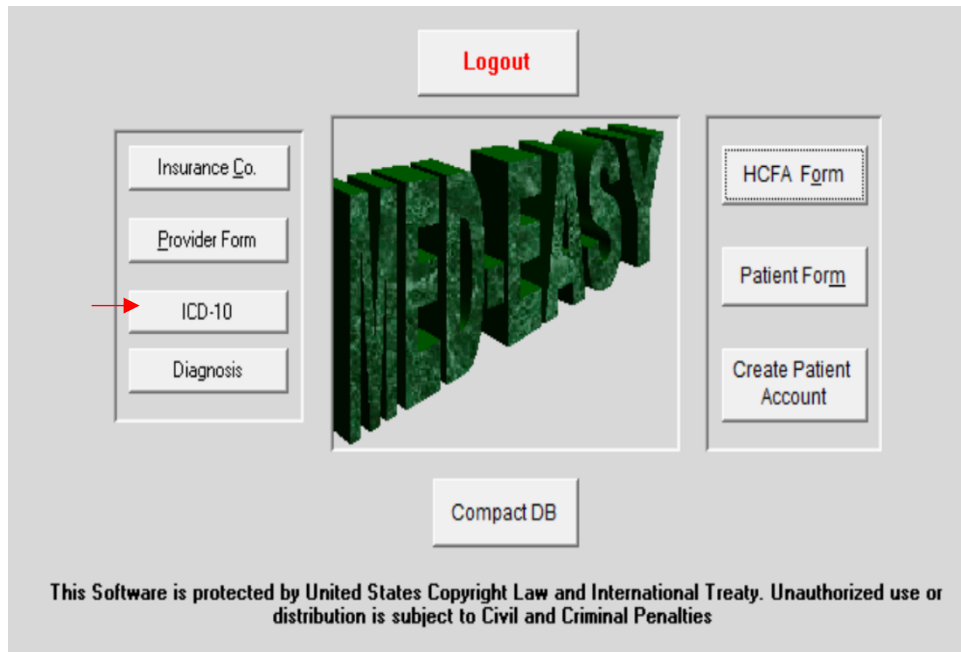
2.3.7.1 Data Entry

When you want to add a new provider into the system, you need to add the required information into the textboxes, and then click “Add Record” button, in order to save the new information into the system. You will then click “Back to Main Menu”, to go back to the main menu. (GUI21-2)

The screenshot shows the 'Provider Data Entry' form. On the left is a 'Back to Main Menu' button, highlighted with a red arrow. To its right are four input fields: 'Provider ID:' with a '(New)' button, 'First Name:', 'Middle Name:', and 'Last Name:'. On the far right is an 'Add Record' button, also highlighted with a red arrow.

2.3.8 ICD-10

From the “Main Menu” screen, you will select “ICD-10”. (GUI02-2-6)



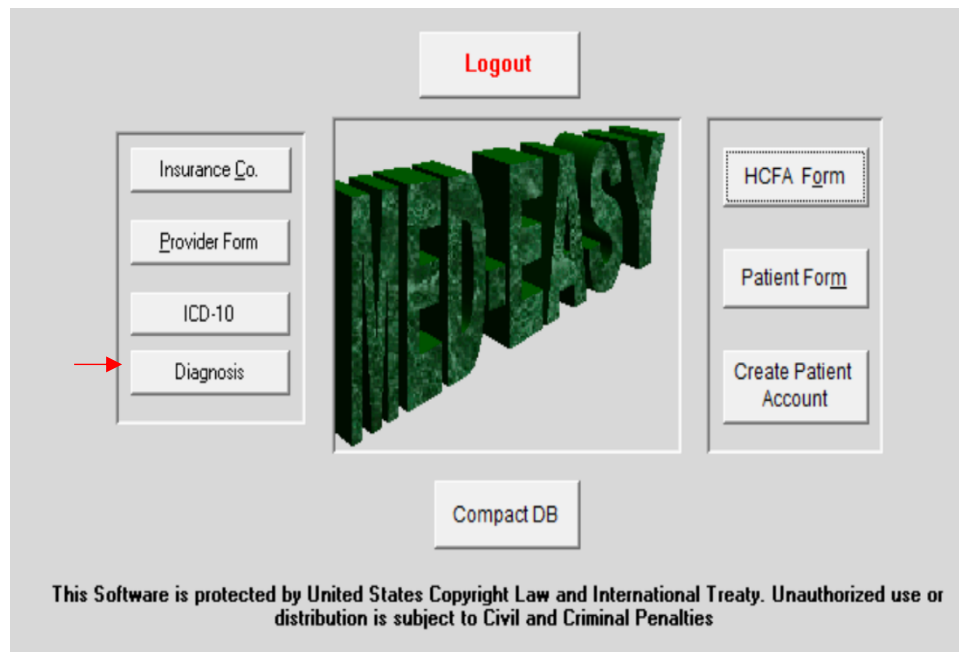
2.3.8.1 Adding Data

When adding a new ICD-10 code into the system, you will enter the information into the various textboxes, and click the “Add Record” button to save the new information into the system. You may then press the “Back to Main Menu”, to go back to the main menu. (GUI22-2)



2.3.9 Diagnosis

From the “Main Menu” screen, you will select “Diagnosis”. (GUI02-2-7)



2.3.9.1 Data Entry

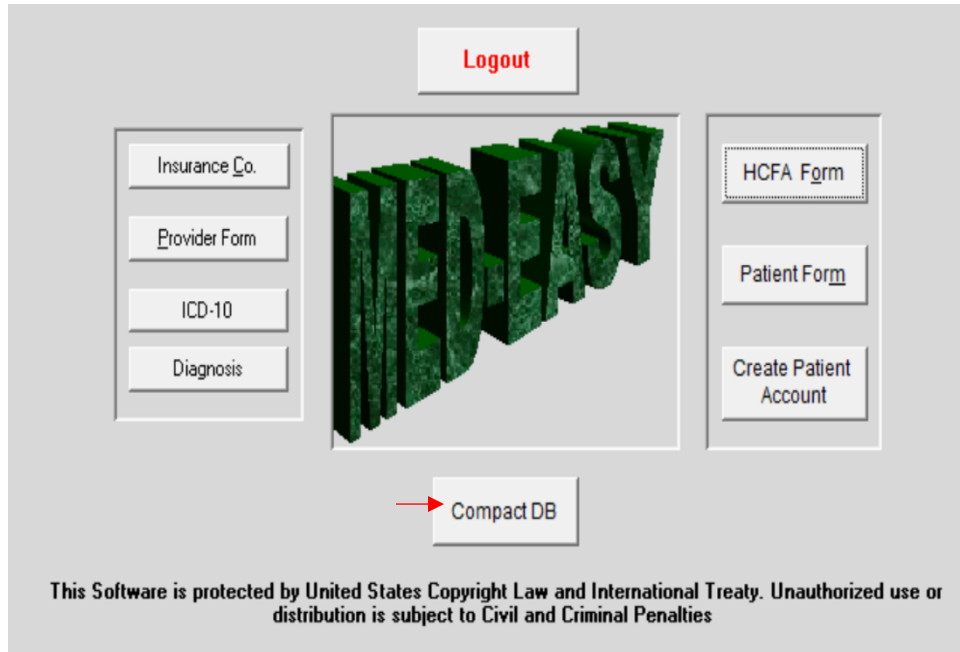
When you want to add new information into the system, you will enter the information into the various text boxes, and then click “Add Record” button to save the new information into the system. You may then press the “Back to Main Menu”, to go back to the main menu. (GUI23-2)

The screenshot shows the Data Entry form. It has a "Back to Main Menu" button on the left. To its right are two text input fields. The first field is labeled "Diagnosis" and the second field is labeled "Description". To the right of these fields is an "Add Record" button.

2.3.10 Compact Database

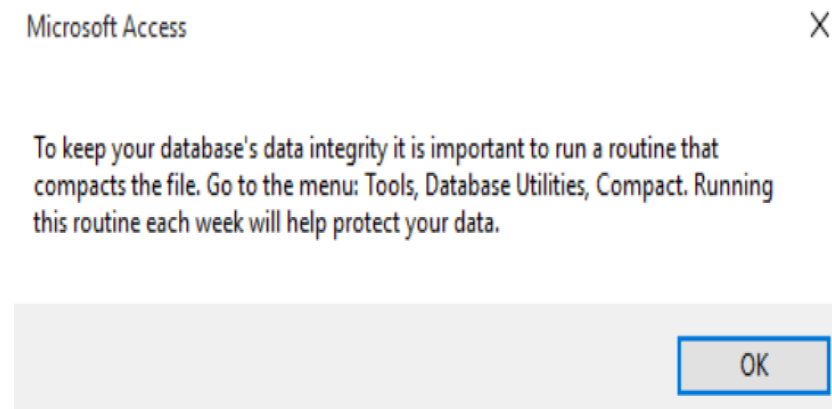
From the “Main Menu” screen, you will select “Compact Database”.

(GUI-2-2-8)



2.3.10.1 Display

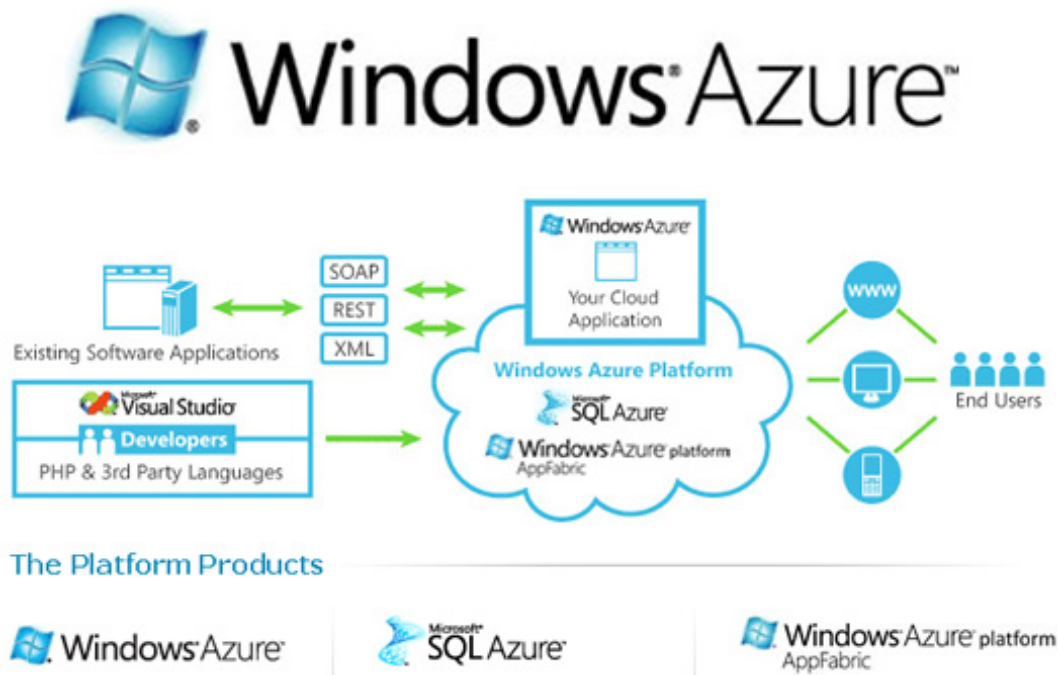
This button will only display a message to remind the primary users of the system to occasionally compact their database, and the necessary steps to accomplish it. (GUI24-2)



3. Deployment Diagram

In order for MedEasy to run properly, the client's system will need to have an Intel Core i5 Quad-core processor, with 25 GB of HDD, and an Intel HD Graphics card - or their respective equivalents. MedEasy will be a server side application, utilizing the Microsoft Azure cloud application. The existing software application (MedEasy) will be placed on the Azure Platform, and then be accessible in real time to the end users. The end users can be either a doctor, admin, or patient of the doctor's office.

Figure 10



This diagram can be found from the following link: <http://techglimpse.com/wp-content/uploads/2014/03/azure1.jpg>

4. Implementation of User Story

4.1 All Users

4.1.1 Log onto the System

UC1) As a user, I want to login my account, so that I can access the system.

4.1.2 Search for Patient

UC2) As an administrator, I want to check a patient account, so that I can know if the patient exists.

4.1.3 Produce a Claim

UC3) As an administrator, I want to get patient information, so that I can produce claim for them.

4.1.4 Update Account Balance

UC4) As an administrator, I want to update patients' account balance, so that they can pay for their remaining balance.

4.1.5 View Account

UC5) As a patient, I want to view my account, so that I can get my diagnosis report and invoice.

4.1.6 Make a Payment

UC6) As a patient, I want to make payments, so that I can paid off my balance on time.

5. Test Case

5.1 Test Case #1

Test Case ID	TC-01		
Test Case Description:		Verify the following text fields from the Login screen – Username, Password	
Related DFD	DFD 1	Related sequence diagram	SD-01

Precondition	Post Condition	Test Data
The Login GUI must exist	Patient login is successful	Test Data 1: Username: patient Password: patient
		Test Data 2: Username: pa1235 Password: 123124

Step #	Step Details	Expected Results	Actual Results	Pass / Fail & comments
1	Click Login	Error message: "Username is blank"		
2	Click 'OK' and 'Enter' <i>Test Data 1</i>	Login in to the system successfully		
3	Click 'Log Out'	Exit MedEasy		
4	Enter Test Data 2	Login failed		

5.2 Test Case #2

Test Case ID	TC-02		
Test Case Description:		Verify if user patient could view his/her account information	
Related DFD	DFD 2	Related Sequence Diagram	SD-03

Precondition	Post Condition	Test Data
The user must login	Patient demographics is accessible	Test Data 1: Username: patient Password: patient
The patient account interface existed	Patient insurance info & billing info is accessible	
	Patient history & payment is accessible	

Step #	Step Details	Expected Results	Actual Results	Pass / Fail & comments
1	Use Test Data 1 to login	Login successful		
2	Click the "Patient Demographics" tab	Display the 'Patient Demographics'		
3	Click "Patient Insurance" tab	Display the 'Patient's Insurance' information		
4	Click the "Billing Information" tab	Display the 'Patient's Billing' information		
5	Click the "Primary Care Physician" tab	Display the patient's 'Primary Care Physician' information		
6	Click the "Patient History" tab 6) cursor position	Display the 'Patient History'		
7	Click the "Payment" tab	Allow the patient to make a payment		
8	Click "Log Out"	Exit MedEasy		

5.3 Test Case #3

Test Case ID	TC-03		
Test Case Description:	Verify the text fields in the Payment screen		
Related DFD	DFD 7	Related Sequence Diagram	SD-07

Precondition	Post Condition	Test Data
The user must login, and the screen of "Payment" must exist	All fields in "Payment" have been filled	Test Data 1: Username: patient Password: patient
		Test Data 2: Name on Credit Card: Marry Lee EXP: 03/12/2018 Credit Card Number: 1234567890123456 CVC: 909 Amount Paid: \$213.00

Step #	Step Details	Expected Results	Actual Results	Pass / Fail & comments
1	Use Test Data 1 to login	Login successful		
2	Click "Payment" tab	Display blank data fields		
3	Enter Test Data 2	Filled data fields		
4	Click Log Out	Exit MedEasy		

5.4 Test Case #4

Test Case ID	TC-04		
Test Case Description:		Verify the following text fields in the Login screen – Username, Password	
Related DFD	DFD 1	Related sequence diagram	SD-01

Precondition	Post Condition	Test Data
The Login GUI must existed	Admin or Doctor Login is successful	Test Data 1: Username: admin Password: admin
		Test Data 2: Username: we1235 Password: fsd3312
		Test Data 3: Username: doctor Password: doctor
		Test Data 4: Username: ascee3 Password: summer2016

Step #	Step Details	Expected Results	Actual Results	Pass / Fail & comments
1	Click "Login"	Error message: "Username is blank"		
2	Click "OK" and Enter Test Data 1	Login successful		
3	Click "Log Out"	Exit MedEasy		
4	Enter Test Data 2	Login failed		
5	Enter Test Data 3	Login successful		
6	Click "Log Out"	Exit MedEasy		
7	Enter Test Data 4	Login failed		
8				

5.5 Test Case #5

Test Case ID	TC-05		
Test Case Description:		Verify the text fields in the "Create Patient Account" and be able to save the filled information	
Related DFD	DFD 3	Related Sequence Diagram	SD-02

Precondition	Post Condition	Test Data
The user must login.	New patient account is created	Test Data 1: Username: admin/ Password: admin
The "Create Patient Account" button is able to guide the user to the GUI of "Create Patient Account"		

Step #	Step Details	Expected Results	Actual Results	Pass / Fail & comments
1	Use Test Data 1 to login	Login as an admin successfully		
2	Click "Create New Account"	Display "Create New Account"		
	Click "Add New User"	A blank text field page		
3	Input any username and password, and remember it, because you will need to use what you created to login again	Filled input is saved automatically		
4	Click "Back To Main Menu"	Main Menu		
5	Click "Log Out"	Exit MedEasy		
6	Login (use the username and password from step 3)	Error Message "Password Invalid" (because there are only three types of user accounts - patient, admin, and doctor. This means the username and password are to show the access level)		
7	Click "OK"	Login screen		

5.6 Test Case #6

Test Case ID	TC-06		
Test Case Description:	Update the text fields in the "Patient Form".		
Related DFD	DFD 3	Related Sequence Diagram	SD-05

Precondition	Post Condition	Test Data
The user must login, and the "Patient Form" is able to guide the user to next GUI	Data is updated	Test Data 1: Username: admin Password: admin
		Test Data 2: Address: 300 parker road Zip Code: 99999 Home Phone: 000-111-1234
		Test Data 3: Home Phone: 000-111-123456
		Test Data 4: Zip Code: 21210asd

Step #	Step Details	Expected Results	Actual Results	Pass / Fail & comments
1	Use Test Data 1 to login	Login as an administrator successfully		
2	Click the "Patient Form" button	Open "Patient Form" GUI		
3	Select a patient name randomly in the "Search for Patient" dropdown menu, under the "Patient Demographics" tab.	The selected patient information is displayed in all tabs, which includes the Patient Demographics, Patient Insurance, Billing Information, Primary Care Physician, and Patient History.		
4	Enter Test Data 2	Data is entered and saved		
5	Enter Test Data 3	User hears a sound, because the input data has to be exactly 10 digits long		
6	Click "OK" and Enter Test Data 4	Error message: "The value you entered isn't valid for this field."		
7	Click "OK" and Click "Back to Main Menu"	Error message: "The value you entered isn't valid for this field."		
	Delete "asd" in Zip Code text field and Click "Back To Main Menu"	Main Menu		
8	Click "Log Out"	Exit MedEasy		

5.7 Test Case #7

Test Case ID	TC-07		
Test case description:	Add record in the "Patient Form" screen		
Related DFD	DFD 3	Related sequence diagram	SD-05

Precondition	Post-condition	Test Data
The user must login, and the "Patient Form" is able to guide the user to the next GUI	New patient record is created	Test Data 1: Username: admin Password: admin
		Test Data 2: First Name: Marry Last Name: Lee DOB: 1/1/1988 Gender: F Emergency Contact: 222-333-4444
		Test Data 3: Address: 300 parker road Zip Code: 1234567

Step #	Step Details	Expected Results	Actual Results	Pass / Fail & comments
1	Enter Test Data 1 to login	Login as an administrator successfully		
2	Click the "Patient Form" button	Open the "Patient Form"		
3	Click the "Add New Patient Record" button	Blank page appears		
4	Enter Test data 2 to fill the mandatory fields	Input is saved		
5	Enter Test data 3	Error message: "The value you entered isn't valid for this field."		
6	Click "OK" and Click "Back to Main Menu"	Error message: "The value you entered isn't valid for this field."		
7	Delete "67" in the Zip Code text field and Click the "Back To Main Menu" button	Main Menu		
8	Click Log Out	Exit MedEasy		

5.8 Test Case #8

Test Case ID	TC-08		
Test Case Description:	Validate if a doctor or admin could view patient information		
Related DFD	DFD 2	Related sequence diagram	SD-03

Precondition	Post-condition	Test Data
The user is authorized and the patient exists	The patients information is viewed by a doctor or an administrator	Test Data 1: Username: doctor Password: doctor
		Test Data 2: Username: admin Password: admin

Step #	Step Details	Expected Results	Actual Results	Pass / Fail & comments
1	Enter Test Data 1 to login	Login as a doctor successfully		
2	Click the "Patient Form" button	The "Patient form" appears		
3	Find the patients name in "Search for Patient" dropdown menu in "Patient Demographics" tab.	The patient information is displayed on all tabs, which includes the Patient Demographics, Patient Insurance, Billing Information, Primary Care Physician, and Patient History.		
4	Click the "Back To Main Menu" button	Main Menu		
5	Click "Log Out"	Exit MedEasy		
6	Enter Test Data 2 to login	Login as an administrator successfully		
7	Click the "Patient Form" button	The "Patient form" appears		
8	Find the patients name in "Search for patient" dropdown menu, in "Patient Demographics" tab.	The patient information is displayed on all tabs, which includes the Patient Demographics, Patient Insurance, Billing Information, Primary Care Physician, and Patient History.		
9	Click the "Back To Main Menu" button	Main Menu		
10	Click "Log Out"	Exit MedEasy		

5.9 Test Case #9

Test Case ID	TC-09		
Test Case Description:	Verify the text fields in the "Generate Patient Invoice" and the derived value field will be calculated automatically		
Related DFD	DFD 6	Related Sequence Diagram	SD-06

Precondition	Post Condition	Test Data
The user is authorized, and GUI of the HCFA Form exists	Invoice is produced and stored	Test Data 1: Username: admin Password: admin
		Test Data 2: Charges: 213 Patient payment: 10 Insurance payment: 203
		Test Data 3: Charges: asdf

Step #	Step Details	Expected Results	Actual Results	Pass / Fail & comments
1	Enter Test Data 1 to login	Login as an administrator successfully		
2	Click the "HCFA Form" button	The "HCFA form" page appears		
3	Click the "Generate Patient Invoice" tab	The "Generate patient invoice" tab appears		
4	Click the "Patient Name" to find a patient randomly in the dropdown menu	Found a patient.		
5	Enter Test Data 2	"Balance Due" is calculated automatically		
6	Enter Test Data 3	Error message: "The value you entered isn't valid for this field."		
7	Click "OK" and Click "Close Form"	Error message: "The value you entered isn't valid for this field."		
	Delete Test Data 3 and Click "Close Form"	Main Menu		
8	Click Log Out	Exit MedEasy		

5.10 Test Case #10

Test Case ID		TC-10		
Test Case Description:		Generate report		
Related DFD		DFD 5	Related Sequence Diagram	SD-04

Precondition	Post-condition	Test Data
The user has been authorized, and the HCFA Form exists and searched patient is exists	HCFA form is ready	Test Data 1: Username: admin Password: admin

Step #	Step Details	Expected Results	Actual Results	Pass / Fail & comments
1	Use Test Data 1 to login	Login as an administrator successfully		
2	Click the "HCFA Form" button	The "HCFA form" page appears		
3	Click the "Patient Demographics" tab	The "Patient Demographics" tab appears		
4	Click the "Patient Name" to find the patients name in the dropdown menu	The patient has been found. All three of the tabs appear, with the results from the same patient.		
7	Click "Close Form"	Main Menu		
8	Click "Log Out"	Exit MedEasy		

5.11 Test Case #11

Test Case ID	TC-11		
Test Case Description:		Validate if a doctor be able to produce patient diagnosis and ICD-10	
Related DFD	DFD-4	Related Sequence Diagram	SD-08

Precondition	Post-condition	Test Data
The user has been authorized, and the HCFA Form button is able to guide the user to the HCFA Form, with all of the text fields in "Doctors Procedure" tab being populated	The diagnosis and ICD-10 codes have been filled and saved	Test Data 1: Username: doctor Password: doctor
		Test Data 2: Place of Service: Maryland General Hospital Diagnosis code: 1 ICD code: 88803

Step #	Step Details	Expected Results	Actual Results	Pass / Fail & comments
1	Enter Test Data 1 to login	The doctors login is successful		
2	Click the "HCFA form" button	The "HCFA form" page appears		
3	Click the "Doctors Procedure" tab	The "Doctors Procedure" tab appears, and allows the doctor to input/select "Place of Service", "Diagnosis Code" and "ICD-10 Code", etc		
4	Click the "Patient Name" to find the patient in the dropdown menu	The patient is found		
5	Enter Test Data 2	Data in entered and saved		
6	Click "Close Form"	Main Menu		
7	Click "Log Out"	Exit MedEasy		

6. Traceability Analysis

Use Case	GUI	DFD	User Manual	Test Case
UC01	GUI01-1, GUI01-2, GUI01-3	DFD1	2.1.1, 2.2.1, 2.3.1	TC-01 TC-04
UC02	GUI03-3, GUI09-3, GUI17-3, GUI18-3	DFD1, DFD2, DFD3	2.3.3.1, 2.3.4.1, 2.3.4.1.3.2, 2.3.4.1.3.3	TC-05
UC03	GUI02-3-2, GUI09-3, GUI09-3-1, GUI17-3, GUI18-3	DFD1, DFD2, DFD5	2.3.4, 2.3.4.1, 2.3.4.1.3.1, 2.3.4.1.3.2, 2.3.4.1.3.3	TC-09
UC04	GUI18-3	DFD1, DFD2, DFD6	2.3.4.1.3.3	TC-08
UC05	GUI06-1, GUI07-1, GUI08-1, GUI09-1	DFD1, DFD2, DFD6	2.1.6, 2.1.6.1, 2.1.7, 2.1.7.1	TC-06
UC06	GUI06-1, GUI07-1	DFD1, DFD2, DFD7	2.1.6, 2.1.6.1	TC-03