

CSC 540 - DATABASE MANAGEMENT CONCEPTS & SYSTEMS

FALL 2019 PROJECT 1 - DATABASE APPLICATION DESIGN & IMPLEMENTATION

Medical Facility Performance Dashboard Application

Application Flow

Application Menu

Below is the application menu for the Medical Facility system. We expect you to follow this program flow strictly. You must validate all user input and display appropriate error messages whenever necessary prompting the user to re-enter his input, even if it may not be explicitly stated.

Start Pages

Home

| Display | Menu | Input | Output |
|------------------|---|--------------------|---|
| Display the menu | <ul style="list-style-type: none">1. Sign In2. Sign Up (Patient)3. Demo Queries4. Exit | Enter Choice (1-4) | <p>Go to the appropriate page.</p> <p>If exit is chosen, terminate the program.</p> |

SignIn

| Display | Menu | Input | Output |
|---------|------|-------|--------|
|---------|------|-------|--------|

| | | | |
|--|----------------------------------|---------------------------|--|
| <p>Ask user to input the following details in the order shown below, followed by the menu. Provide a list of facilities to choose from.</p> <ul style="list-style-type: none"> A. Facility id B. Last name C. Date of Birth D. City of address E. Patient with options yes/no | <p>1. Sign-In 2. Go Back</p> | <p>Enter Choice (1-2)</p> | <p>If the user chooses 1, validate credentials and bring them to patient routing page.</p> <p>Print “Sign in Incorrect” for invalid credentials and ask to enter again.</p> <p>If the user chooses 2, go back to the Home page</p> |
|--|----------------------------------|---------------------------|--|

Sign Up

| Display | Menu | Input | Output |
|--|----------------------------------|---|--|
| <p>Ask user to input the following details in the order shown below, followed by the menu.</p> <ul style="list-style-type: none"> A. First Last Name B. Date of Birth C. Address D. Phone Number | <p>1. Sign Up 2. Go Back</p> | <p>Take input from user about the new patient.</p> <p>After entering details A-D, choose option 1-2 from the menu</p> | <p>If the user chooses 1, save his entered information into database creating an account for this customer and go to SignIn page after displaying an appropriate message.</p> <p>If the user chooses 2, go back to the Home page</p> |

Patient pages

Patient Routing

| Display | Menu | Input | Output |
|------------------|---|--------------------|--|
| Display the Menu | <ol style="list-style-type: none">1. Check-in2. Check-out acknowledgement3. Go back | Enter choice (1-3) | <ol style="list-style-type: none">1. If patient is already checked in in this facility and haven't checked out yet, prompt then error message. Otherwise go to check-in page2. After medical staff generate report for patients visits, patient need to acknowledge it to complete checkout process |

Patient Check-in

| Display | Menu | Input | Output |
|----------------------|---|--------------------|--|
| Display the symptoms | <ol style="list-style-type: none">1. Pain2. Fever3. ... <p>N-1. Other N. Done</p> | Enter choice (1-N) | Display the meta symptom page for a symptom chosen, if the user selects other, allow them to provide a description for the symptom. For N, validate, record time, logout and |

| | | | |
|--|--|--|--|
| | | | return to the Home page. |
|--|--|--|--|

Patient symptom meta

| Display | Menu | Input | Output |
|------------------|--|--|--|
| Display the menu | <ol style="list-style-type: none"> 1. Body part 2. Duration 3. Reoccurring? 4. Severity 5. Cause (Incident) | Choose 1-4 to enter a new value depending on symptoms, some symptoms have implied value so ignore those, once everything has been filled return to check-in page | Prompt the user to enter or choose value or go back to patient check-in page once everything has been filled |

Medical Staff pages

Staff Menu

| Display | Menu | Input | Output |
|------------------|---|------------|---|
| Display the menu | <ol style="list-style-type: none"> 1. Checked-in patient list 2. Treated patient list 3. Add symptoms 4. Add severity scale 5. Add assessment rule 6. Go back | Choose 1-6 | <ol style="list-style-type: none"> 1. Staff process patient page 2. Staff check-out patient page <p>3 - 6 Take user to appropriate page</p> |

Staff process patient

| Display | Menu | Input | Output |
|---|--|--|--|
| Display the list of patients who finished self check in Display the menu | 1. Enter Vitals 2. Treat patient 3. Go back | Choose patient number from list then Choose 1-3 | Check if user is medical staff, if not prompt user and go back. If the user chooses 1 go to enter vital page If the user chooses 2, check if user could treat body part associated to patient symptoms, if yes, move patient to treated list, else prompt for inadequate privilege. |

Staff enter vital

| Display | Menu | Input | Output |
|---------|------|-------|--------|
|---------|------|-------|--------|

| | | | |
|--|--|---------------------------|---|
| <p>Ask user to input the following details in the order shown below, followed by the menu.</p> <p>A. Temperature B. Systolic blood pressure C. Diastolic blood pressure</p> | <p>1. Record 2. Go back</p> | <p>Enter choice (1-2)</p> | <p>1. Record time, trigger assessment, display priority and go back</p> <p>2. Go back</p> |
|--|--|---------------------------|---|

Add symptoms

| Display | Menu | Input | Output |
|---|--|---------------------------|-------------------------------------|
| <p>Ask user to input the following details in the order shown below, followed by the menu.</p> <p>A. Symptom name B. Symptom body part (leave blank if not exclusively associated to one body part) C. Symptom Severity (display type of severity to choose, leave blank for no severity associated)</p> | <p>1. Record 2. Go Back</p> | <p>Enter Choice (1-2)</p> | <p>Go back to Staff Menu</p> |

Add Severity Scale

| Display | Menu | Input | Output |
|------------------|--|--|-----------------------|
| Display the menu | <ol style="list-style-type: none"> 1. There's another level for this scale 2. There's no more levels 3. Go back | If user chose, prompt the user to enter this severity level, for example "bad", then loop back to the menu until user chose 2. | Go back to Staff Menu |

Add assessment rule

| Display | Menu | Input | Output |
|--|--|--|--|
| Similar to patient check in: Display the symptoms | <ol style="list-style-type: none"> 1. Pain 2. Fever 3. ... N. Select priority | Enter Choice (1-N) | 1-(N-1). Goto bodypart N. Goto priority (when all symptom-entries are done) |
| Display the body part associated with symptom | | Body parts that could be associated with symptom | Prompt the user to enter or choose value then goto severity scale |
| Display the Severity scale associated with symptom | | Severity scale | Prompt the user to enter or choose value then goto the top for next symptom in this rule |
| Display the menu | <ol style="list-style-type: none"> 1. High 2. Normal 3. Quarantine | | Go back to Staff menu |

* the flow works this way: for the rule you're creating: select symptom - select bodypart - select scale (>/=< value/normal high severe) - select next symptom, next bodypart When you're done select priority

Treated Patient list

| Display | Menu | Input | Output |
|--|----------------------------|---|--|
| Display the list of Treated patients Display the menu | 1. Check out 2. Go back | Ask the user to choose the patient from the displayed list. Enter Choice (1-2) | If user chooses 1, redirect to Staff-patient checkout, for option 2 go to Staff menu |

Checkout process: (Srilatha and Kiran)

Staff - Patient Report

| Display | Menu | Input | Output |
|------------------|--|------------------|--|
| Display the menu | 1. Discharge Status 2. Referral Status 3. Treatment 4. Negative Experience 5. Go back 6. Submit | Enter choice 1-6 | Redirect to appropriate page. If 3 is selected then allow user to input treatment description. Save the text and stay on the same page. If user chooses 6. Submit then go to Staff Patient report confirmation. |

Discharge status

| Display | Menu | Input | Output |
|---------|------|-------|--------|
|---------|------|-------|--------|

| | | | |
|------------------|---|------------------|-----------------------------------|
| Display the menu | <ol style="list-style-type: none"> 1. Successful treatment 2. Deceased 3. Referred 4. Go back | Enter choice 1-4 | Redirect to Staff-Patient Report. |
|------------------|---|------------------|-----------------------------------|

Referral status

| Display | Menu | Input | Output |
|------------------|---|------------------|--|
| Display the menu | <ol style="list-style-type: none"> 1. Facility id 2. Referrer id 3. Add reason 4. Go back | Enter choice 1-4 | <p>If user chooses 1 or 2, ask user to input value. If user chooses 3 then go to referral reason page.</p> <p>Otherwise go to Staff-Patient Report page.</p> |

Referral Reason

| Display | Menu | Input | Output |
|---|---|--------------|--|
| Display the reason code, the name of the service and description(1/2/3) | <ol style="list-style-type: none"> 1. Reason 2. Go back | Enter choice | <p>If user chooses 1, then record users reason code. If user chooses 2 go back to Referral status page</p> |

Negative Experience

| Display | Menu | Input | Output |
|-----------------------------|---|------------------|---|
| Display the menu with code. | <ol style="list-style-type: none"> 1. Negative experience Code 2. Go back | Enter choice 1-2 | <p>If 1 is selected allow user to choose the code and add description else redirect to the Staff-Patient Report</p> |

Staff - Patient Report Confirmation

| Display | Menu | Input | Output |
|--|---|---------------------|---|
| Display the report and ask the user for confirmation | <ol style="list-style-type: none">1. Confirm2. Go back | Enter choice 1 or 2 | If user chooses 1 go to Staff Menu page otherwise go to Staff - Patient Report. |

Patient Checkout Acknowledgement

| Display | Menu | Input | Output |
|--|---|------------------|--|
| Display the report that is filled by the staff | <ol style="list-style-type: none">1. Yes2. No3. Go Back | Enter choice 1-3 | If user selects 1 or 3 redirect to Patient routing page. If this is 2 then user must enter a reason and then redirect to patient routing page. |