Undergraduate Research Project

A Secure Comprehensive Health-care System: From Design to Implementation

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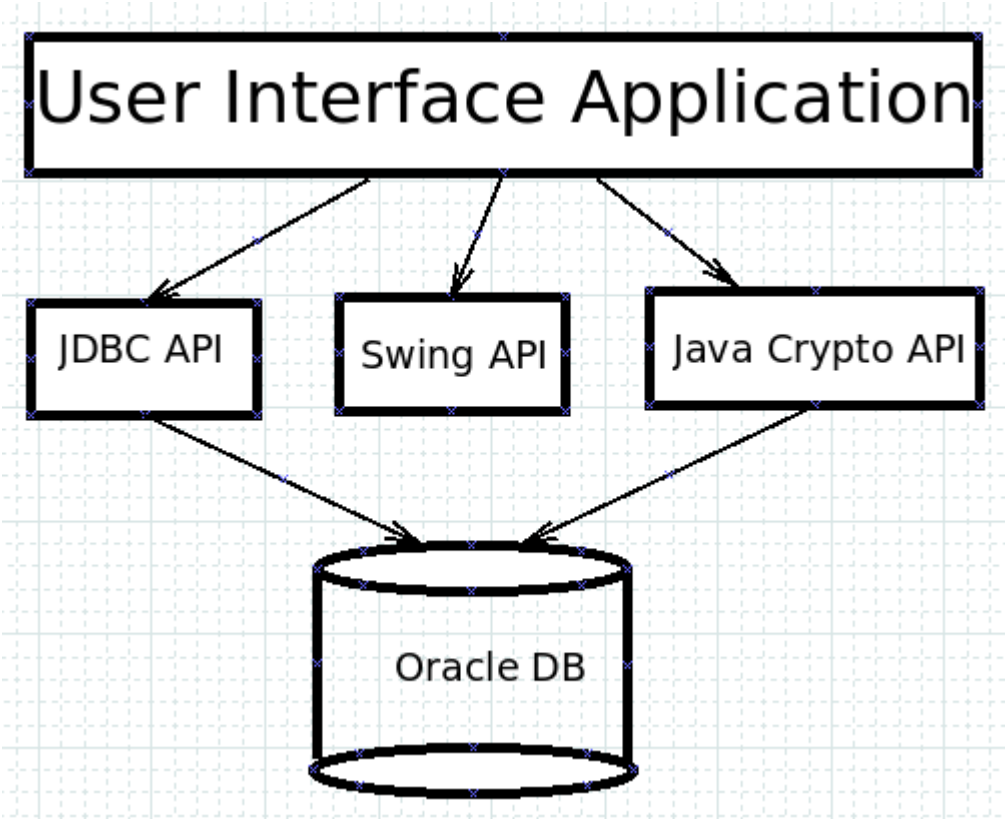
A Secure Comprehensive Health-care System: From Design to Implementation

- System Design



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A Secure Comprehensive Health-care System: From Design to Implementation

- The Clinical Information Systems Security Model
  - Patient: subject of medical records (or agent)
  - Person health information: data about patient's health or treatment enabling identification of patient.
  - Health-care provider: access to personal health information
  - Medical Office Staff: Manage and maintain basic information of health-care providers and patients

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A Secure Comprehensive Health-care System: From Design to Implementation

- Development Tools
  - Netbeans IDE 8.0
  - JDK 1.7
  - Oracle 10g

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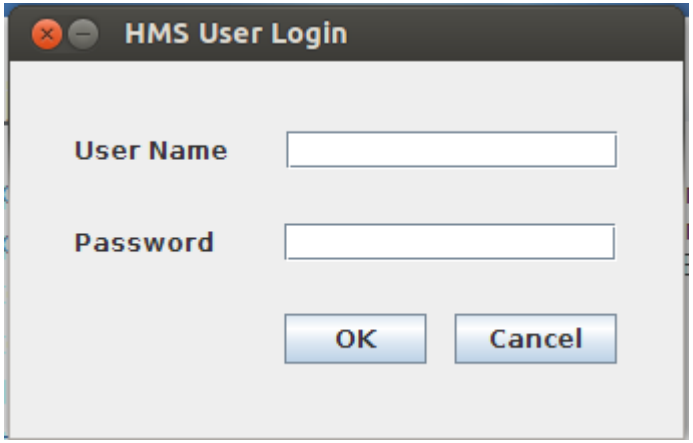
- Login Screen
  - Allow User To key in User name and password
  - Connect to Oracle DB
  - Check for right User
  - Password from DB is decrypted to compare user login password.



LOGINNAME	LOGINPASSWORD
hwilson	hRxjEs9Ogsd+4o5voSZ7...
jameswolf	YjBQz7a9jvqG5sGyKNZA...
thuff	Raudl4lvVzHrntXoEgIA...
charlie	+Ln9qTujEl2BtfKUxfZU...
earlnix	w4XMgMCLrjzY3uvYvvDa...
kwillion	eFdjm6XBTsOulRaaYuSw...
kshane	v4A48lMrlyp5/IM7fvUS...
tkoh	XFA4vm37pMm/lVPdYs0l...
mmoh	YILIhSAtm5fCNrxMtQlv...
smike	xpZUbBLEia2xVTaO9fsf...
tkywe	pd9KgRLQpc793vVRs9qL...

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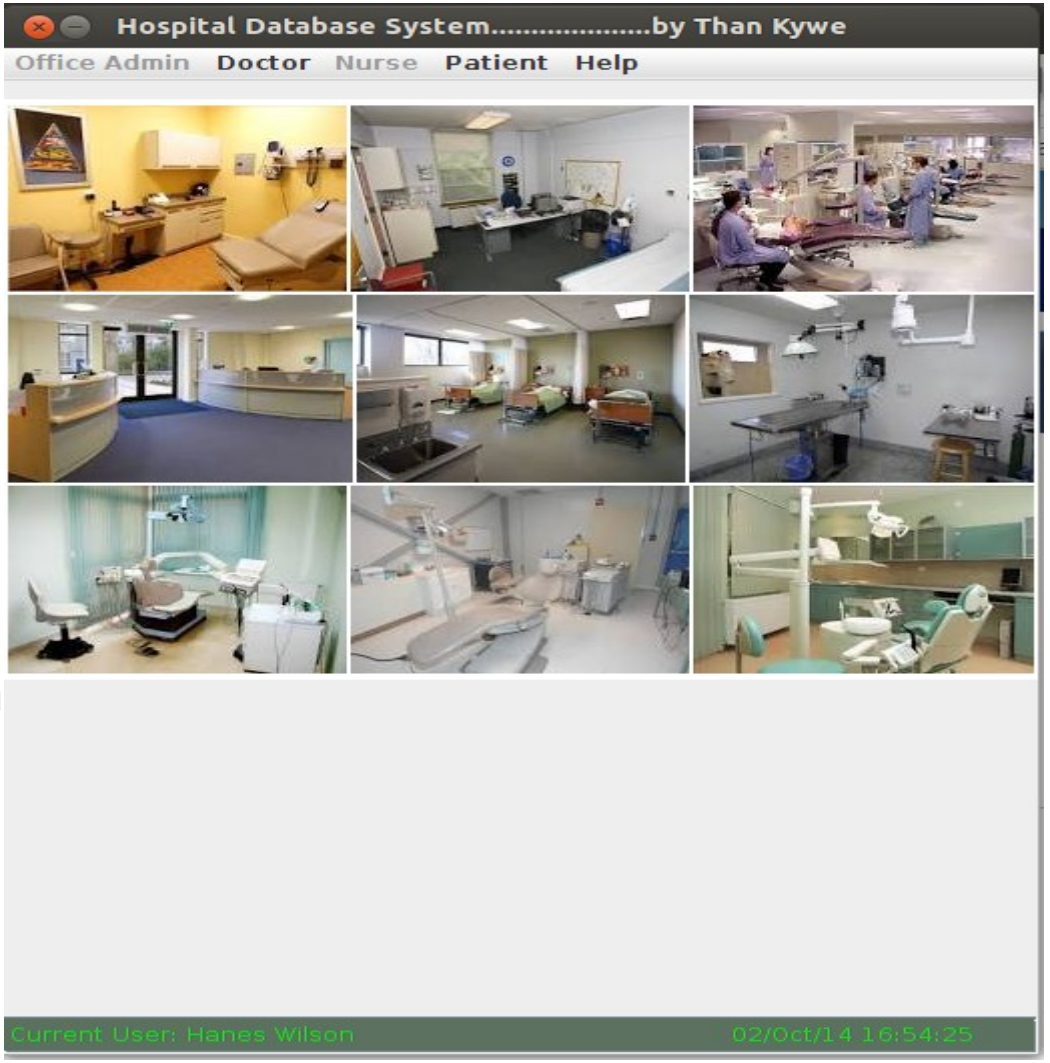
- Main Screen
  - Detect Current User Name and Title
  - Current user and access time have been shown in status bar.
  - Based on title, accessible features are different.
    - Physician
    - Nurse
    - Office Staff
    - Sys Admin
  - Current user is a physician
    - He can access Doctor and Patient from main menu.
  - If current user is Nurse, he/she can access, Nurse and Patient from the main menu.
  - If current user is Office staff, he/she can access Office Admin.
  - If current user is Sys Admin, he/she can view system login information [who access the system and when it happens].



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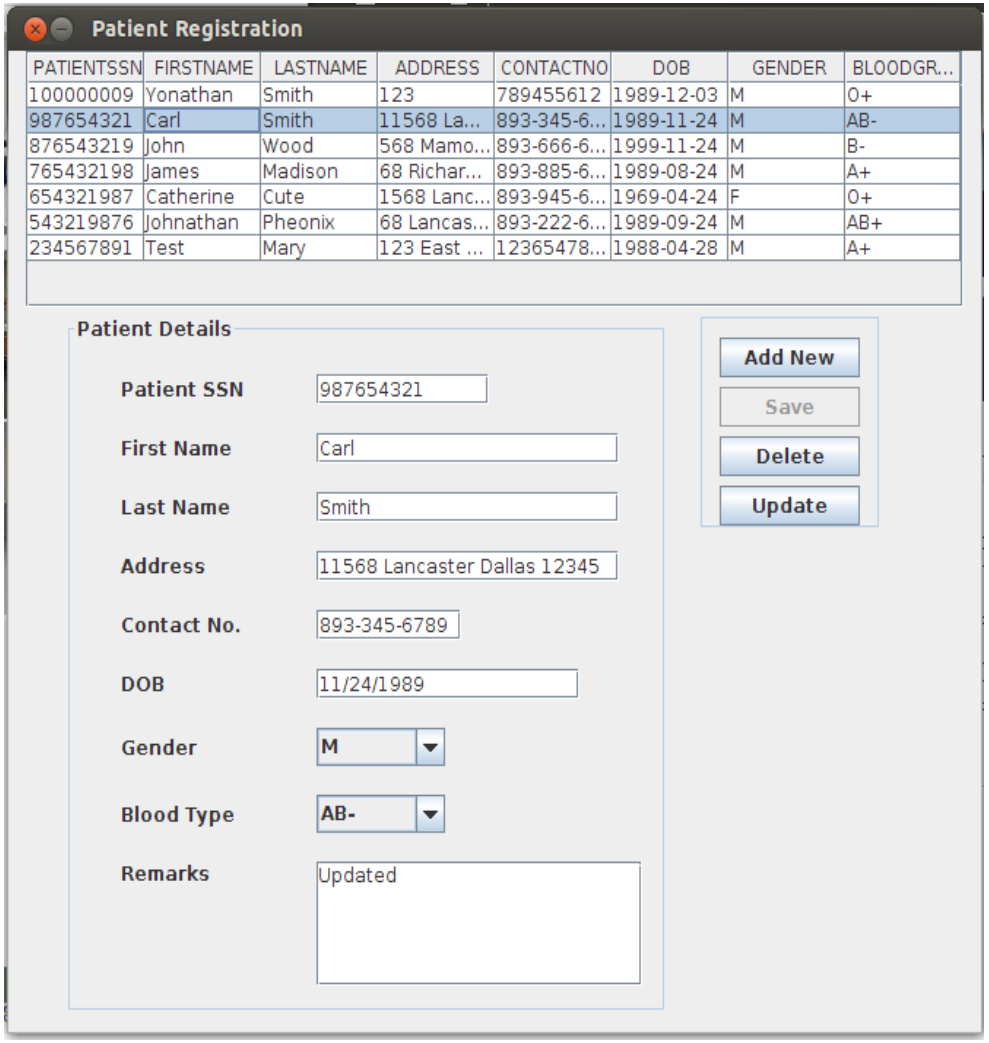
- Patient Registration Screen
  - This screen is for the medical office staff.
  - Medical Office Staff can
    - Register new patient
    - Modify the patient information
    - Delete for wrong information



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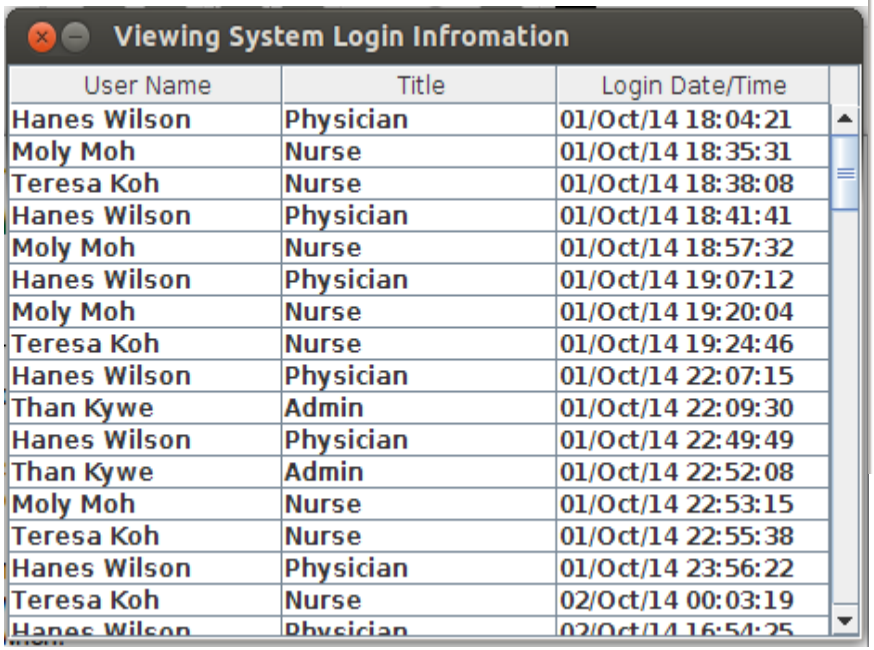
A Secure Comprehensive Health-care System: From Design to Implementation

- System Login Information Screen
  - This screen is for the application system administrator.
  - System Login Information is stored in LogFile inside the application system folder. It is encrypted.
  - System decrypt the login information for the sys admin to trace who accessed the system and when.



User Name	Title	Login Date/Time
Hanes Wilson	Physician	01/Oct/14 18:04:21
Moly Moh	Nurse	01/Oct/14 18:35:31
Teresa Koh	Nurse	01/Oct/14 18:38:08
Hanes Wilson	Physician	01/Oct/14 18:41:41
Moly Moh	Nurse	01/Oct/14 18:57:32
Hanes Wilson	Physician	01/Oct/14 19:07:12
Moly Moh	Nurse	01/Oct/14 19:20:04
Teresa Koh	Nurse	01/Oct/14 19:24:46
Hanes Wilson	Physician	01/Oct/14 22:07:15
Than Kywe	Admin	01/Oct/14 22:09:30
Hanes Wilson	Physician	01/Oct/14 22:49:49
Than Kywe	Admin	01/Oct/14 22:52:08
Moly Moh	Nurse	01/Oct/14 22:53:15
Teresa Koh	Nurse	01/Oct/14 22:55:38
Hanes Wilson	Physician	01/Oct/14 23:56:22
Teresa Koh	Nurse	02/Oct/14 00:03:19
Hanes Wilson	Physician	02/Oct/14 16:54:25

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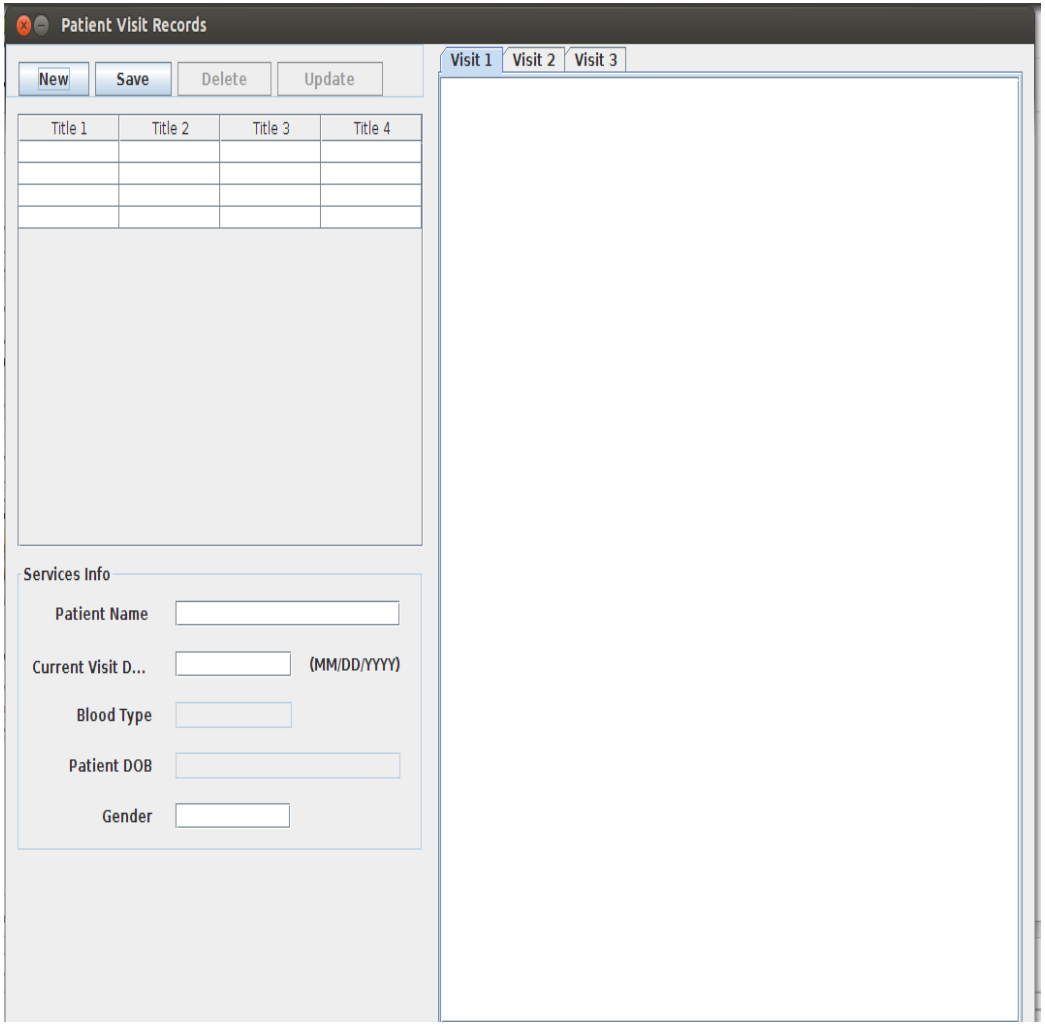
- Patient Visit Records
  - Under Construction
    - Nurse can add related treatment record for the individual patient. Nurse can view visit history of the patient but it is limited [means nurse cannot view detail treatment records of doctor].]
    - Doctor can also add his treatment records for individual patient. He/she can view the complete treatment records of the patients assigned to him/her.
    - Admin office staff can view the patient basic info,visit date/time. He/she can track patient waiting time and to assign the related health care provider to each patient.



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- Questions?

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