
Healthcare Information Services for Elderly People at Nursing Home

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- ✓ **The majority Elderly people need official health services, since**
 - ✓ **most of them are living on their own**
 - ✓ **while less live with an elderly person, who also has health problem.**
- ✓ **When they are living with younger peoples, most of these people feel a need for**
 - ✓ **some formal services and**
 - ✓ **specialized personnel to take care of the elderly people.**
- ✓ **The nursing homes, where home adaptations (environmental improvements) and assistive technology (AT) are provided,**
 - ✓ **represent an increasingly attractive mean of helping elderly people to maintain their independence and enhancing their quality of life.**

- ✓ **The main difference from a typical health home is that**
 - ✓ **nursing homes are using new technologies and applications**
 - in order to collect data from elderly people and
 - create an electronic file for each elderly people.
- ✓ **The basic idea of this paper is**
 - ✓ **to use a web application and a tablet PC or PDA**
 - in order to collect people's both personal information and clinical characteristics.
- ✓ **This application helps doctors**
 - ✓ **to manage the nursing home and**
 - ✓ **have a better view of the health status of each patient,**
 - ✓ **getting in parallel a report regarding the medical supplies needed at the nursing home.**

Healthcare Services and Public Health Information Systems

- ✓ **Healthcare stands for any service supply, equipment or prescription that people get in order to help them stay healthy.**
- ✓ **It includes**
 - ✓ **preventive care (like the yearly check-up),**
 - ✓ **care for illness or injury,**
 - ✓ **a hospital stay,**
 - ✓ **surgery,**
 - ✓ **visits to a doctor's office,**
 - ✓ **lab tests and X-rays, and**
 - ✓ **even prescription drugs.**
- ✓ **In this paper, though, “Healthcare” stands for those treatments that people get**
 - ✓ **from a trained and licensed Healthcare practitioner,**
 - **like their doctor or nurse practitioner.**

Healthcare Services and Public Health Information Systems

- ✓ **The Healthcare providers are entities that**
 - ✓ **provide services approved as medical and other health services in the Medicare law.**
- ✓ **The medical and other health services presented in detail in the Medicare law are listed below:**
 - ✓ **Physicians' services**
 - ✓ **Nursing services**
 - ✓ **Outpatient physical therapy services**
 - ✓ **Outpatient Healthcare services**
 - ✓ **Rural health clinic services**
 - ✓ **Federally-qualified Healthcare services**
 - ✓ **Home dialysis supplies and equipment, self-care home dialysis support services and institutional dialysis services and supplies**
 - ✓ **Certified nurse-midwife services**
 - ✓ **Qualified psychologist services**
 - ✓ **Durable medical equipment**
 - ✓ **Services of a certified register nurse anaesthetize**

- ✓ **The definition of Healthcare providers**
 - ✓ **is based on the activities performed**
 - ✓ **not the titles or labels**
 - **of the professionals or institutions.**
- ✓ **The Healthcare providers listed in the Medicare law include:**
 - ✓ **Nursing home**
 - ✓ **Hospitals**
 - ✓ **Critical access hospitals**
 - ✓ **Comprehensive outpatient Rehabilitation facilities**
 - ✓ **Home health agencies and**
 - ✓ **Hospice programs**

Nursing Home Services

- ✓ **A nursing home is an entity that provides**
 - ✓ **skilled nursing care and**
 - ✓ **rehabilitation services**
 - to people with illnesses, injuries or functional disabilities.

Some of the services a nursing home may provide include:

- ✓ **Therapies**: (Physical therapy, Occupational therapy, Speech therapy, Respiratory therapy)
- ✓ **Specialty Care**: (Alzheimer's treatment, Head trauma, Hematological conditions, Mental disease, Neurological diseases, Neuromuscular diseases, Orthopedic rehabilitation, Pain therapy, Pulmonary disease, Para/quadruplegic impairments, Stroke recovery)
- ✓ **Independent Living**: Independent living is for people who can take care of themselves and includes residing in one's own home or apartment.

Nursing Home Services

- ✓ **Assisted Living:** Assisted living provides apartment-style accommodations where services focus on providing assistance with daily living activities.
- ✓ **Intermediate Care:** Intermediate care is nursing home care for residents needing assistance with activities of daily living, but without significant nursing requirements.
- ✓ **Skilled Nursing:** Skilled nursing facilities are traditional nursing facilities that provide 24-hour medical nursing care for people with serious illnesses or disabilities.
- ✓ **Continuing Care Retirement Communities or Life Care Communities:** These communities are planned and operated to provide a continuum of care from independent living through skilled nursing.
- ✓ **Home Healthcare:** Home Healthcare is provided in an individual's home by outside providers and aims to keep the individual functioning at the highest possible level.

Nursing Home Services

- ✓ **It is impossible to choose a nursing facility without first determining the type of care the patient needs.**
- ✓ **This information not only assist elderly people in finding a home that provides the proper level of care,**
 - ✓ **but also it will be a major factor in determining the public aid the care recipient will be eligible for.**
- ✓ **The three most common types of care for elderly people are**
 - ✓ **personal care, often referred to as custodial,**
 - ✓ **intermediate, and**
 - ✓ **skilled nursing.**

Nursing Home Services

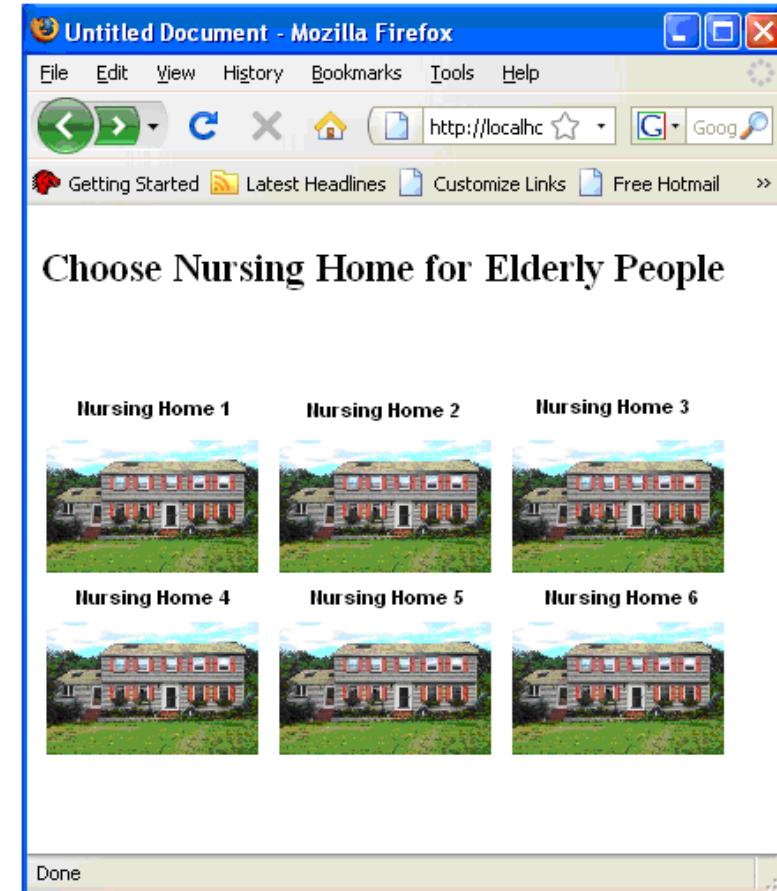
- ✓ **Custodial care means that residents need help with personal activities such as dressing, bathing, and eating.**
 - ✓ This type of care is essentially non-medical and is administered by aides rather than trained medical personnel.
 - ✓ Residents who need rehabilitative therapy and medications in addition to personal custodial care are candidates for intermediate care.
- ✓ **Intermediate care is delivered by licensed therapists and registered or licensed practical nurses.**
- ✓ **When the level of disability is such that the resident is not able to care for him or her and may even be bedridden, skilled nursing care is needed.**
 - ✓ It is administered on the orders of an attending physician by licensed medical personnel.

Personalized Healthcare at Nursing Home

- ✓ **Our approach is to use**
 - ✓ **a web application and**
 - ✓ **a tablet PC or PDA**
 - in order to collect peoples'
 - both personal information, clinical characteristics and
 - monitors the health status of the people in the nursing home.
- ✓ **It is important to create such a record for each elderly person**
 - ✓ in order to have a whole view of his clinical history.
- ✓ **The most important function of this application is that**
 - ✓ **it can provide a report with the needs of the nursing people**
 - in medical supplies including the health status of nursing people at the nursing home.

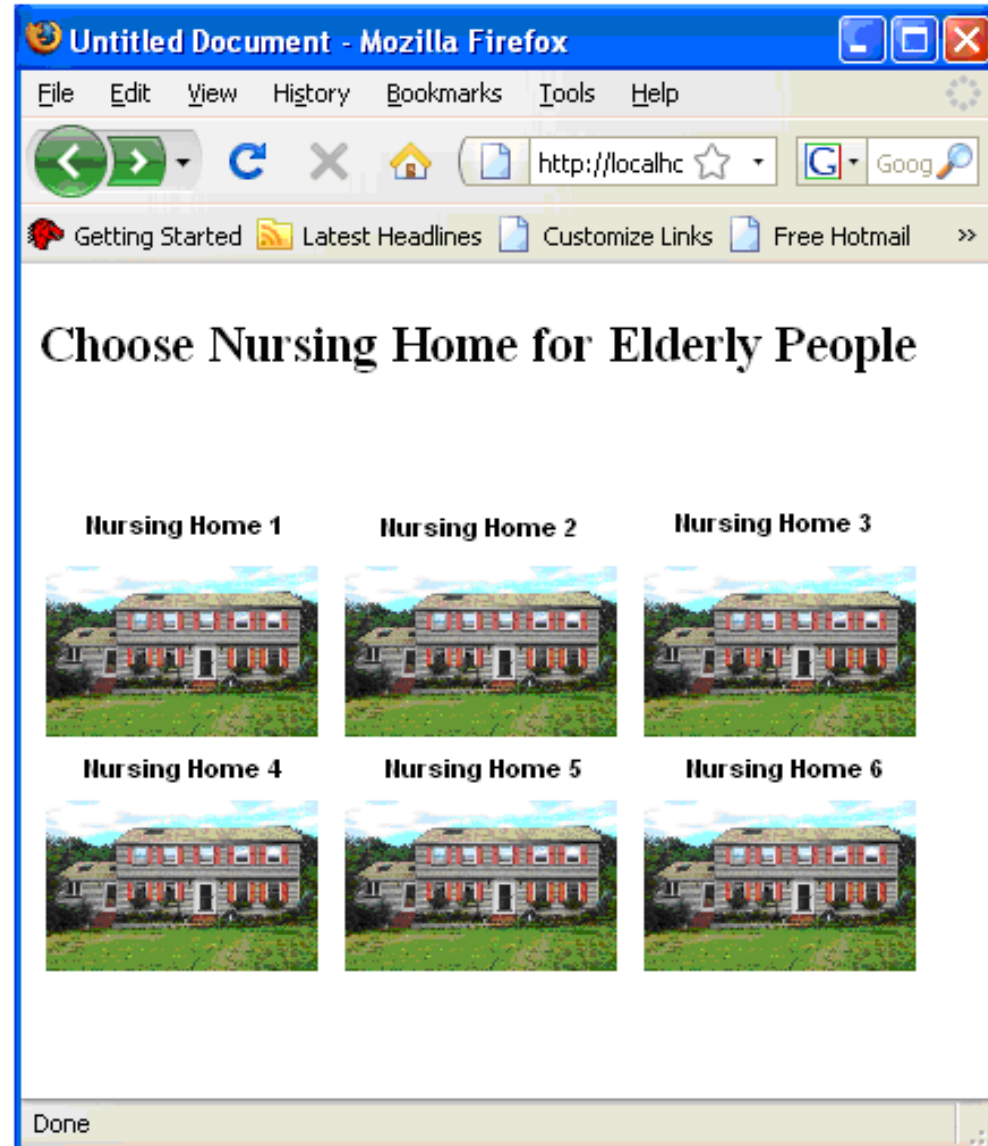
Personalized Healthcare at Nursing Home

- ✓ The main page where the doctors can select a nursing home among some cooperating with each other.
- ✓ We assume that we have a list of cooperating nursing homes
 - ✓ which are specialized in specific type of Healthcare services
- ✓ A web application that
 - ✓ can manage these nursing homes and
 - ✓ exchange the patients from one home to the other according to their needs.



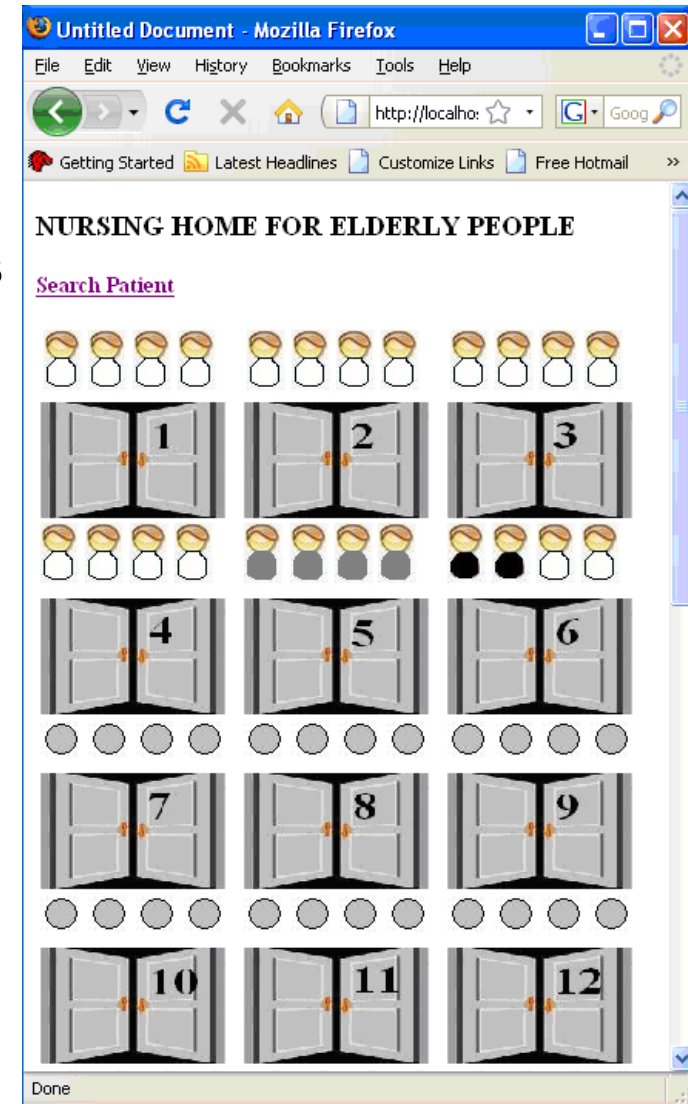
Personalized Healthcare at Nursing Home

- ✓ So, the doctors can select
 - ✓ a nursing home among some cooperating nursing homes and
 - ✓ afterwards they can start a number of actions for the management of the elderly people.



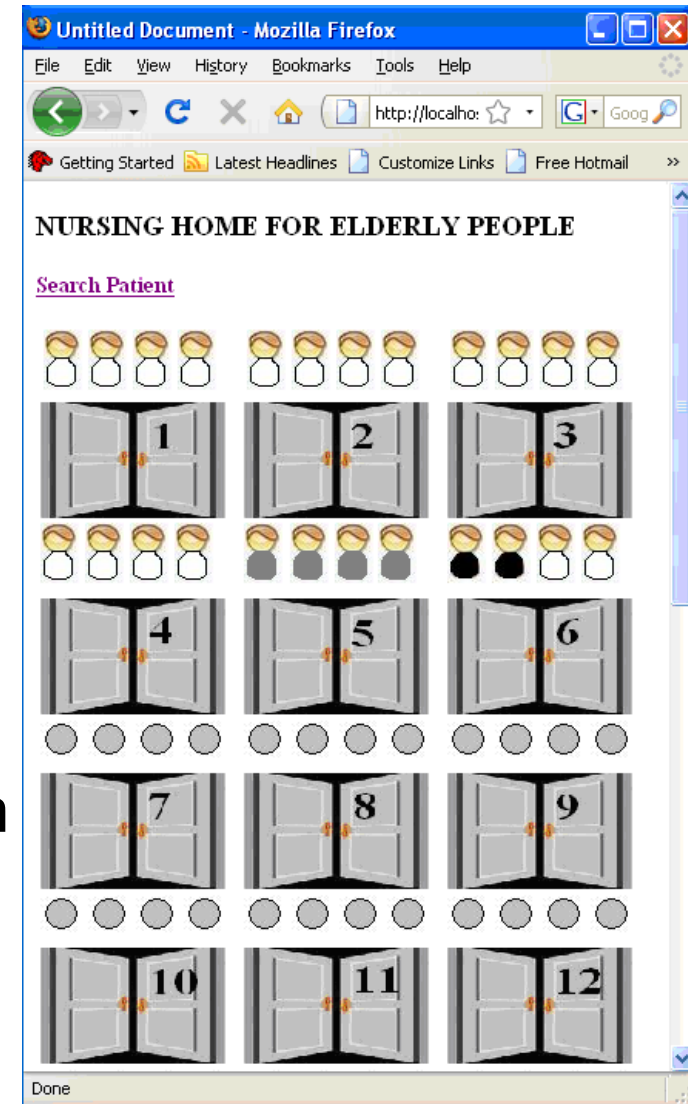
Personalized Healthcare at Nursing Home

- ✓ **The doctors**
 - ✓ can add an elderly person in a specific room and bed
 - ✓ by clicking on the circles above the doors
- ✓ **The circles above the doors represent the beds and**
- ✓ **the doors represent the rooms.**
- ✓ **Also they can view the status of an elderly person in a room by clicking on the door they prefer.**



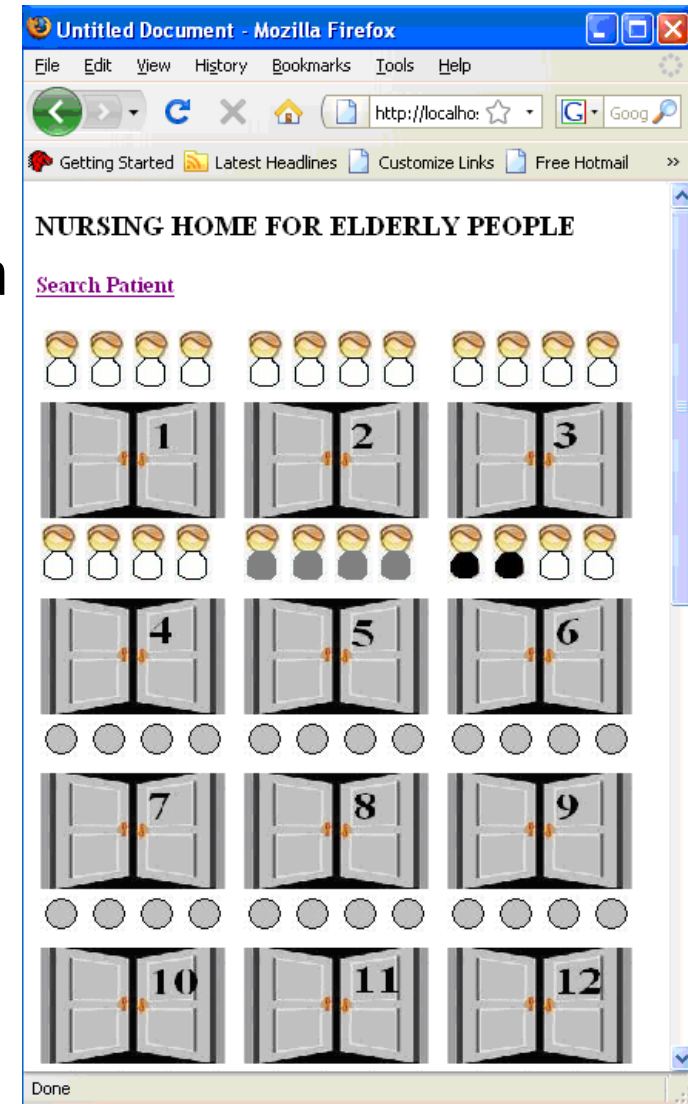
Personalized Healthcare at Nursing Home

- ✓ In case that the doctors want to add an elderly person at the home,
 - ✓ they have to press the relevant button, the cycles above the doors,
 - ✓ who are driven to another page with a form that contains the personal information of the people and their clinical characteristics.
- ✓ If they have already added some person in a bed,
 - ✓ they can add or change the clinical characteristics of that elderly person
 - ✓ and give some medical supplies.



Personalized Healthcare at Nursing Home

- ✓ When the doctors have entered all necessary information they need for that person,
 - ✓ they have to press the submit button
 - ✓ and that person is added in the home in the bed they have selected.
- ✓ As a result, if the elderly person has a good health condition
- ✓ the circle above the doors will be replaced by a white icon,
- ✓ if the elderly person has a problem
 - ✓ it will be replaced by a grey icon
- ✓ If the elderly person needs special care
 - ✓ it will be replaced by a black icon.



Personalized Healthcare at Nursing Home

- ✓ Prior their hospitalization, the doctor creates the personal record file of each patient.
- ✓ Doctors use a tablet PC or a PDA, and fill in a form designed to store and save this information in a database.
- ✓ The doctors can add the general information of the elderly people and information about their health status

The screenshot shows a Mozilla Firefox browser window with the address bar displaying 'http://localhost/html/form.php'. The page title is 'INSERT PEOPLE AT NURSING HOME'. Below the title, there is a text input field for 'Examination Date' with the value '06/07/2008'. The form is titled 'GENERAL INFORMATION:' and contains a table with various fields for patient data. The fields include Name, Residence, Occupation, Age, Sex (Male/Female), Current marital status, Where was he/she staying before entering this facility, Has he/she previously been a residence in this facility, What level of care is he/she currently receiving from the this facility, Which of these aids does he/she currently use, Does he/she have a difficulty on seeing, Is his/her sight partially, severely or completely impaired as defined on this card, Does he/she have a difficulty on hearing, Is his/her hearing partially, severely or completely impaired as defined on this card, Does he/she currently receive any assistance in bathing or showering, Does he/she currently receive any assistance in dressing, Does he/she currently receive any assistance in eating, Does he/she currently receive any assistance in transferring in and out of bed or a chair, Does he/she currently receive any assistance in walking, Which of these services were received by him/her inside or outside this facility, What was the primary source of payment of his/her care, Room (8), and Bed (1).

GENERAL INFORMATION:	
Name:	
Residence:	
Occupation:	
Age:	
Sex:	<input type="radio"/> Male <input type="radio"/> Female
Current marital status:	
Where was he/she staying before entering this facility:	
Has he/she previously been a residence in this facility:	<input type="radio"/> Yes <input type="radio"/> No
What level of care is he/she currently receiving from the this facility:	
Which of these aids does he/she currently use:	
Does he/she have a difficulty on seeing:	<input type="radio"/> Yes <input type="radio"/> No
Is his/her sight partially, severely or completely impaired as defined on this card:	
Does he/she have a difficulty on hearing:	<input type="radio"/> Yes <input type="radio"/> No
Is his/her hearing partially, severely or completely impaired as defined on this card:	
Does he/she currently receive any assistance in bathing or showering:	<input type="radio"/> Yes <input type="radio"/> No
Does he/she currently receive any assistance in dressing:	<input type="radio"/> Yes <input type="radio"/> No
Does he/she currently receive any assistance in eating:	<input type="radio"/> Yes <input type="radio"/> No
Does he/she currently receive any assistance in transferring in and out of bed or a chair:	<input type="radio"/> Yes <input type="radio"/> No
Does he/she currently receive any assistance in walking:	<input type="radio"/> Yes <input type="radio"/> No
Which of these services were received by him/her inside or outside this facility:	
What was the primary source of payment of his/her care:	
Room:	8
Bed:	1

Personalized Healthcare at Nursing Home

- ✓ In the option <add disease> the user can choose several diseases predefined from a list.
- ✓ According to the category <disease> that is has chosen
 - ✓ it appears the relative diseases from this category.
- ✓ Also according to the disease, relevant information regarding the necessary medication treatment appears.
- ✓ For example, if the doctors choose diseases of blood
 - ✓ it appears iron deficiency anemia and coagulation factor deficiency,
- ✓ if they choose iron deficiency anemia
 - ✓ it appears the medication legofer oral sol 800 mg.

CLINICAL INFORMATION :

Body Temperature:	
Blood Preasure:	
Symptoms:	
Send to hospital:	<input type="radio"/> Yes <input type="radio"/> No

+ Add Disease

Category	Disease	Medication	General Medication

+ Add Disease

Category	Disease	Medication	General Medication

+ Add Disease

Category	Disease	Medication	General Medication

+ Add Disease

Category	Disease	Medication	General Medication

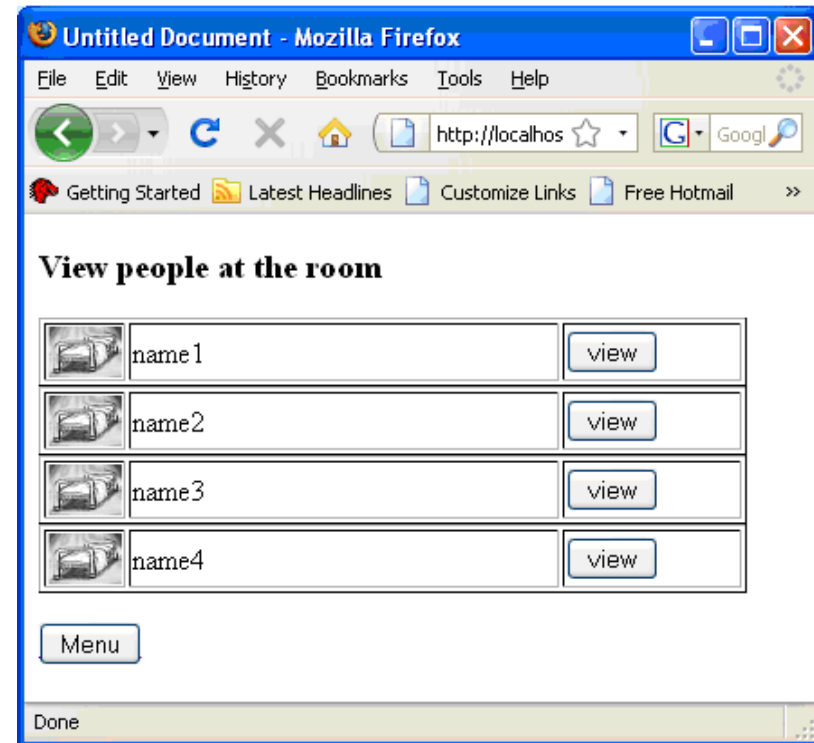
+ Add Comment

Submit Menu

Done

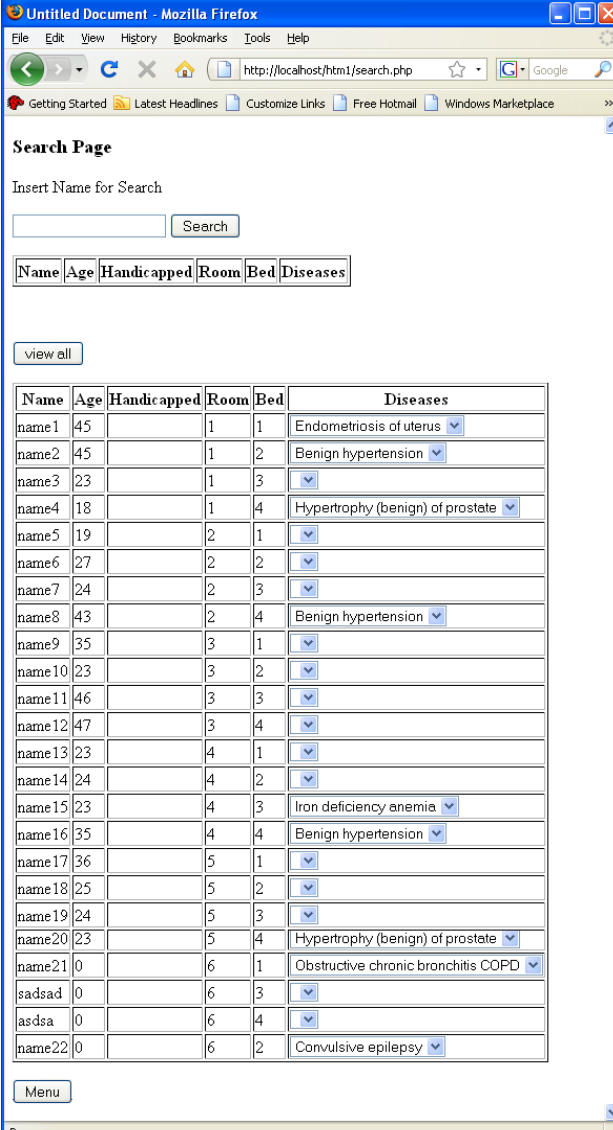
Personalized Healthcare at Nursing Home

- ✓ In case the doctors need a more specific view of the elderly people located in a room,
 - ✓ they can press into the doors and
 - ✓ get the name of them and
 - ✓ a photo that the doctors or a nurse have captured for them
- ✓ The doctors can see who are in this room and they can select the elderly person they want and view this person's details and photo.
- ✓ They can change the general information of the elderly person, for example the name the residence, and
- ✓ also they can view and change the clinical status of this person and
- ✓ add a disease and medical treatment and a description of the health status of the specific elderly person.



Personalized Healthcare at Nursing Home

- ✓ Doctors can also search for personalized information in respect to each elderly person's health status.
- ✓ The results provided are
 - ✓ the age,
 - ✓ the room,
 - ✓ the bed and
 - ✓ the special needs of the elderly people.
- ✓ Moreover the doctors can see the list of the diseases that the elderly people suffer from.
- ✓ The doctors can search for elderly people



Untitled Document - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost/html/search.php

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Search Page

Insert Name for Search

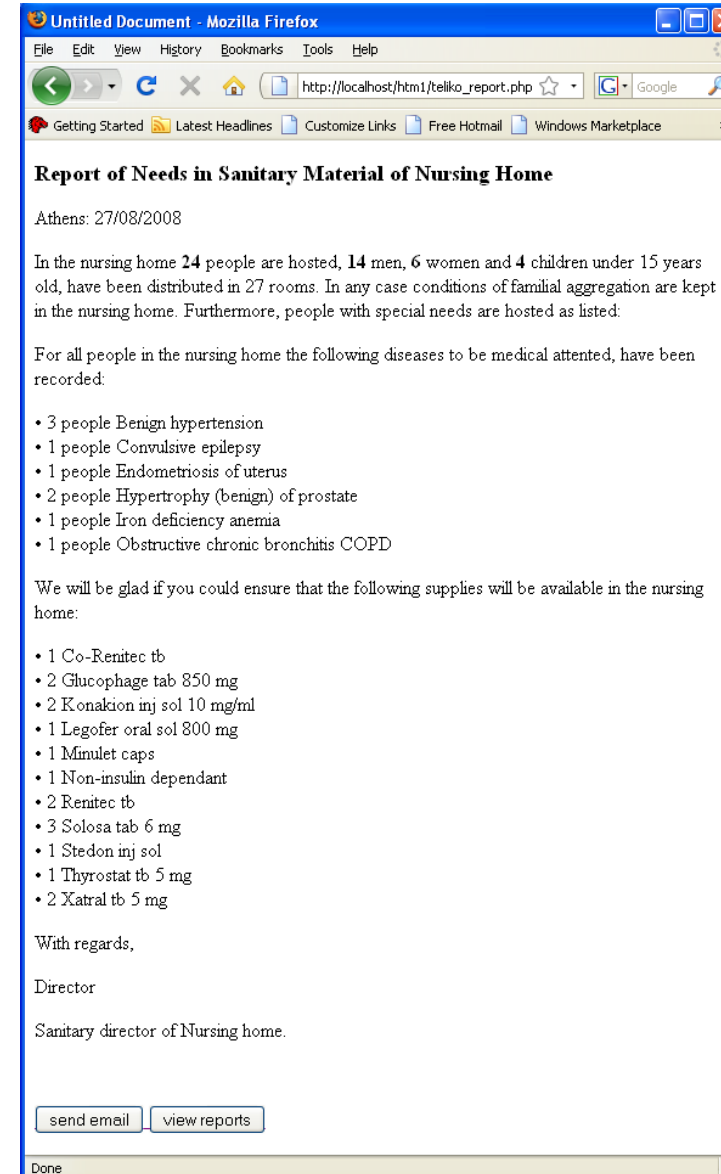
Name Age Handicapped Room Bed Diseases

Name	Age	Handicapped	Room	Bed	Diseases
name1	45		1	1	Endometriosis of uterus
name2	45		1	2	Benign hypertension
name3	23		1	3	
name4	18		1	4	Hypertrophy (benign) of prostate
name5	19		2	1	
name6	27		2	2	
name7	24		2	3	
name8	43		2	4	Benign hypertension
name9	35		3	1	
name10	23		3	2	
name11	46		3	3	
name12	47		3	4	
name13	23		4	1	
name14	24		4	2	
name15	23		4	3	Iron deficiency anemia
name16	35		4	4	Benign hypertension
name17	36		5	1	
name18	25		5	2	
name19	24		5	3	
name20	23		5	4	Hypertrophy (benign) of prostate
name21	0		6	1	Obstructive chronic bronchitis COPD
sadsad	0		6	3	
asdsa	0		6	4	
name22	0		6	2	Convulsive epilepsy

Done

Personalized Healthcare at Nursing Home

- ✓ The proposed application provides a report
 - ✓ with the supplies and
 - ✓ the equipment needed for the nursing home.
- ✓ Doctors and physicians can see
 - ✓ how many people are institutionalized in the nursing home, as well as
 - ✓ what kind of diseases have been recorded and have to be supervised by the doctors.
- ✓ The medical staff can see the total needs in supplies for the nursing home,
 - ✓ helping in this way in managerial issues.



Untitled Document - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost/html/teiko_report.php

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Report of Needs in Sanitary Material of Nursing Home

Athens: 27/08/2008

In the nursing home 24 people are hosted, 14 men, 6 women and 4 children under 15 years old, have been distributed in 27 rooms. In any case conditions of familial aggregation are kept in the nursing home. Furthermore, people with special needs are hosted as listed:

For all people in the nursing home the following diseases to be medical attended, have been recorded:

- 3 people Benign hypertension
- 1 people Convulsive epilepsy
- 1 people Endometriosis of uterus
- 2 people Hypertrophy (benign) of prostate
- 1 people Iron deficiency anemia
- 1 people Obstructive chronic bronchitis COPD

We will be glad if you could ensure that the following supplies will be available in the nursing home:

- 1 Co-Renitec tb
- 2 Glucophage tab 850 mg
- 2 Konakion inj sol 10 mg/ml
- 1 Legofer oral sol 800 mg
- 1 Minulet caps
- 1 Non-insulin dependant
- 2 Renitec tb
- 3 Solosa tab 6 mg
- 1 Stedon inj sol
- 1 Thyrostat tb 5 mg
- 2 Xatral tb 5 mg

With regards,

Director

Sanitary director of Nursing home.

send email view reports

Done

Conclusions

- ✓ **There is a growing demand for Healthcare services to be provided at nursing homes, particularly for the elderly and chronically ill people.**
- ✓ **The nursing homes and the trained personnel, who work there, provide Healthcare services that help elderly people to recover and improve their quality of life.**
- ✓ **The medical staff provides secure and supervised Healthcare services for them.**
- ✓ **New technologies make this feasible and affordable.**

Conclusions

- ✓ **In this paper, we introduce a web application that it can be used in nursing homes,**
 - ✓ **in order to manage the Healthcare services**
 - that are provided to the elderly people and
 - support different types of health services according to the elderly people demands.
- ✓ **The doctors can use through our application PDAs or tablet PCs,**
 - ✓ **in order to collect both personal and clinical information**
 - ✓ **creating in parallel a personalized file record for the hospitalized persons.**
- ✓ **The important part of the application is the monitoring tool of the health status of the people in the nursing homes**
 - ✓ **that helps doctors to have a better view of the health status at the nursing home.**

Conclusions

- ✓ **This application can give a total report with the needs of the nursing home**
 - ✓ in respect to medical supplies as well as
 - ✓ regarding the demographics and population status of the nursing home.
- ✓ **Last but not least is the exchange of information among different nursing homes and**
 - ✓ **the use of this application**
 - in order to exchange and process elderly people's clinical data from one home to the other.
- ✓ **As far as future considerations are concerned,**
 - ✓ **the expansion of the use of applications and internet technologies for personalized Healthcare services will help elderly people**
 - to get a better treatment and a better life.