



OCTOBER 23, 2019

SWE 312: Project

Haitham Alsaeed (Phase
leader)

Hashim Alghamdi

Salman Alghamdi

Salem Bamukhier



User Analysis:

<i>User Characteristics</i>	<i>Doctor</i>	<i>Nurse</i>	<i>Receptionist</i>	<i>Physiotherapist</i>	<i>System Admin</i>
Age	25-65	21-65	20-65	25-65	21-65
Gender	Male-Female	Male-Female	Male-Female	Male-Female	Male-Female
Physical Limitations	No	No	No	No	No
Educational Background	BA to PHD	Diploma to BA	Diploma to BA	BA to PHD	Diploma to BA
Computer/IT use	Beginner-Intermediate	Beginner-Intermediate	Beginner-Expert	Beginner-Intermediate	Expert
Medical Knowledge	Extensive	Extensive	Low to Modest	Extensive	Low

Task Analysis:

Task 1: Manage Patient Medical Records

Main Characteristics Questions	Answers
Does the task vary from one occasion to the next?	Yes
How frequently is the task carried out?	Very often
What kinds of skills or knowledge are needed?	Basic computer literacy and strong medical knowledge
Will the work be done alone or with others	Alone or with others

Task 2: Manage Patient Personal Records

Main Characteristics Questions	Answers
Does the task vary from one occasion to the next?	No
How frequently is the task carried out?	Very often
What kinds of skills or knowledge are needed?	Basic computer literacy

Will the work be done alone or with others	Alone
--	-------

Task 3: Manage Patient Bills

Main Characteristics Questions	Answers
Does the task vary from one occasion to the next?	Yes
How frequently is the task carried out?	Very often
What kinds of skills or knowledge are needed?	Basic computer literacy
Will the work be done alone or with others	Alone

Task 4: Managing employees' records

Main Characteristics Questions	Answers
Does the task vary from one occasion to the next?	Yes
How frequently is the task carried out?	Very often
What kinds of skills or knowledge are needed?	Basic computer literacy
Will the work be done alone or with others	Alone

Use Case Documents:

Name of use case	Store medical record
Actor(s):	<ul style="list-style-type: none"> - Doctor - Physiotherapist - Nurse
Description of use case	Store the patient's medical cases, assigned prescriptions and medical tests results of the patient in their file for future use.
Successful Completion Steps	1- Choose type of medical record 2- Update medical record 3- Store medical record
Alternative Steps	1- Choose type of medical record 2- Choose medical record from menu 3- Store medical record

Pre-condition:	Doctor is logged in to the system, Existing patient file, Recorded medical record, Possession of medical record
Post-Condition:	Updated patient medical record, Future access of medical record for the doctor
Assumptions:	The possession of medical records is physical.

Name of use case	Suggest medical test
Actor(s):	<ul style="list-style-type: none"> - Doctor - Physiotherapist
Description of use case	The doctor suggests needed medical tests to the patient and then stores them in the patient's file.
Successful Completion Steps	1- Select suggest medical test 2- Select medical test 3- Add medical test to patient file
Alternative Steps	1- Select suggest medical test 2- Select medical test 3- Add medical test to patient file
Pre-condition:	Doctor is logged in to the system, Existing patient file, Medical record that indicates a test could be suggested (through diagnosis)
Post-Condition:	Medical test suggestion is added to the patient file
Assumptions:	Available facilities for medical tests, Available technicians to run test labs, Medical tests are suggested by the doctor upon visiting them after patient diagnosis.

Name of use case	Add appointment
Actor(s):	Receptionist
Description of use case	The receptionist offers available appointments to the patient then the patient chooses a suitable appointment and it's added to the patient's file and the staff record.
Successful Completion Steps	1- Access appointments schedule 2- Select chosen appointment 3- Search for patient's name in the database

	4- Access patient's file 5- Add appointment to patient's file
Alternative Steps	1- Access appointments schedule 2- Select chosen appointment 3- Enter patient's file number 4- Access patient's file 5- Add appointment to patient's file
Pre-condition:	Existing patient file
Post-Condition:	Added appointment to patient file, Added appointment to staff record.
Assumptions:	Follow-up appointments are treated the same way as other appointments ,Database of patient's files sorted by name

Name of use case	Cancel appointment
Actor(s):	Receptionist
Description of use case	The patient asks the receptionist to cancel appointment then the receptionist access's patient's appointment and cancel it and it's removed from the patient's file and staff records.
Successful Completion Steps	1- Search for patient's name in the database 2- Access patient's file 3- Access patient's appointments 4- Cancel appointment
Alternative Steps	1- Enter patient's file number 2- Access patient's file 3- Access patient's appointments 4- Cancel appointment
Pre-condition:	Existing patient file, Existing appointment
Post-Condition:	Appointment is removed from the patient's file, Appointment is removed from staff record.
Assumptions:	Follow-up appointments are treated the same way as other appointments ,Database of patient's files sorted by name

Name of use case	Verify insurance claim
------------------	------------------------

Actor(s):	Receptionist
Description of use case	The receptionist receives insurance claim from patient then checks claim information in the system.
Successful Completion Steps	1- Select medical insurance 2- Select claims 3- Select verify claim 4- Enter claim information 5- Match information with clinic's insurance policies
Alternative Steps	1- Select medical insurance 2- Select insurance policies 3- Match claim information with list of insurance policies
Pre-condition:	Existing patient file, Existing insurance claim
Post-Condition:	Claim is set for preparation
Assumptions:	Existing database of insurance policies accepted by the clinic with comparable data for verification, The claim information can be matched to insurance policies physically.

Name of use case	Prepare patient claims
Actor(s):	Receptionist
Description of use case	The receptionist prepares patient claims based on medical codes for services provided.
Successful Completion Steps	1- Select medical insurance 2- Select claims 3- Select prepare claims 4- Fill claim information 5- Generate claim based on medical codes
Alternative Steps	1- Log in to the system 2- Select medical insurance 3- Select medical codes 4- Match insurance claim with medical code
Pre-condition:	Existing insurance claim
Post-Condition:	Claim submission to insurance agent
Assumptions:	Existing database of medical codes, The claim information can

	be matched to medical codes physically
--	--

Name of use case	Submit claim to insurance agents
Actor(s):	Receptionist
Description of use case	The receptionist submits the verified claims to the concerned insurance claims.
Successful Completion Steps	1- Select medical insurance 2- Select Submit Claims 3- Choose the prepared claims 4- Choose the concerned insurance agents 5- Submit the claim
Alternative Steps	1- Enter patient's file number 2- Access patient's file 3- Access Current Claims 4- Choose a claim 5- Choose the prepared claims 6- Choose the concerned insurance agents 7- Submit the claim.
Pre-condition:	Existing patient file, Existing prepared insurance claim
Post-Condition:	The insurance agent decides whether to pay for the claim or not.
Assumptions:	The subscribed insurance agent is part of the clinic's supported agents.

Name of use case	Calculate total bill
Actor(s):	Receptionist
Description of use case	The receptionist calculates the total cost of the services.
Successful Completion Steps	1- Search for patient's name in the database. 2- Access patient file 3- Choose the required services by the patient 4- Calculate the total cost of provided services.
Alternative Steps	1- Enter patient's file number 2- Access patient's file 3- Choose the required services by the patient

	4- Calculate the total cost of provided services.
Pre-condition:	Existing patient file, Existing request.
Post-Condition:	The receptionist checks for insurance.
Assumptions:	Database containing the patient's file.

Name of use case	Create patient file
Actor(s):	Receptionist
Description of use case	The receptionist gives the patient a form to fill, then the receptionist enter the records to the system.
Successful Completion Steps	1- Enter the patient's personal records as a form to the database.
Alternative Steps	None.
Pre-condition:	1- Receptionist Logged in 2- Patient file does not exist
Post-Condition:	1- The patient can make appointment. 2- The patient can request any type of medical tests
Assumptions:	None

Name of use case	View medical records
Actor(s):	<ul style="list-style-type: none"> - Doctor - Physiotherapist - Nurse
Description of use case	The doctor or nurse view the medical record of the patient.
Successful Completion Steps	1- Select view medical records
Alternative Steps	None.

Pre-condition:	Doctor or nurse are logged in to the system and there is an existing patient file
Post-Condition:	The medical staffer acquires information about patient.
Assumptions:	None.

Name of use case	Print bill
Actor(s):	Receptionist
Description of use case	The receptionist prints the bill which details the cost of the provided services and any deduction if applicable.
Successful Completion Steps	1- Search for patient's name in the database. 2- Access patient's file 3- Choose the required services by the patient 4- Print Bill.
Alternative Steps	1- Enter patient's file number 2- Access patient's file 3- Choose the required services by the patient. 4- Print Bill.
Pre-condition:	Existing patient file, Existing prepared insurance claim, The bill has been paid
Post-Condition:	The patient acquires the bill.
Assumptions:	Unified bill format whether an insurance deduction is applied or not .

Name of use case	Calculate patient balance after deduction
Actor(s):	Receptionist
Description of use case	The receptionist applies insurance deduction on cost and calculates the patient's balance.
Successful Completion Steps	1- Search for the patient's name in the database. 2- Access patient file

	3- Choose the required services by the patient 4- Apply insurance deduction 5- Calculate patient balance
Alternative Steps	1- Enter patient's file number 2- Access patient's file 3- Choose the required services by the patient. 4- Apply insurance deduction 5- Calculate patient balance
Pre-condition:	Existing patient file, Existing prepared insurance claim, Total cost has been calculated
Post-Condition:	The patient pays the bill
Assumptions:	Unified bill format whether an insurance deduction is applied or not.

Name of use case	Delete patient file
Actor(s):	Receptionist
Description of use case	The receptionist deletes the patient file upon his request , or after the patient death.
Successful Completion Steps	1- Delete the patient's information from the database.
Alternative Steps	None.
Pre-condition:	1- Receptionist Logged in 2- Patient file does exist.
Post-Condition:	1- The patient can not make appointment. 2- The patient can not request any type of medical tests
Assumptions:	None.

Name of use case	Edit patient's personal record
Actor(s):	Receptionist

Description of use case	The patient ask the receptionist to add,then the receptionist add/update the record .
Successful Completion Steps	1- Add personal record to the patient's information in the database.
Alternative Steps	None.
Pre-condition:	1- Receptionist Logged in 2- Patient file does exist.
Post-Condition:	1- The patient is updated.
Assumptions:	None.

Name of use case	Check availability of staff
Actor(s):	Receptionist
Description of use case	The receptionist check staff records for their availability on specific date.
Successful Completion Steps	1- Search for a staff member name in the database 2- Check staff's schedule. 3- Inform patient with the status of availability of staff.
Alternative Steps	1- Select staff from list 2- Check staff's schedule. 3- Inform patient with the status of availability of staff.
Pre-condition:	The patient asked for an appointment with staff
Post-Condition:	The patient has been informed with the status of availability of staff.
Assumptions:	The staff is an active employee in the clinic.

Name of use case	Add employee
Actor(s):	- System admin

Description of use case	Add new employee's information to the system.
Successful Completion Steps	1- Select manage staff 2- Select add new employee 3- Store employee's information 4- Add employee
Alternative Steps	None.
Pre-condition:	System admin is logged in to the system.
Post-Condition:	New employee is added to the system.
Assumptions:	None.

Name of use case	Remove employee
Actor(s):	- System admin
Description of use case	Remove employee from the system.
Successful Completion Steps	1- Select manage staff 2- Select remove employee 3- Remove employee
Alternative Steps	None.
Pre-condition:	System admin is logged in to the system.
Post-Condition:	Employee is removed from the system.
Assumptions:	None.

Name of use case	Edit employee
Actor(s):	- System admin

Description of use case	Edit employee's information in the system.
Successful Completion Steps	1- Select manage staff 2- Select edit employees 3- Edit employee's information
Alternative Steps	None.
Pre-condition:	System admin is logged in to the system.
Post-Condition:	Employee's information is edited in the system.
Assumptions:	None.

Name of use case	Back-up records
Actor(s):	- System admin
Description of use case	Back-up all records in the databases.
Successful Completion Steps	1- Select the record(s) to be backed-up. 2- Select backup now.
Alternative Steps	None.
Pre-condition:	System admin is logged in to the system.
Post-Condition:	All records in the databases have been backed-up.
Assumptions:	Availability of external backup drives.

Use Case Model:

