



USER MANUAL

EXPERT SYSTEM FOR THE DIAGNOSIS OF CARDIAC
DISEASES

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USER MANUAL

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1. GENERAL INFORMATION

1.1 System Overview.

The Expert System for the diagnosis of cardiac diseases is a system that helps doctors make the right diagnosis for their patients. The system contains a wide variety of cardiac diseases along with their respective symptoms; therefore, doctors can introduce the symptoms of their patients and the system will find the 100% accurate diagnosis if the symptoms match those from the diseases stored in the system.

Furthermore, the doctor will be able to download and upload the information of the patients he/she is working with in a csv file.

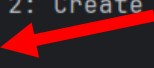
2. SYSTEM FEATURES

2.1 Open an existing CSV.

2.1.1 Select option “Open CSV”.

To select the option, type a 1.

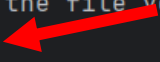
```
-----WELCOME-----  
Would you like to open a CSV with the patients or create a new one?:  
    1: Open CSV  
    2: Create a new one  
1
```



2.1.2 Introduce the name of the CSV you want to open.

If the file is found, it will load the data and print the next menu.

```
-----  
Would you like to open a CSV with the patients or create a new one?:  
    1: Open CSV  
    2: Create a new one  
1  
Enter the name of the file you want to open:  
name of csv file
```



2.1.3 Invalid name of the CSV.

If the file the user wants to open is not found it will display an error and ask again.

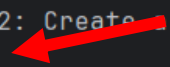
```
Enter the name of the file you want to open:  
notFoundFile  
Error: java.io.FileNotFoundException: notFoundFile.csv (El sistema no puede encontrar el archivo especificado)  
The file doesn't exist  
-----WELCOME-----  
Would you like to open a CSV with the patients or create a new one?:  
    1: Open CSV  
    2: Create a new one
```

2.2 Create a new CSV.

2.2.1 Select option “Open a new one”.

To select the option, type a 2.

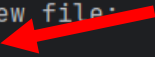
```
-----  
Would you like to open a CSV with the patients or create a new one?:  
    1: Open CSV  
    2: Create a new one  
2
```



2.2.2 Introduce the name of the CSV you want to create.

The file will be created internally and will be stored after exiting. The next menu will be displayed.

```
Would you like to open a CSV with the patients or create a new one?:  
  1: Open CSV  
  2: Create a new one  
2  
Enter the name of the new file:  
name of the new file
```

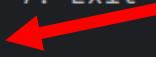


2.3 Add a patient.

2.3.1 Select option “Add patient”.

To select the option, type a 1.

```
-----MENU-----  
  1: Add patient  
  2: Modify patient  
  3: Make diagnosis  
  4: Show all patients  
  7: Exit  
1
```



2.3.2 Introduce all the information needed.

2.3.2.1 Name, Surname and age.

```
Introduce the name of the patient:  
example  
Introduce the lastname of the patient:  
example  
Introduce the age of the patient:  
50
```


2.3.2.2 Symptoms

After introducing the previous information, an enumerated list of symptoms will be shown. To introduce the symptoms of the patient, introduce the number corresponding to each of the symptoms, separated by spaces as shown below.

```

138.CREPITATIONS
139.AURICULAR_FIBRILATION
140.HIGH_DIASTOLIC_R1
141.ANGINA
142.PULMONAR_EDEMA
143.R2_R3_EXCISION
144.APICAL_REMIT
145.QUINCKE_SIGN
146.BISFERENS_PULSE
147.DYASTOLIC_MURMUR_LEFT_ESTERNAL_SIDE
148.R3
149.R4
150.SYSTOLIC_REMIT
151.R2_SPLITTING
152.DILATED_VEINS_CALVES_ANKLES
153.EDEMA_CALVES_ANKLES
154.HEAVY_LEGS_NIGHT_HOT_WEATHER
155.LEG_PAIN_STANDING_LONG_WALKS
156.MENSTRUAL_PAIN
Enter the numbers of selected symptoms (separated by spaces): 1 50 146 80 23

```



2.4 Modify a patient's information.

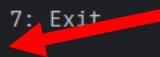
2.4.1 Select option "Modify patient".

To select the option, type a 2.

```

-----MENU-----
1: Add patient
2: Modify patient
3: Make diagnosis
4: Show all patients
7: Exit
2

```



2.4.2 Input the id of the patient.

A list with all the existing patients will be shown, introduce the ID corresponding to the patient of interest as shown in the example below.

```

List of patients in this hospital:
0: example example
1: example2 example2
Please, choose the patient you want to work with:
0

```

2.4.3 Successful selection.

The information of the patient selected will be shown. Afterwards, the program will ask you if you want to modify the patient's name, surname, age, and symptoms. To modify any of these, answer "y" or "Y" to the corresponding question. In case you do not want to modify an attribute, answer "n" or "N" to the corresponding question.

Note: in this case we will only change the name of the patient.

```

Patient{name='example', surname='example', age=50, disease=null, symptoms=[CHEST_PAIN, DECREASED_SYSTOLIC_FRACTION, QUINCKE_SIGN, PAIN_GENERAL, HYPOTENSION]}
Do you want to modify name?: [y/n]
y
Enter new name:
newName
Do you want to modify surname?: [y/n]
n
Do you want to modify age?: [y/n]
n
Current symptoms
[CHEST_PAIN, DECREASED_SYSTOLIC_FRACTION, QUINCKE_SIGN, PAIN_GENERAL, HYPOTENSION]
Do you want to modify symptoms?: [y/n]
n

```

2.4.4 Invalid ID.

In case the patient ID does not correspond to any patient, the program will show “No patient found with that ID.” and it will ask you to enter a valid ID.

```

List of patients in this hospital:
0: example example
1: example2 example2
Please, choose the patient you want to work with:
3
No patient found with that ID.
Please introduce a valid ID:

```

2.5 Request diagnosis for a patient.

2.5.1 Select option “Make diagnosis”.

To select the option, type a 3.

```

-----MENU-----
1: Add patient
2: Modify patient
3: Make diagnosis
4: Show all patients
7: Exit
3

```

2.5.2 Input the id of the patient.

A list with all the existing patients will be shown, introduce the ID corresponding to the patient of interest as shown in the example below.

```

List of patients in this hospital:
0: example example
1: example2 example2
Please, choose the patient you want to work with:
0

```

2.5.3 Valid ID: Disease found.

If the patient has all the necessary symptoms to be matched to a disease in the system, the disease will be displayed along with a summary.

```
Patient diagnosis: DESCENDING_AORTIC_ANEURYSM
A descending thoracic aortic aneurysm is a bulging, weakened area in the wall of the aorta,
in the part that runs downward through the chest (thorax).
```

2.5.4 Valid ID: No disease found.

If the patient doesn't have all the symptoms to match a disease, a message will appear.

```
Sorry but it seems like there's no matches for a cardiac disease in our system, so we can't 100% diagnose you with any disease.
Please consult with a different specialist for further testing.
```

2.5.5 Invalid ID.

In case the patient ID does not correspond to any patient, the program will show "No patient found with that ID." and it will ask you to enter a valid ID.

```
List of patients in this hospital:
0: example example
1: example2 example2
Please, choose the patient you want to work with:
3
No patient found with that ID.
Please introduce a valid ID:
```

2.6 Show patients.

2.6.1 Select option "Show all patients".

To select the option, type a 4.

```
-----MENU-----
1: Add patient
2: Modify patient
3: Make diagnosis
4: Show all patients
7: Exit
4
```

After this, a list of the patients with their information will be shown.

```
Patient{name='example', surname='example', age=50, disease=null, symptoms=[CHEST_PAIN, DECREASED_SYSTOLIC_FRACTION, QUINCKE_SIGN, PAIN_GENERAL, HYPOTENSION]}
Patient{name='example2', surname='example2', age=80, disease=null, symptoms=[CHEST_PAIN, SCAPULA_PAIN, LOWER_BACK_PAIN]}
```


2.7 Exit the program.

```
-----MENU-----  
1: Add patient  
2: Modify patient  
3: Make diagnosis  
4: Show all patients  
7: Exit  
7  
File updated successfully  
Closing app...
```