

Report

-I assumed that a mechanic is available 24 hours each day until a customer reserves a one-time slot and mechanic is not available at a certain time only if a customer already reserved this time, otherwise assume the mechanic is available and each appointment takes 30 minutes

-Appointments are written as 24 hour configuration

- created Customers.txt

Which followed the format:

- Name
- ID
- Age
- Hour
- minute

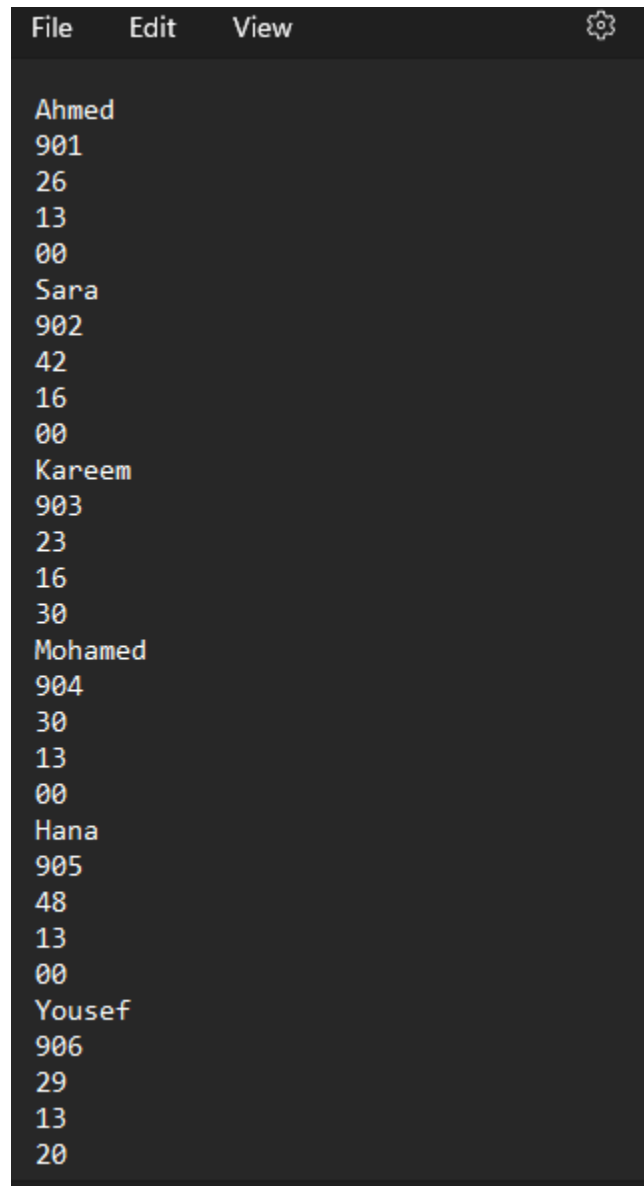
-created Mechanics.txt

Which followed the format:

- Name
- ID
- Age

- The program reads the Customers.txt file and fills an array (customers) with the information in it. Then it prints out the information on the screen
- Then it reads the Mechanics.txt file and fills an array (mechanics) with the information in it. Then prints out the information on the screen
- Then the program goes about to assign the first customer to the first mechanic and the second customer to the second mechanic and so on.
- The appointment of the Customer object is added into array (booked) inside of the Mechanic object and the member variable MechanicID in the customer object is assigned to the value of the ID in the Mechanic object
- I used bubble sort to sort the array customers ascendingly according to their appointments
- Pushed the element in the sorted array into a queue
- Used the member variable MechanicID inside customer objects to determine which mechanic has the customer reserved an appointment with.
- Output the name of the customer and the mechanic and the time of the appointment

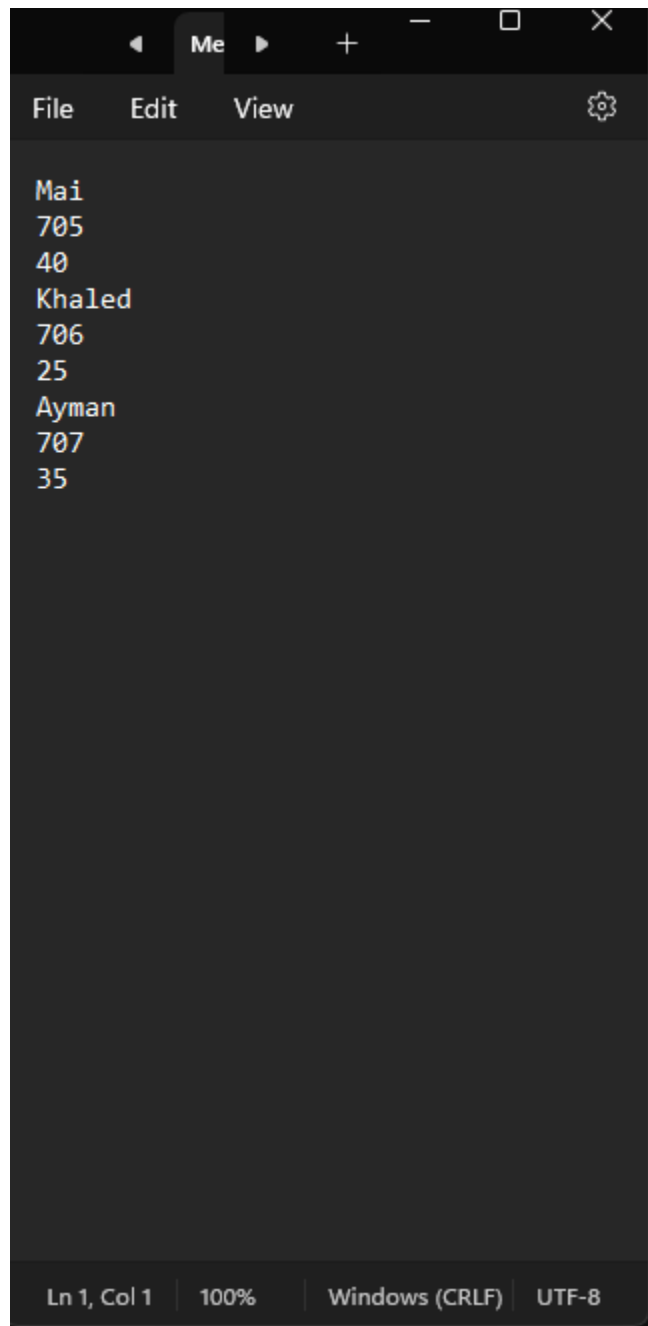
Customers.txt:



A screenshot of a text editor window with a dark background. The window has a title bar with 'File', 'Edit', and 'View' menus, and a gear icon in the top right corner. The text content is as follows:

Name	ID	Age	Gender
Ahmed	901	26	13
	00		
Sara	902	42	16
	00		
Kareem	903	23	16
	30		
Mohamed	904	30	13
	00		
Hana	905	48	13
	00		
Yousef	906	29	13
	20		

Mechanics.txt:



A screenshot of a text editor window with a dark theme. The window has a title bar with standard OS controls (back, forward, zoom in, zoom out, maximize, close) and a tab labeled 'Me'. Below the title bar is a menu bar with 'File', 'Edit', 'View', and a settings icon. The main text area contains the following text:

```
Mai  
705  
40  
Khaled  
706  
25  
Ayman  
707  
35
```

At the bottom of the window is a status bar with the following information: 'Ln 1, Col 1', '100%', 'Windows (CRLF)', and 'UTF-8'.

Output:

```
Yahya@DESKTOP-HHL30LE MINGW64 ~/Desktop/code/cpp/assignment3 (main)
$ ./main.exe
The customers are:
Name: Ahmed
ID: 901
Age: 26
Name: Sara
ID: 902
Age: 42
Name: Kareem
ID: 903
Age: 23
Name: Mohamed
ID: 904
Age: 30
Name: Hana
ID: 905
Age: 48
Name: Yousef
ID: 906
Age: 29
The mechanics are:
Name: Mai
ID: 705
Age: 40
Name: Khaled
ID: 706
Age: 25
Name: Ayman
ID: 707
Age: 35
The customer Ahmed has an appointment at 13:00 with the mechanic Mai
The customer Mohamed has an appointment at 13:00 with the mechanic Khaled
The customer Hana has an appointment at 13:00 with the mechanic Ayman
The appointment of the customer Yousef was cancelled because no mechanic is available at 13:20
The customer Sara has an appointment at 16:00 with the mechanic Khaled
The customer Kareem has an appointment at 16:30 with the mechanic Ayman
```

Input:

- There are 6 customers with 6 appointments:
Ahmed at 13:00, Sara at 16:00, Kareem at 16:30, Mohamed at 13:00, Hana at 13:00, Yousef at 13:20
- There are three Mechanics:
Mai, Khalid, and Ayman
- After the program takes input from customers.txt and mechanics.txt, it outputs their information
- The program starts assigning each customer to the corresponding mechanic sequentially
Ahmed is assigned to Mai at 13:00
Sara is assigned to Khalid at 16:00
Kareem was assigned to Ayman at 16:30
Mohamed was assigned to Khalid at 13:00 (because Mai isn't available at 13:00 and Khalid is the next in the array)
Hana was assigned to Ayman at 13:00
Yousef's appointment was canceled because there were no available spaces for him and appointments take half an hour

- the program uses bubble sort to sort the customer array and then pushes the array into queues
- Finally, the information about the customers and the mechanics and the appointment is outputted