

COEN 10

Lab 7

Lab 7 – Scheduling System

- ❖ Your program will deal with a dentist appointment system.
- ❖ The dentist is available each day from 1pm to 7pm for 1-hour appointments.
- ❖ Your system creates appointments for one day only.
- ❖ The system reserves the earliest appointment available.

Lab 7 – Scheduling System

❖ Interface

◆ The user can use the system to

- Schedule (1) an appointment
- Cancel (2) an appointment
- List (3) the appointments
- Quit (any other number)

Lab 7 – Scheduling System

❖ Interface

◆ Create an appointment – enter name

- If there is a free hour
 - The user is asked for his/her name
 - The appointment is scheduled in the earliest free time slot. The hour is shown to the user.

◆ Cancel an appointment – enter name

- If there is a room reserved
 - The user is asked for his/her name
 - If found, the appointment is canceled and later appointments are shifted up

◆ List appointments

- Show the schedule, all the names and free slots

◆ Quit

- Return from the main function

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❖ Implementation

- ◆ Use an array of strings, size 6x20
 - 6 appointments
- ◆ Initially, the array contains a null character ('\0') in the first position of each string
- ◆ Keep a counter of number of appointments

Lab 7 – Scheduling System

❖ Implementation

◆ Schedule

- If the dentist is busy, inform the user
- Otherwise
 - An appointment is scheduled in the first slot available, given by the number of appointments (no loop)
 - Update the number of appointments

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❖ Implementation

◆ Cancellation

- If the schedule is empty, inform the user
- Otherwise, search for the name in the array
 - If found
 - » Cancel the corresponding appointment
 - » Shift later appointments up to close the hole
 - » Update the number of appointments
 - If not found
 - » tell the user

Lab 7 – Scheduling System

❖ Implementation

◆ List

- If the schedule is empty, inform the user
- Otherwise
 - Traverse the array, showing the name assigned to each appointment or an empty string for the free slots.

Lab 7 – Scheduling System

❖ Requirement

◆ Have a forever loop

- In the loop, use switch to decide which action to take depending on the command entered: 1, 2, 3, or any other

◆ Variables

- array of strings to keep the appointments
- number of appointments

Lab 7 – Scheduling System

- ❖ You will use C in the Mac or Linux
 - ◆ Use your DC account
 - The home directory
 - You don't need to do this on the web server
 - ◆ Edit the program using vi in the terminal
 - The program needs to be a ".c" file
 - ◆ Compile with gcc

```
gcc -o name name.c
```
 - ◆ Execute

```
./name
```

Lab 7 – Scheduling System

❖ When you are done

◆ Demo

- Execute your code on the terminal to the TA

◆ Submit

- Print and submit the source code to the TA
- Don't forget to put your name on it!