Intro to Programming
COEN 10

Lab 7 – Ski Lessons

Lab 7 – Ski Lessons

- Your program schedules ski lessons
- The ski instructor has lessons at
  - 1pm, 2pm, 3pm, 4pm, 5pm
- New
  - Requests are by name
  - Cancelation openings are closed by shifting the later lessons to earlier times
  - Extra option to show names that start with a given letter

Lab 7

- Interface
  - The user can use the system to
    - (1) Request a lesson
    - (2) Cancel a lesson
    - (3) List the lessons
    - (4) Show names starting with a letter
    - (9) Quit
    - Any other number, report and ignore

Lab 7

- Interface
  - Request – enter name
    - If there is a free slot, one slot is reserved under the name given by the user
  - Cancelation – enter name
    - If there is a lesson under that name, cancel the lesson
  - List lessons
    - List all the slots, showing the name or "free"
  - Show names – enter letter
    - List all the names that start with the letter.
  - Quit
    - Finish the program

Lab 7

- Implementation
  - Use an array of strings, 5x20
    - 5 lessons
    - 19 characters for each name
  - Initially, the array contains '\0' in the first element of each string, indicating that the slot is free
  - Keep a counter of lessons.

Lab 7

- Implementation
  - Requesting a lesson
    - Read a name with **scanf** into a string variable
    - If the schedule is full, inform the user
    - Otherwise
      - The name is added to the next slot open, indexed by the counter (use **strcpy** to copy the name)
      - Update the counter

Lab 7

- Implementation
  - Cancellation
    - Read a name with **scanf** into a string variable
    - If the schedule is empty, inform the user
    - Otherwise
      - Search the name in the array (use **strcmp**)
        - » Cancel the corresponding element
        - » Shift the names up to close the opening
        - » Place a '\0' in the first character of the last name (indexed by counter – 1)
        - » Update the counter

Lab 7

- Implementation
  - List
    - If the schedule is empty, inform the user
    - Otherwise, traverse the array, showing the name assigned to each slot or "free"

Lab 7

- Implementation
  - Show names starting with a letter
    - If the schedule is empty, inform the user
    - Otherwise, read the letter with **scanf**
    - Traverse the array, showing all the names starting with the given letter.

Lab 7

- Requirements
  - Variables
    - Array of strings to keep the lessons
    - Counter to keep track of the number of lessons
  - Use **switch** to select the option

Lab 7

- You will use C in the Mac or Linux
  - Use your DC account
  - Don't edit on the previous lab. Make a copy.
    - cp lab6.c lab7.c
  - 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

- Before the lab
  - Draw the flowchart for option 4
    - Deliver the flowchart to the TA at the beginning of the lab
    - Don't forget to add to the page
      - Name
      - Lab Section
      - Lab #

Lab 7

- When you are done
  - Demo
    - Execute your code on the terminal to the TA
  - Submit
    - Submit the source code to Camino
    - Don't forget to put your name on it!

End

Lab 7