



Intro to Programming COEN 10

Lab 8 – Ski Lessons

SCHOOL OF ENGINEERING



Lab 8 – Ski Lessons

- Your program schedules ski lessons
- The ski instructor has lessons at
 - 1pm, 2pm, 3pm, 4pm, 5pm
- **New**
 - Cannot repeat names
 - Keep the phone number because of the time change
 - Each request can be for one person or for a group of up to 4 people
 - Use functions!

SCHOOL OF ENGINEERING



Lab 8

- **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
 - (5) Show groups with a number of people
 - (9) Quit
 - Any other number, report and ignore

SCHOOL OF ENGINEERING



Lab 8

- **Interface**
 - **Request** – enter name, and number
 - If there is a free slot, one slot is reserved under the name given by the user
 - **Cancellation** – enter name
 - If there is a lesson under that name, cancel the lesson
 - **List lessons**
 - List all the slots, showing the name and size of the group or "free"
 - **Show names** – enter letter
 - List all the names that start with the letter.
 - **Show names** – enter number
 - List all the names in requests with the specified group size
 - **Quit**
 - Return from the main function

SCHOOL OF ENGINEERING



Lab 8

- **Implementation**
 - Use an array of strings, 5x20
 - 5 lessons
 - 19 characters for each name
 - Add:
 - string array for the phone numbers
 - int array for the sizes
 - Keep a counter of lessons.

SCHOOL OF ENGINEERING



Lab 8

- **Implementation**
 - Request a lesson
 - Read the name
 - Read the size of the group and phone number
 - If the schedule is full, inform the user
 - If the name is used, inform the user
 - Otherwise
 - The name is added to the next slot open, indexed by the counter (use strcpy to copy the name)
 - The size and phone number are added to the corresponding element in the other arrays
 - Update the counter

SCHOOL OF ENGINEERING



Lab 8

- 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 and phones and sizes up to close the opening
 - NEW: Show to the user who is changing times, name and phone number
 - » Place a '\0' in the first character of the last name (indexed by counter – 1)
 - » Update the counter

SCHOOL OF ENGINEERING



Lab 8

- Implementation
 - List
 - If the schedule is empty, inform the user
 - Otherwise, traverse the array, showing for each lesson time, the name, phone number, and group size assigned to each slot or "free"

SCHOOL OF ENGINEERING



Lab 8

- 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. Show their lesson time as well.

SCHOOL OF ENGINEERING



Lab 8

- Implementation
 - Show names associated with requests for a specified group size
 - If the schedule is empty, inform the user
 - Otherwise, read the number with scanf
 - Traverse the array, showing all the names corresponding to groups with the size specified and their lesson time.

SCHOOL OF ENGINEERING



Lab 8

- Requirement
 - Variables
 - 3 arrays
 - Counter to keep track of the number of lessons
 - Switch to select the option
 - Functions:
 - Request
 - Cancel
 - List
 - Letter
 - Group


SCHOOL OF ENGINEERING



Lab 8

- 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


SCHOOL OF ENGINEERING



Lab 8

- Pre-lab
 - Pseudo-code of the group function (option 5)
- 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!

SCHOOL OF ENGINEERING



End

Lab 8

SCHOOL OF ENGINEERING