

Junior Knights ComServEvent Class and Program

Recall that the Time class, which was covered earlier in class has the following functionality:

```
// Creates a time object of h hours, m minutes.
public Time(int h, int m)

// Creates a time object of m minutes.
public Time(int m)

// Creates a time object of 0 minutes.
public Time()

// Returns true iff this time object equals time2.
public boolean equals(Time time2)

// Returns true iff this time object is greater than time2.
public boolean greaterthan(Time time2)

// Returns a negative integer if this time object is less than time2, 0 if
// both are equal and a positive integer if this time object is greater than
// time 2.
public int compareTo(Time time2)

// Returns a new time object that is the sum of this time object and time2.
public Time addtime(Time time2)

// Returns a new time object that is this time object minus time2.
public Time difference(Time time2)

// Returns a string representation of this time object.
public String toString()
```

Many students in high school have to do community service. The goal in this assignment is to write a class called ComServEvent that keeps track of a single community service event. Then, write program that uses an ArrayList of ComServEvents to keep track of the events a student has participated in. A full specification of the ComServEvent class will be given which you must stick to. You will then use this class to implement a solution to a menu driven program that manages a single student's set of community service events.

Specification of the ComServEvent class

Here are the instance variables for the ComServEvent class:

```
private String organization;
private String type;
private Time start;
private Time end;
```

The organization is the group with which the service was done. The type of service is the general category (say "pets", "children", "cancerwalk", etc.) The start time (after midnight) is stored in

start and the end time after midnight is stored in end. It's assumed that each even occurs on a single day (no wrap around after midnight.)

Here are the public methods your class should have:

```
// Creates a ComServEvent based on the four inputs.
public ComServEvent(String mygroup, String mytype,
                    Time startTime, Time endTime)

// Returns the duration of this ComServEvent.
public static Time getDuration();

// Returns the type of this ComServEvent.
public static String getType();

// Returns the organization of this ComServEvent.
public static String getOrganization();
```

ManageComServe Class

In a third class, ManageComServe, write a main method (and some other static methods) which manages a single student's community service events. The beginning of the program should start with an empty ArrayList of ComServEvent. Then, the program should present the user with the following menu options:

1. Add a community service event.
2. Print the total number of hours with a single organization.
3. Print the total number of hours for a particular type of service.
4. Print the total number of hours of all community service.
5. Print a complete list of each community service event attended.
6. Quit the program.

For menu item #1, ask the user to enter the appropriate information (you can choose how they enter it), and then create the ComServEvent object and add it to the ArrayList.

For menu items #2 and #3, ask the user for either the organization or type of service, then print the answer to the query.

For menu items #4 and #5, print the result of the desired query.

For menu item #6, print an closing greeting and exit the program.

No sample input/output is given so that you have more freedom in the design of the program. In addition, after completing this functionality, you may add functionality to both the ComServEvent class and the ManageComServe class, if you'd like.