Criterion A: Planning

Situation:

Mr. Josh Linen is a coach of Cross Country and Track at Valencia High School. Over the past decade his program has grown to well over 50 athletes each year across all grade levels. Because of this it has become a cumbersome task to convey all the results to the athletes quickly. Often times Mr. Linen, will spend over an hour looking at the results from the recent race and then updating the Personal Record (PR) sheet with any new records set. The product is intended to make this process easier and use java data structures that will hold the information for each runner on the team. The adviser will be Mr. Jason Parker, computer science instructor at Valencia High School.

Rationale:

After consulting with Mr. Linen, I suggested the product should update an existing PR sheet document based off manual input. When a time is added, it will update a runner's records. Since athletes have multiple races in a single week, getting results quickly is very important. This product would greatly increase the speed at which results can be processed. I have researched databases for statistics on runners and found that even though all the PR's are updated, the convenience is much lower. It takes time to search for each runner's information and no database currently pertains to only the runners at a certain school. Therefore, a new program that will update this information for a high school cross country team must be developed.

My product: a program will be an electronic PR sheet and database that will be able to take in user input, update the information for each runner, display statistics, and export data to text files.

My program will be GUI-based and have options for manually updating the PR sheet with new times, updating and sorting data, and exporting to a new document. This will utilize a personal race class that will include the name of a race and a time specific to a runner. The runner class will in turn hold races in a data structure, personal characteristics, and statistics like personal record. A meet class will also hold a data structure of type runner, this will hold all competitors for a given meet. Additionally, a Personal Record class will have a data structure holding all runners and have the ability to sort by time and name. This class will also have a data structure holding all meets in the database. The program will contain a text pane that will display the current PR sheet and student data with options for sorting, updating, and exporting.

I will use Java because its object-oriented approach as well as my comfortability with the language make it very fitting for my product. Over the last two years I have picked up enough skill with Java and GUI programming to successfully develop the product. The data required to create the program will be provided by Mr. Linen. All of the computers at Valencia High School will be capable of running the program as the only external software needed is the built in notepad. There are no security risks involved as the program does not handle any highly sensitive or private data.

Success Criteria:

Criterion Number	Criteria
1	Program should be able to read data from a text file in order to create the database. This should create all Runners that are defined in the text file and the Main Menu will have options to create Runners manually as well.
2	Search and Remove single or multiple Runners by Name, Time, and Level from the Main Menu
3	Create Meets through the Meet Class that holds an Array list of type runner. Add runners from database to meet during initialization.
4	Client must be able to manage meets through the Meet Menu
5	Runners should be addable, removable, and have editable time in the Meet Menu
6	Runner private data including name, time, and level should be changeable in the Main Menu or the Meet Menu
7	Create Races in the Race Menu that holds a meet name and a time. All Races in the menu should be sorted by time.
8	Export All Data sorted alphabetically or PR Sheet sorted by PR to new Text Files

Word Count: 497