Program 3: Due 9/23

Extend program 1 (the car simulation) so that we can specify the course segments using an XML data file. The course should allow any number of segments. Each segment must be at least 0.5 miles in length. Segments are specified by a SEGMENT tag that has a SEGMENT_NUMBER, a LENGTH, and a SPEED_LIMIT. Segment numbers must be consecutive and non-overlapping. It is not valid for a file to have two segments with the same SEGMENT_NUMBER; nor is it valid for a file to have gaps in the sequence of segment numbers. Note however, that the order of segments in the XML file is not specified. A valid XML description of the track in Program 1 is

```
<SEGMENT>
    <SEGMENT_NUMBER> 1</SEGMENT_NUMBER>
    <LENGTH> 1.0</LENGTH>
    <SPEED_LIMIT> 20</SPEED_LIMIT>
<SEGMENT>
<SEGMENT>
    <SEGMENT_NUMBER> 3 </SEGMENT_NUMBER>
    <LENGTH> 1.0</LENGTH>
    <SPEED_LIMIT> 30</SPEED_LIMIT>
<SEGMENT>
<SEGMENT>
    <SEGMENT_NUMBER> 2 </SEGMENT_NUMBER>
    <LENGTH> 1.0</LENGTH>
    <SPEED_LIMIT> 60</SPEED_LIMIT>
<SEGMENT>
```

Modify Program 1 so that it accepts an xml file name on the command line. If no file name is provided, your program should prompt for a file and accept the file name from the keyboard. Your program should open and read the file, then set up a course with the specified number of segments. The input file will have at least one segment. Speeds will vary from 5 to 80 mph. Model three cars with accelerations given in program 1. The cars start one minute apart.