SEG2105. Introduction to Software Engineering

Assignment 2

Fall 2016

Assignment due: October 9 2016 by 11h59pm.

This is an individual assignment. You must work strictly alone on this.

Hand in answers to the following. It is suggested that you do PART 1 from Chapter 2 by October 1, and do PART 2 from Chapter 5 around Oct 5 after we have covered the material in the lectures.

PART 1 (Chapter 2) (24 points)

1. E12 (pages 43-45), parts a, b, c, f and h. You may use Umple for this. (15 points)
2. E15 (page 50), part a et b. (4 points)
3. E18 (page 51), parts a, b, c, d and e. (5points)

PART 2 (Chapter 5) (26 points)

Create a UML class diagram for system described below. Make sure you include correct multiplicity. Show all attributes and associations plus at least 10 important operations. If generalizations are necessary, show them too. Marks will be given for effort, even if you don't have a perfect solution. However, marks will be lost for the common types of mistakes we talked about in class (e.g. poor generalizations, wrong multiplicity, etc.). To simplify your diagram don't include getters and setters.

You run a company, (SPARTAN) which organizes many different races in the wilderness in various parts of the world. Each race involves a few teams; each team has 4 members. Every race has a series of 4-5 legs, each with a starting location and an ending location and usually taking many hours to complete. One leg is raced each day by all the teams that haven't yet dropped out. The teams use various skills (e.g. skiing, mountain climbing, kayaking, cycling etc.); each leg may involve one or more of the skills.

Each team is given a starting time for each leg; times at which teams start are staggered so that there are initially 10-minute gaps between teams. When a team reaches the end of the leg, the time that the third member of the team crosses the finish line is used to compute the team's overall time. Teams are scored based on their cumulative times for all the legs, although penalty minutes can be assessed for various reasons.

Races are run using the same routes (i.e. series of legs) repeatedly so that teams can see if they can beat records. Records are kept of best time for the race route, as well as best time for each leg. A team enters only one race; even if the same members enter again, they are considered a different team.

Bonus (+5 points). Use Umple for PART 2.