

CS 4804 Homework 7

Solution Sketches

1. **EBG (35 points)** When I was first learning ML, I learned that `h::t` made a new list with the element `h` at the head and `t` making up the rest of the list. I was having trouble solving a homework question until I saw a tutorial with sample programs which showed an example which included `h::m::t`. At this point I realized that you could chain up `::` as much as you want to pattern match more than just the top element of the list. My new knowledge was that `::` could be used multiple times in an expression. The description was the line of code showing the multiple usage of `::`, with the classification being how the `::` were successively chained together. My old knowledge was that `::` represented a mathematical function, and that multiple functions can be chained together. Credit: Chris Bateman
2. **RBL (35 points)** After tasting Natural Light, I was able to conclude that all cheap beers probably taste bad, since similar things with similar prices are usually of similar quality. The old knowledge was that if one type of food tastes one way when sold for a certain price, then other items of that food will also taste the same way when sold at a similar price. The description is a can of Natural Light, the price, the color, etc. The classification is that it tastes bad. The new knowledge is that all cheap beers will also taste bad. Credit: Taylor Mitchell
3. **KBIL (30 points)** Knowing that the difficulty of something is related to how much work is spent doing it, it is possible to conclude that physics is a harder major than business by looking at the times that physics students and business students spend on their work. The old knowledge is that the difficulty of something is related to how much work is spent doing it. The descriptions are the majors of various students, with the classifications being the amount of work the students do, with the physics students doing more work than the business students. The new knowledge is that Business is easier than Physics. Credit: Patrick Butler