**Adaptive Algorithm**I have multiple solution to implement the adaptive algorithm. I only get stuck with some ideas.   
  
**First idea:**My first idea was to implement the adaptive algorithm in such way that if you answer a question incorrectly, you get an easier problem. When you get an answer right, you get a harder problem. This has some advantages, it is very adaptive and in this way, you are also making use of the different difficulty measures of the problems. However, when you implement the algorithm like this, it is possible that you skip many question and also that when you get the easiest problem wrong, you get the same question again. Also, my progress bar would then be a problem. How much should the bar increase when you get an answer right? How much should the bar decrease when you get an answer wrong? My aim is to have a progress bar that is completely filled when you get all your answers right. and slightly less filled when you have done one or two questions wrong etc.. Another problem with this idea is that you do not exercise all questions, which is I think important.   
 **Second idea:**My second idea was to implement the adaptive algorithm in such way that it first asks the easiest problem and gradually gets harder. In this case the question that are answered wrong do not influence the order of the problems asked, but influence the amount of hints you get for the next questions. In this way, my progress bar could still be used. It knows many questions should be asked and can take this into account when it needs to be increased. When a harder problem is asked, it should increase more than when a slightly easier problem is asked. When you get a question right, the next question should be asked with less hints. The disadvantage of this is that you make problems that never have been asked before slightly more difficult or easier, because of earlier answers, while you do not know if these problems are also easier/ more difficult for the player. Also this implementation is the same as a linear algorithm , which is perhaps not very adaptive.   
  
**Third idea:**The third idea and also the idea I think is the most useful for my game, is that you only ask problems again that have been answered incorrectly. You also mentioned this. In this way my game is also adaptive and harder question are more exercised. A disadvantage of this way is that it is harder to keep track of the progress bar. I think it should still be possible to use the progress bar with the salary idea, but it does not know how many question are asked.  
  
 I can also implement that hints are given, such that only the buttons that you need to make a particular molecule, are shown for harder problems and for questions that you answered incorrectly. However, I am not sure when I should give more hints. Is it right to give hints only for the problems that you did wrong? Or perhaps, if you give many wrong answers, you show the buttons you need for all hard problems? In the section “ideas about hints” I also have some ideas for the hints. I think that idea is perhaps better and also more fun for the player.  
  
 I also thought that it is perhaps good to only repeat a question three times at the maximum. When you do this, you are capable of computing the maximum amount of questions at any time. This could be of use for keeping track of the progress bar. It also should be implemented that if you, for example, answer a question completely wrong, it is sooner asked again then when you only have one connection wrong. My idea is to only repeat a question when you get it wrong, but perhaps it is better to repeat a question more than once if you get it totally wrong. So for example, if you have no idea how to make molecule 1, it is perhaps better to repeat molecule 1 after 2 questions again and then independent of the answer to the repeated question, ask this molecule 1 once more. Questions that are answered wrong, but are almost right should only be asked once again.   
So for example, if you have question A, B, C and D with corresponding difficulties 1,2,3 and 4.  
This could be a cycle of the game:

A (correct) -> B (completely wrong) -> C(slightly wrong) -> B (correct) -> D -> B (correct) -> C (wrong)   
  
After this you should get the salary that is corresponding to the height of the progress bar.  
 **Ideas about hints:**I think it is perhaps best to have an option to get hints, a hint could be that only buttons are shown that you need for the molecule. A hint also could be that is shown what the covalence of certain atoms is (if you know this, you could derive from this how you should connect certain atoms). A hint could perhaps also be that your molecule is evaluated and that you can see if it is correct and if It is incorrect what is incorrect. A hint is not for free, it will cost some money, but if you get your molecule right you also get the full points for it. To do this, I think I could make three buttons that could be pressed when you want one of this hints, on these buttons will also be shown how much it costs. Maybe this idea is better than what I said in my explanations of the different implementations of the algorithm.

In short, I think that the third idea is best and that I could make buttons that, when pressed, give you hints.