Chemistry

**Software Quality Assurance**

**SQA Design Checklist**

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| **Revision Number** | **Revision Date** | **Author** | **Summary of Changes** |
| 1 | 3-13-2013 | John Gibbons | Initial creation of document and draft. |
| 2 | 3-14-2013 | John Gibbons | Second revision of draft and added additional items. |
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Design Checklist

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| --- | --- | --- | --- |
| **No.** |  | **Y, N, NA** | **Comments** |
|  | Support Material |  |  |
| 1 | Has the UML been completed and fully designed? | Y |  |
| 2 | Have the state diagrams been completed and fully designed? | Y |  |
| 3 | Have use cases been made and fully represent all requirements? | Y |  |
| 4 | Have at least one use case scenarios been made for each use case? | Y | They each contain one. |
| 5 | Has all the above documents been properly designed to reflect all the customers' requirements? | Y |  |
| 6 | Has the client signed off on the design? | Y |  |
| 7 | Do all documents conform to Object Oriented Design principles? | Y |  |
| 8 | Do any documents need to be updated or changed? | Y | Due to changes during the term of the project, some documents were needed to be updated. |
| 9 | Are all classes, interfaces and objects shown in the design? | y |  |
|  | Inspection Checklist | **Y, N, NA** | **Comments** |
| 1 | Has the classes been named appropriately for the code segments and processes they contain? | Y |  |
| 2 | Are all class relations properly connected? | Y |  |
| 3 | Has the functions been named appropriately for the processes they will be doing? | Y | They have been named after the actions they perform. |
| 4 | Has the methods been named appropriately for the processes they will be doing? | Y | They have been named after the actions they perform. |
| 5 | Has the variables been named appropriately for the information they are storing? | Y | They have been named after the data they store. |
| 6 | Have professional commenting procedures been followed? | Y | Some commenting is lacking. However, all necessary commenting exists. |
| 7 | Are all the relationships and number of possible instances between entities correct? | Y |  |
| 8 | Has any core functionality been left out that was outlined in the requirements documentation? | N | All functionality is accounted for. |
|  | Variables | **Y, N, NA** | **Comments** |
| 1 | Are there any redundant functions, methods, or variables? | N |  |
| 2 | Are any variables hard-coded? | N |  |
| 3 | If hard-coded variables exist, if they are changed will they deter the program from functioning properly? | N |  |
| 4 | Has any and all variables and arrays been properly set up and instantiated? | Y |  |
| 5 | Are all method return types properly type casted? | Y |  |
| 6 | Are all data types properly typed and/or casted? | Y |  |
|  | Structure | **Y, N, NA** | **Comments** |
| 1 | Will changes to the class diagrams alter the functionality of the program? | Y | Classes rely on the names listed as functions/methods in the UML. Changing the names would cause other code to fail. |
| 2 | Will changes to data types within the diagrams cause problems elsewhere? | Y | There is no failsafe explicit type casting because none was necessary. |
| 3 | Will changes in method parameters cause problems elsewhere? | Y |  |
| 4 | Will any changes possibly result in pointer exceptions? | Y |  |
|  | Finalization | **Y, N, NA** | **Comments** |
| 1 | Does the design contain appropriate error catching methods? | Y |  |
| 2 | Does the error catching methods provide adequate information to the user on how to resolve the error? | Y | All explained in laymen terms. |
| 3 | Is the design modular enough such that further requirements and design changes are possible? | Y | The program was designed to be later expanded on. |
| 4 | Is the design realistic enough such that the development team can complete the tasks in the allotted timeframe? | Y |  |
| 5 | Does the design take into account all constraints in which may hinder the functionality of the program? | Y |  |
| 6 | Does the design ensure optimized usage and flow for the user? | Y | Everything was kept as simple as possible. |
| 7 | Does the design logically flow from one process/step to the next? | Y |  |
| 8 | Does the design and layout of the animations match the requirements? | Y | (except the higher end 'Simpsons' style graphics. |
| 9 | Are all options for the user to perform from the SRS document accounted for? | Y | Users can complete all tasks promised in the requirements doc. |