Maintenance Checklist

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| **Revision Number** | **Revision Date** | **Author** | **Summary of Changes** |
| 1 | 3-13-2013 | John Gibbons | Initial creation of document and first draft. |
| 2 | 3-14-2013 | John Gibbons | Second draft and additional items added. |
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| **No.** |  | **Y, N, NA** | **F, O** | **Comments** |
|  | **Documentation** |  |  |  |
| 1 | Is there a generated error report or a properly filed support ticket? |  |  |  |
| 2 | Is there a customer support solutions manual provided? |  |  |  |
| 3 | Is there an installation manual provided? |  |  |  |
| 4 | Is there a user manual provided? |  |  |  |
| 5 | Has the support ticket been filled out properly? |  |  |  |
| 6 | Has the issue been properly stated? |  |  |  |
| 7 | Did the user provide evidence with the support ticket? |  |  |  |
| 8 | Was the date and version number of the software properly documented on the support ticket? |  |  |  |
| 9 | Do the errors generate error codes? |  |  |  |
|  | **Resolution** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Was the error able to be regenerated? |  |  |  |
| 2 | Was the error related to the program or the users machine? |  |  |  |
| 3 | Was the maintenance done in a timely manner? |  |  |  |
| 4 | Was the customer/user satisfied with the maintenance? |  |  |  |
|  | **Future Additions** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Will intended future additions affect the current functionality of the program? |  |  |  |
| 2 | Will intended future additions add to the current functionality of the program? |  |  |  |
| 3 | Does the program include ways to inform the users of new features and additions? |  |  |  |
| 4 | Has the client fully approved of any additions? |  |  |  |
| 5 | Is the code modular and well commented enough to easily modify? |  |  |  |
|  | **Further Contact** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Does the client have the ability to reach the development team should any issue arise? |  |  |  |

Installation Checklist

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| 1 | 3-13-2013 | John Gibbons | Initial document creation and first draft. |
| 2 | 3-14-2013 | John Gibbons | Second draft and additional items added. |
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| **No.** |  | **Y, N, NA** | **Comments** |
|  | **Support** |  | Incase system does not have the necessary software. |
| 1 | Internet Explorer 7.0 or higher installed |  |  |
|  | Firefox 3.6 or higher installed |  |  |
|  | Google Chrome |  |  |
|  | **Windows Systems** |  | For machines which use Windows |
| 2A |  |  |  |
|  | RAM - 128mb (64mb for Windows XP 32bit) |  |  |
|  | Disc Space - 128mb |  |  |
|  | **Mac OS X** |  | For machines which use MAC OS |
| 2B |  |  |  |
|  | Mac OS X 10.7.3 (Lion) or later |  |  |
|  | **Linux** |  | For machines which use Linux |
| 2C |  |  |  |
|  | Oracle Linux 5.5+ |  |  |
|  | - Oracle Linux 6.x (32bit) |  |  |
|  | - Oracle Linux 6.x (64 bit) |  |  |
|  | Red Hat Enterprise Linux 5.5+ |  |  |
|  | - Oracle Linux 6.x (32bit) |  |  |
|  | - Oracle Linux 6.x (64 bit) |  |  |
|  | Ubuntu Linux 10.04 and above |  |  |
|  | Suse Linux Enterprise Server 10 sp2 |  |  |
| 2C.1 |  |  |  |
|  | Ram - 64 MB |  |  |
|  | Disk Space - 58 MB |  |  |
|  | **Software Requirements** | **Y, N, NA** | **Comments** |
| 1 | Have Java Runtime Environment 7 or newer? |  |  |
|  | **Additional** | **Y, N, NA** | **Comments** |
| 1 | Is the program easy to install? |  |  |
| 2 | Is the install process fully documented in the manual? |  |  |
| 3 | Does the installation manual contain useful screen shots? |  |  |
| 4 | Is the installation manual easy to use and navigate? |  |  |
| 5 | Are trouble shooting options addressed as best as possible? |  |  |
| 6 | Was this assessment done when scheduled? |  |  |
|  | **Documentation** | **Y, N, NA** | **Comments** |
| 1 | Is there a cover page and table of contents? |  |  |
| 2 | Is there revision control? |  |  |

Implementation Checklist

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| 1 | 3-13-2013 | John Gibbons | Initial creation of document and first draft. |
| 2 | 3-14-2013 | John Gibbons | Second draft and additional items added. |
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| **No.** |  | **Y, N, NA** | **F, O** | **Comments** |
|  | **Documentation** |  |  |  |
| 1 | Has all standards and guidelines been identified? |  |  |  |
| 2 | Were any changed made to the implementation document? |  |  |  |
| 3 | Have any rules been added for initial implementation document? |  |  |  |
| 4 | Is there a cover sheet and table of contents? |  |  |  |
| 5 | Is there revision control? |  |  |  |
| 6 | Has the implementation strategy been approved? |  |  |  |
| 7 | Has all requirements been confirmed with the client? |  |  |  |
| 8 | Has the Design documentation been approved? |  |  |  |
| 9 | Has the Design checklist been performed? |  |  |  |
| 11 | Does the design solution meet the requirements? |  |  |  |
| 12 | Is the set of deficiencies provided? |  |  |  |
| 13 | Was this checklist conducted on schedule? |  |  |  |
| 14 | Were all needed resources available to properly and fully perform this checklist at time of completion? |  |  |  |
|  | **Schedule** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Has the workload been appropriately divided upon members in the development team? |  |  |  |
| 2 | Has the work breakdown structure been established? |  |  |  |
| 3 | Has the work breakdown structure been approved? |  |  |  |
| 4 | Has proper deadlines been set for the coding phase? |  |  |  |
| 5 | Were those deadlines met within reason? |  |  |  |
|  | **Support Material** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Was all source code provided? |  |  |  |
| 2 | Was all documentation provided? |  |  |  |
| 3 | Was Analysis report provided? |  |  |  |
| 4 | Is the Analysis report in the correct format? |  |  |  |
|  | **Structure** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Is the user interface user friendly? |  |  |  |
| 2 | Is the coding style consistent? |  |  |  |
| 3 | Has professional comments been provided? |  |  |  |
| 4 | Is there code that could be condensed? |  |  |  |
| 5 | Is there code that could be re-written for higher optimization? |  |  |  |
| 6 | Is there repetitive code? |  |  |  |
| 7 | Does the code properly implement all requirements from the Analysis report? |  |  |  |
| 8 | File Opening/Closing: Will the proposed requirements cause additional files to be opened and/or closed from the previous version? |  |  |  |
| 9 | Data Values: Will proposed changes to data values within the scope of the changes cause problems elsewhere? |  |  |  |
| 10 | Parameter Change: Will proposed changes affect the subroutines? |  |  |  |
| 11 | File Position Change: Will proposed changes affect the files sensitive to record positioning? |  |  |  |
| 12 | Invalid Pointer: Will proposed changes affect existing linked data structures, possibly causing pointer exceptions? |  |  |  |
| 13 | Record Layout Change: Will proposed changes affect record layouts? |  |  |  |
| 14 | Is storage use efficient? |  |  |  |
| 15 | Is the code consistent in style? |  |  |  |
|  | **Variables** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Do all classes follow proper naming conventions? |  |  |  |
| 2 | Do all methods follow proper naming conventions? |  |  |  |
| 3 | Do all functions follow proper naming conventions? |  |  |  |
| 4 | Do all variables follow proper naming conventions? |  |  |  |
| 5 | Are there any unused variables? |  |  |  |
| 6 | Are variables of the correct types? |  |  |  |
| 7 | Are accessors and mutators named properly and similarly? |  |  |  |
| 8 | Are all array references in bounds? |  |  |  |
|  | **Loops and Branches** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Do loops properly initialize and increment/decrement the variables properly? |  |  |  |
| 2 | Are loops to nested? |  |  |  |
| 3 | Are nested loops properly nested? |  |  |  |
| 4 | Are all cases covered in IF/ELSEIF/ELSE statements or CASE blocks? |  |  |  |
| 5 | Does every switch statement have a default? |  |  |  |
| 6 | Are loop termination conditions achievable? |  |  |  |
| 7 | Does the code in the loop avoid manipulating the index variable or using it upon termination of the loop? |  |  |  |
| 8 | Are case statements properly set up and contain breaks? |  |  |  |
| 9 | Does the default case give an error if not reached? |  |  |  |
|  | **Defensive Programming** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Do processes occur in the right order throughout the program? |  |  |  |
| 2 | Has unit testing been done to ensure functions and methods provide the correct solutions? |  |  |  |
| 3 | Has the functions/methods been made modular such that further expansions are easier? |  |  |  |
| 4 | Are there any unused functions or methods? |  |  |  |
| 5 | Do methods/functions contain appropriate error catching capabilities? |  |  |  |
| 6 | Are the error messages direct and easy to understand? |  |  |  |
| 7 | Does the correct form get forefront attention? |  |  |  |
| 8 | Is the correct data being operated upon in each statement? |  |  |  |
|  | **Additional** | **Y, N, NA** |  | **Comments** |
| 1 | Does the code properly send the nonane molecule structure to processing to generate the design? |  |  |  |
| 2 | Does the code ensure that if the user makes their own version, that it is indeed only a nonane molecule? |  |  |  |
| 3 | Does processing properly generate the map? |  |  |  |
| 4 | Does the animation follow the process in exact accordance to the customers models? |  |  |  |
| 5 | After the user watches the animation and wishes to go back to first window, does the animation window close properly? |  |  |  |
| 6 | If the user chooses to enter in the name of the nonane molecule, does the program appropriately inform the user if they are correct or incorrect? |  |  |  |
| 7 | If the user chooses to enter in the name of the nonane molecule and does so incorrectly, does the program appropriately inform them of their mistake and how to fix it? |  |  |  |
| 8 | Is there code that will inform the user when additional updates or requirements have been added? |  |  |  |
| 9 | Is there code that will allow the user to leave messages for software engineers/developers? |  |  |  |

Testing Checklist

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| **No.** |  | **Y, N, NA** | **F, O** | **Comments** |
|  | **Requirements Testing** |  |  |  |
| 1 | Have all requirements from the SRS requirements document been satisfied? |  |  |  |
| 2 | Does all the requirements in the SRS document fully meet the customers' requirements? |  |  |  |
| 3 | Does the code properly and fully implement those requirements? |  |  |  |
| 4 | Can the requirements' code be tested? |  |  |  |
| 5 | Are the requirements clear and concise? |  |  |  |
| 6 | Has the customer signed off on all requirements for verification? |  |  |  |
| 7 | Does the program execute each step of the naming process and animation process according to the customers' models? |  |  |  |
| 8 | Does the software meet security requirements? |  |  |  |
| 9 | Does the software meet privacy requirements? |  |  |  |
| 10 | Does the documentation have a description of higher architecture? |  |  |  |
|  | **Functional Design** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Does the design allow the user to perform any and all tasks promised? |  |  |  |
| 2 | Does the design incorporate future software updates and expansions? |  |  |  |
| 3 | Does the software allow for the user to create their own nonane molecule? |  |  |  |
| 4 | Does the software allow for the user to enter in what they believe to be the name for the nonane molecule? |  |  |  |
| 5 | Does the software allow for some actions to be performed multiple times? |  |  |  |
| 6 | Does the design handle well under stress load? |  |  |  |
| 7 | Does the software inform the user when a mistake has been made and how to resolve it? |  |  |  |
| 8 | Does the design give the user a simple interface to work with? |  |  |  |
| 9 | Does the design allow the user to backtrack to previous forms? |  |  |  |
| 10 | Does the design allow testers to add comments? |  |  |  |
| 11 | Does the design allow the users to add comments? |  |  |  |
| 12 | Does the design address techniques and tools that shall be used to assure software quality assurance? |  |  |  |
| 13 | Does the design catch all exceptions correctly? |  |  |  |
|  | **Testing Techniques** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Does the software pass Black box testing? |  |  |  |
| 2 | Does the software pass White box testing? |  |  |  |
| 3 | Does the software pass Unit testing? |  |  |  |
| 4 | Does the software pass Integration testing? |  |  |  |
| 5 | Does the software pass System testing? |  |  |  |
| 6 | Does the software pass Alpha testing? |  |  |  |
| 7 | Does the software pass Beta testing? |  |  |  |
| 8 | Does the software pass Acceptance testing? |  |  |  |
|  | **Environmental testing** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Does the program run correctly on all operating systems specified in the SRS document? |  |  |  |
| 2 | Does the program work correctly with all drivers? |  |  |  |
| 3 | Does the program work smoothly in these environments? (not choppy) |  |  |  |
| 4 | Does any aspect of the program crash or freeze during any step in these different environments? |  |  |  |
| 5 | Is any functionality hindered by running in any of the operating systems specified in the SRS document? |  |  |  |
|  | **Acceptance Testing** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Are all previous issues and bugs fixed? |  |  |  |
| 2 | Is the client satisfied with the finished project? |  |  |  |
| 3 | Is the finished project ready for release? |  |  |  |

Requirements Checklist

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| **No.** |  | **Y, N, NA** | **F, O** | **Comments** |
|  | **Documentation Standards** |  |  |  |
| 1 | Were the documents prepared in accordance with Object Oriented Design principles? |  |  |  |
| 2 | Is there a cover sheet and table of contents? |  |  |  |
| 3 | Is there revision control? |  |  |  |
|  | **Feasibility** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Has the client been met with and proper contact information exchanged? |  |  |  |
| 2 | Has a domain analysis been done? |  |  |  |
| 3 | Has features from similar software been identified? |  |  |  |
| 4 | Has an appropriate development cycle been decided upon? |  |  |  |
| 5 | Are proposed milestones realistic? |  |  |  |
| 6 | Has a list of deliverables been made? |  |  |  |
| 7 | Has the customer signed off on the list of deliverables and is satisfied with them? |  |  |  |
| 8 | Is the list of deliverables reasonable for the time constraints? |  |  |  |
|  | **SRS** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Has all requirements in the SRS requirements document been fully documented? |  |  |  |
| 2 | Has the customer signed off on all requirements in the SRS document? |  |  |  |
| 3 | Are all requirements properly incorporated into the program design? |  |  |  |
| 4 | Were there any models submitted with the requirements from the customer? |  |  |  |
| 5 | Were those models complete and relatable? |  |  |  |
| 6 | Do all requirements function according to the customers' models? |  |  |  |
| 7 | Does the domain analysis show other programs with these requirements? |  |  |  |
| 8 | Is the work breakdown structure and timeline reasonable? |  |  |  |
| 9 | Are there any risks with the requirements being changed? |  |  |  |
| 10 | Are there any risks with the deliverables being changed? |  |  |  |
| 11 | Was research done into the machines this program would run on? |  |  |  |
| 12 | Was research done on the operating systems this program will run on? |  |  |  |
| 13 | Was research done on the minimum requirements needed to run this program? |  |  |  |
| 14 | Was research done on I/O devices needed for this program to function properly with? |  |  |  |
| 15 | Was research done on what is needed to upgrade the software/hardware on the machines if they were unsatisfactory? |  |  |  |
| 16 | Does the program run properly on systems containing the minimum set requirements? |  |  |  |
| 17 | Was storing results of the program addressed? |  |  |  |
| 18 | Was security of the data generated by the program addressed? |  |  |  |
|  | **Management** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Is there a plan in place to ensure requirements are developed to the customers' requirements? |  |  |  |
| 2 | Is there a plan in place to handle changes in requirements/deliverables during the project? |  |  |  |
| 3 | Can the development team change requirements or deliverables without consulting the client? |  |  |  |
|  | **Support Material** | **Y, N, NA** | **F, O** | **Comments** |
| 1 | Are all use cases accounted for and adequately represent the requirements? |  |  |  |
| 2 | Does each use case have at least one use case scenario? |  |  |  |
| 3 | Does the interface between the code in Java and the animation in Processing act as intended? |  |  |  |
| 4 | Does the UML clearly show the relationships between each class? |  |  |  |
| 5 | Has the general user population been determined? |  |  |  |
| 6 | Has the design of the GUI and features taken this into account? |  |  |  |
| 7 | Has any and all text seen by the user been written in terms the user will easily understand? |  |  |  |
| 8 | Do external interfaces function as intended? |  |  |  |
| 9 | Is the system reliable? |  |  |  |
| 10 | Does the program meet the requirements set by the client? |  |  |  |

Design Checklist

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| --- | --- | --- | --- |
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| --- | --- | --- | --- |
| **No.** |  | **Y, N, NA** | **Comments** |
|  | **Support Material** |  |  |
| 1 | Has the UML been completed and fully designed? |  |  |
| 2 | Have the state diagrams been completed and fully designed? |  |  |
| 3 | Have use cases been made and fully represent all requirements? |  |  |
| 4 | Have at least one use case scenarios been made for each use case? |  |  |
| 5 | Have change cases been made? |  |  |
| 6 | Has all the above documents been properly designed to reflect all the customers' requirements? |  |  |
| 7 | Has the client signed off on the design? |  |  |
| 8 | Do all documents conform to Object Oriented Design principles? |  |  |
| 9 | Do any documents need to be updated or changed? |  |  |
| 10 | Are all classes, interfaces and objects shown in the design? |  |  |
|  | **Inspection Checklist** | **Y, N, NA** | **Comments** |
| 1 | Has the classes been named appropriately for the code segments and processes they contain? |  |  |
| 2 | Are all class relations properly connect? |  |  |
| 3 | Has the functions been named appropriately for the processes they will be doing? |  |  |
| 4 | Has the methods been named appropriately for the processes they will be doing? |  |  |
| 5 | Has the variables been named appropriately for the information they are storing? |  |  |
| 6 | Have professional commenting procedures been followed? |  |  |
| 7 | Are all the relationships and number of possible instances between entities correct? |  |  |
| 8 | Has any core functionality been left out that was outlined in the requirements documentation? |  |  |
|  | **Variables** | **Y, N, NA** | **Comments** |
| 1 | Are there any redundant functions, methods, or variables? |  |  |
| 2 | Are any variables hard-coded? |  |  |
| 3 | If hard-coded variables exist, if they are changed will they deter the program from functioning properly? |  |  |
| 4 | Has any and all variables and arrays been properly set up and instantiated? |  |  |
| 5 | Are all method return types properly type casted? |  |  |
| 6 | Are all data types properly typed and/or casted? |  |  |
|  | **Structure** | **Y, N, NA** | **Comments** |
| 1 | Will changes to the class diagrams alter the functionality of the program? |  |  |
| 2 | Will changes to data types within the diagrams cause problems elsewhere? |  |  |
| 3 | Will changes in method parameters cause problems elsewhere? |  |  |
| 4 | Will any changes possibly result in pointer exceptions? |  |  |
|  | **Finalization** | **Y, N, NA** | **Comments** |
| 1 | Does the design contain appropriate error catching methods? |  |  |
| 2 | Does the error catching methods provide adequate information to the user on how to resolve the error? |  |  |
| 3 | Is the design modular enough such that further requirements and design changes are possible? |  |  |
| 4 | Is the design realistic enough such that the development team can complete the tasks in the allotted timeframe? |  |  |
| 5 | Does the design take into account all constraints in which may hinder the functionality of the program? |  |  |
| 6 | Does the design ensure optimized usage and flow for the user? |  |  |
| 7 | Does the design logically flow from one process/step to the next? |  |  |
| 8 | Does the design and layout of the animations match the requirements? |  |  |
| 9 | Are all options for the user to perform from the SRS document accounted for? |  |  |