APPENDIX I

Software Quality Attributes Calculation Table.

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| Software  Quality  Attributes | Formula Used / Explanations / Solutions | Computation | Interpretation |
| Error Tolerance | Number of Tests  ET = -----------------------------------------x 100%  Operational Function Test | Error Tolerance  = (32/35) \* 100%  = 91.43% | Very Good |
| Number of Tests:  Error tolerance is the attribute of the software that provides continuity of operation under monomial conditions. There are 32 types of test that the team conducted in the application including all possible scenarios that would result to system error and bugs. It includes test in the software development, hardware development, platform, and plugins.  Operational Function Test:  The operational function test is the overall number of function test in the application which is operational and workable that results in providing continuity of operation under several tests and got the total number of 35 operational function tests. | | |
| Accuracy | Function Test Result  Accuracy =---------------------------------------x 100%  Function Expected Result | Accuracy  = (38/ 40) \* 100%  = 95% | Very Good |
| Function Test Value:  Accuracy is attributes of the software that provide the required precision in calculation and outputs. This application has a total of 38 functions that are considered functional including all modules and features, interfaces, and sections in the game like the exit, restart, resume, next, previous, back, and different buttons functions.  Function Expected Value:  This application has a total of 40 functions including all modules, features, interfaces, and sections in the game like the exit, restart, resume, next, previous, back, and different buttons functions. | | |
| Consistency | Numbers of Errors  Consistency = 1 - --------------------------x 100%  Lines of Code | Consistency  = (1-(120 / 188,683)) \* 100%  = 99.9% | Very Good |
| Numbers of Errors:  Plugins malfunction, data not displaying from the database, 3D model incompatibility and user interface malfunction are some of the errors encountered while developing the system.  The number of errors found in the development is 120 and some of them are null parameters, code exceptions and break, values are out of bound, image inconsistencies, button size, choose of colors, audio, etc.  Lines of Code:  Total number lines of code of the whole application along with the plug-ins used = 188, 683 | | |
| Modularity | Number of reusable modules  Modularity = ---------------------------------x 100%  Total number of modules | Modularity  = (12 / 15) \* 100%  = 80% | Average |
| Number of Reusable Modules:  Aqua Hero has 12 modules which are reusable which consists of stages, level, facts, settings, shop, item, power-ups, waste effects, historical events, help, exit module, and bonus stage.  Total number of modules:  Aqua Hero has a total of 15 modules which consist of the stages, levels, facts, high score, settings, help, exit module, waste effects, historical events, credits, tutorial, shop, item, bonus stage, and power-ups. | | |
| Operability | Number of Functions  in which Users  Operability = 1- found to be Inconsistent \*100%  Number of Functions | Operability  = (1 - (5 / 80)) \* 100%  = 93.75% | Very Good |
| Number of Functions in which Users found to be Inconsistent:  150 total evaluation score – 145 evaluated score for consistency (refer to Appendix J) = 5  The number of functions in which users found to be inconsistent is 5 like the inconsistent button size and color, images of waste facts, and the tutorial function.  Number of Functions:  Aqua Hero has a total of 80 functions which includes search, displayImage, loadLevel, readText, and many more functions to mention. | | |
| Training | Number of Game Passers  Training = ------------------------------------x 100%  Total Evaluation Examinees | Training  = (28 / 30) \* 100%  = 93.33% | Very Good |
| Number of Evaluation Passers:  Out of the 30 respondents, 30 respondents claimed that the system is easy to use due to its interface simplicity. The number of evaluation passers is the players who had undergo tutorial and passed level 1 only. Out of 30 users there are 28 users who tried the tutorial and passed the level 1.  Total Evaluation Examinees:  The team conducted on 30 respondents to evaluate the system. | | |