Check-List

Senior Project

Assessment of Student Outcomes of the BS in Computer Science
of the
School of Computing and Information Sciences
Florida International University

The School of Computing and Information Sciences evaluates the Senior Projects of its graduating seniors for the purpose of assessing the level of attainment of the Student Outcomes of the BS in Computer Science program.

To assist the evaluators, the project team is asked to identify aspects of the project related to the various Student Outcomes. For each Student Outcome, a checklist of 4 typical project features related to the outcome is provided. There is no requirement or expectation that any particular feature must be present in your particular project. Nor is the checklist exhaustive. Please add to the lists any additional features of your project that relate to any of the Student Outcomes.

> For each checklist item represented in your project, please document where that item is evidenced in your project by noting the **deliverable** (*Feasibility Study, Requirements Specification, Design Document* or *Final Document*) and **section** or **page number**.

Your responses to this survey will be used solely for the purpose of assessing the Student Outcomes of the BS in Computer Science program of the School of Computing and Information Sciences at FIU. This survey is expressly NOT for assessment of student performance in the SCIS Senior Project course for assignment of letter grade, nor for assessment of the instructor(s).

Project Title: Performance Testing Tool

Semester & Year: Fall 2010

Moderator (Faculty / Industry Sponsor): Joseph Cutrono

Team Members: Analay Morejon

Luis Rodriguez

Elizabeth Rosado

Student Outcome _(a)_: _Demonstrate proficiency in the foundation areas of Computer Science including mathematics, discrete structures, logic and the theory of algorithms_

✔   Project utilizes some knowledge of mathematics

     Graph Values (See Deliverable 4 – Appendix B, page 88, Use case 11 Graph Test Results)

✔   Project utilizes some statistical techniques

     Calculate average (See Deliverable 4 – Appendix B, page 90, Use case 12 Calculate Actual Time Average)

✔   Project utilizes some elements of computational or mathematical logic

     Calculation of values (See Deliverable 4 – Appendix B, page 92, Use case 13 Calculate Performance Status)

____   Project utilizes some aspects of theoretical computer science (e.g. automata)

_____

Other _____

_____

Student Outcome (b): _Demonstrate proficiency in various areas of Computer Science including data structures and algorithms, concepts of programming languages and computer systems_

✔   Project demonstrates knowledge of data structures

     Yes, projects make uses of lists, trees and other collections. (See source code)

✔   Project demonstrates knowledge of algorithm development

     Yes, created custom algorithm named "Beat-it" to measure performance. (See Deliverable 4 – Algorithm Design pages 45 - 51).

✔   Project demonstrates knowledge of programming language concepts

     Project uses design patterns, use of declarative programming, inheritance, interfaces implementation, polymorphism, encapsulation, threads, overwriting and overloading methods, ETC (See source code)

✔ Project demonstrates knowledge of computer systems

Yes, application makes use of multiple systems to process/analyzes information. (See Deliverable 4, Chapter 5 - System Design pages 29 - 35)

Other _____

_____

Student Outcome *(c)*: *Demonstrate proficiency in problem solving and application of software engineering techniques*

✔   Project objectives are clearly specified and analyzed

        Yes, project provides use cases, specifications and analysis of system requirements (See Deliverable 2 Chapter 4 – Proposed System Requirements pages 14 – 22 and Appendix A – Use Cases pages 25 - 54)

✔   Project evidences consideration of design alternatives

        Yes. (See Deliverable 1, Chapter 2.4 – Alternative Solutions pages 11-16 and Chapter 2.5 Recommendations page 17)

✔   Project utilizes sound implementation techniques

        Yes, project makes use of Design and Software Patterns that provide a logical approach to implementation. (See Deliverable 4, Chapter 5 - System Design pages 29 – 35 and Chapter 6 – Detailed Design pages 36 - 57)

✔   There is evidence that the implementation was tested and/or evaluated

        Yes, project provides system validation (See Deliverable 4, Chapter 7 – System Validation pages 58-67 and Appendix G Documented Code for Test Drivers and Stubs pages 139 - 142)

Other   _____

      _____

Student Outcome *(d)*: *Demonstrate mastery of at least one modern programming language [and proficiency in at least one other]*

✔   Project was implemented using a modern programming language

        Yes, project makes use of latest technologies such as Silverlight 4, LINQ, and C# (Framework 4.0) (See source code)

✔   Project code is modular and/or reusable and is documented

        Yes, project code has low decoupling while high in cohesion and well documented. (See Deliverable 4, Chapter 5 - System Design pages 29 – 35 and Appendix F – Documented Class Interfaces page 119 - 138)

✔   Project code is reasonably efficient rather than "brute force"

Yes, there is evidence that code is efficient. (See Final Presentation slides 42,43)

✔   Project code is understandable and meets specifications

Yes. (See Deliverable 4, Appendix F – Documented Class Interfaces page 119 - 138)

Other _____

_____

<u>Student Outcome</u> *(e)*: *Demonstrate understanding of the social and ethical concerns of the practicing computer scientist*

✔   Project documents sources and references

        Yes. (See Deliverable 4, Chapter 9 – References page 70)

✔   Project identifies and addresses any relevant ethical issues

        Yes. (See Deliverable 4, Copyright And Trademarks page 2)

____   Project identifies and addresses any relevant social issues

_____

✔   Project documents anticipated impact on users/clients

        Yes. (See User's Guide, Troubleshooting)

Other   _____

_____

Student Outcome (f): *Demonstrate the ability to work cooperatively in teams*

✔   Project evidences equitable participation by team members

        Yes. (See Deliverable 4, Chapter 4 – Project Plan page 16)

____   Project team negotiated consensus and/or compromise

_____

✔   Project team set out and followed a schedule for timely completion

        Yes. (See Deliverable 1, Appendix A – Project Schedule page 23)

✔   Project team activity is documented

        Yes. (See Deliverable 4, Appendix H Diary of Meetings pages 143-162)

Other   _____

_____

Program Outcome _(g)_: _Demonstrate effective communication skills_

✔ Project presentations captured the essential features of the project

Yes. (See Presentations 1,2,3, and 4)

✔ Project artifacts communicate and/or project the project essentials

Yes. There is evidence of other artifacts in submitted files. These include: UML diagrams, UI mockups, screen shots, ETC

✔ Project reports are well organized and written

Yes. (See deliverables 1,2,3 and 4)

_____ Project presenters are able to communicate their ideas to a non-CS audience

Other _____

Program Outcome (j): _Have experience with contemporary environments and tools necessary for the practice of computing_

✔ Project utilizes contemporary design tools

Yes. For the project the team made use of tools such as: IBM Rational Rose, Microsoft Visual Studio, Microsoft Expression Blend 4, and Concept Draw Pro.

✔ Project implementation utilized a modern IDE

Yes. For project implementation the team made use of IDEs such as Microsoft Visual Studio 2010.

✔ Project utilized validation/testing tools

Yes. For the project the team made use of testing tools such as MbUnit, VPTag (Pairwise test case generator), NCOVER, Performance Testing Tool.

✔ Project was demonstrated using appropriate presentation aids

Yes. All presentation were created using Microsoft Power Point and presented on big screens using a projector.

Other _____

_____

Your further observations about of the BS in CS Student Outcomes **evidenced in this project** would be appreciated.