

BS-CS Program Outcomes Check-List (Spring 2012)

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.

Please complete once per project/team. Your responses to this survey will be used solely to assist evaluators in locating assessment indicators in the documentation of your project.

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: PANTHER QUICK RESPONSE SYSTEM (PQRS)

Semester & Year Spring 2012

Advisor (Faculty / Industry Sponsor): Professor Steven Luis

Team: Alina Gayazova
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Student Outcome (a): Demonstrate proficiency in the foundation areas of Computer Science including discrete structures, logic and the theory of algorithms

Discrete Mathematics

- Does the project incorporate elements of mathematical reasoning or proof?
E.g. Theorem, Mathematical Induction, Propositional Logic, First Order Logic

Mathematical Reasoning / Proof	Deliverable	Page#
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- Does the project utilize other elements of discrete mathematics?
E.g. Set Theory, Boolean Algebras, Combinatorics, Graph Theory

Discrete Math	Deliverable	Page#
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Probability & Statistics

- Does the project utilize some statistical procedure(s) to represent or summarize test data?
E.g. Mean & Standard Deviation, Stem Plot/Histogram, Box Plot/Percentile-Graph

Data Summary	Deliverable	Page#
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- Does the project utilize some statistical measure(s) of system behavior or performance?
E.g. Probability Distributions, Confidence Intervals, Hypothesis Testing

Statistical Measure	Deliverable	Page#
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Theory of Algorithms

- Does the project utilize finite state diagrams to model system behavior?

<u>Represents two use cases</u>	<u>4</u>	<u>36</u>
Finite State Machine	Deliverable	Page#

- Does the project utilize some aspect(s) of formal computer science?
E.g. Automata, Turing Machines, Recursive Function Theory, Recursive Unsolvability

Automata, etc.	Deliverable	Page#
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Student Outcome (b): Demonstrate proficiency in various areas of Computer Science including data structures and algorithms, concepts of programming languages and computer systems.

Data Structures & Algorithms

- Does the project utilize an advanced data structure, e.g. search tree, hash table, priority queue?

_____	_____	_____
Data Structure	Deliverable	Page#

- Does the project utilize some graph algorithm, e.g. shortest path, minimum spanning tree?

_____	_____	_____
Algorithm	Deliverable	Page#

- Does the project implement some other (non-trivial) algorithm?

_____	_____	_____
Algorithm	Deliverable	Page#

- Does the project analyze run-time complexity of any algorithms?

<u>QR Code Encoding Algorithm</u>	<u>4</u>	<u>37</u>
Algorithm	Deliverable	Page#

Concepts of Programming Languages

- Does the project utilize knowledge of programming language syntax/parsing?
E.g. Context-Free Grammars, Parse Trees, Recursive Descent

_____	_____	_____
Syntax/Parsing	Deliverable	Page#

- Does the project utilize knowledge of programming language semantics?
E.g. Natural Semantics, Interpreters, Expressions, L- and R- Value

_____	_____	_____
Semantics	Deliverable	Page#

- Does the project utilize knowledge of design issues such as scoping rules, type checking?

_____	_____	_____
Design Issues	Deliverable	Page#

Computer Systems (Operating Systems)

- Does the project utilize knowledge of memory management techniques?

<u>Memory Management</u>	<u>Deliverable</u>	<u>Page#</u>
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- Does the project utilize knowledge of process synchronization?

<u>Process Synchronization</u>	<u>Deliverable</u>	<u>Page#</u>
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- Does the project utilize knowledge of distributed processing?

<u>Distributed Processing</u>	<u>Deliverable</u>	<u>Page#</u>
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- Does the project utilize knowledge of device management?

<u>Device Management</u>	<u>Deliverable</u>	<u>Page#</u>
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Computer Systems (Database Systems)

- Does the project utilize knowledge of information storage and/or retrieval?

<u>Remote API, database, and server content</u>	<u>3</u>	<u>12-20</u>
Information Management	Deliverable	Page#

- Does the project utilize conceptual or relational database schema?

<u>MySQL RDMS</u>	<u>3</u>	<u>13-14</u>
Schema	Deliverable	Page#

- Does the project utilize a database query language, e.g. SQL?

<u>SQL through Rails</u>	<u>4</u>	<u>99</u>
Query Language	Deliverable	Page#

Student Outcome (e): Demonstrate understanding of the social and ethical concerns of the practicing computer scientist

- Where does the project document license/copyright, sources/references?

3	2	4	2
_____	_____	_____	_____
Deliverable	Page#	Deliverable	Page#

- Where does the project identify and address any relevant social issues?

_____	_____	_____	_____
Deliverable	Page#	Deliverable	Page#

- Where does the project identify and address any relevant ethical issues?

_____	_____	_____	_____
Deliverable	Page#	Deliverable	Page#

- Where does the project identify and address any relevant legal issues?

_____	_____	_____	_____
Deliverable	Page#	Deliverable	Page#

- Where does the project identify and address any relevant privacy issues?

_____	_____	_____	_____
Deliverable	Page#	Deliverable	Page#

- Where does the project document any anticipated impact on users/clients?

_____	_____	_____	_____
Deliverable	Page#	Deliverable	Page#

- Where does the project document any anticipated technology impact issues?

_____	_____	_____	_____
Deliverable	Page#	Deliverable	Page#

Program Outcome (h): Have experience with contemporary environments and tools necessary for the practice of computing

To be completed by the team. List the tools and IDE's that you used at any stage of your project
Competency Rating Scale 5: Expert, 4: Advanced, 3: Competent, 2: Intermediate, 1: Novice

Presentation Aids (MS PowerPoint, Adobe Acrobat, etc.)

<u>Domain</u>	<u>Software / Tool</u>	<u>Competency</u>
Presentation	MS PowerPoint	5
Demonstration	MS PowerPoint	5

Document Preparation (MS Word, MS Visio, LaTeX, UMLet, etc.)

<u>Domain</u>	<u>Software / Tool</u>	<u>Competency</u>
Document Editing	MS Word	5
Diagramming	StarUML, MS Visio	4

Programming Languages & IDE's (Java, C, C++, C#, SQL, PhP)

<u>Domain</u>	<u>Software / Tool</u>	<u>Competency</u>
Programming Language	Java, C, SQL, Ruby on Rails, Objective C	5
IDE or OS	Netbeans, CentOS, Linux, Windows, Xcode	5

Project Management (MS Project, AtTask, version control tools, etc.)

<u>Domain</u>	<u>Software / Tool</u>	<u>Competency</u>
Project Management	MS Project, Git, SVN	4

Modeling (StarUML, Rational Rose, etc.)

<u>Domain</u>	<u>Software / Tool</u>	<u>Competency</u>
UML Modeling	StarUML	4

Database Management (MS Access, Oracle RDBMS, Apache Cassandra, etc.)

<u>Domain</u>	<u>Software / Tool</u>	<u>Competency</u>
DBMS	MS SQL, MySQL,	5

Web Servers (Apache Tomcat, Windows server, etc.)

<u>Domain</u>	<u>Software / Tool</u>	<u>Competency</u>
Web Server	Apache Tomcat, WEBrick	4

Software Testing Tools (JUnit, Cobertura, etc.)

<u>Domain</u>	<u>Software / Tool</u>	<u>Competency</u>
Testing	JUnit, Cobertura, Instruments, Rspec, Rcov	5

Other:

<u>Domain</u>	<u>Software / Tool</u>	<u>Competency</u>