CSC 301: INTRODUCTION TO SOFTWARE ENGINEERING

SPRINT 2 (FINAL SUBMISSION) GRADING RUBRIC

The assignment is graded out of 100. Final scores are rounded to the nearest whole point.

Method of score computation:

For each element a rating is assigned based on the rubric. Each rating has an associated point value: Excellent 100, Good 75, Adequate 65, Marginal 50, and Inadequate 0.

The scores for the elements are combined according to their respective weights to reach a score for that assignment part (out of 100).

The scores for the assignment parts are combined according to their respective weights to reach an overall score for the assignment (out of 100). The assignment grade is that overall score rounded to the nearest point.

PART 1: PROCESS [45% OF TOTAL]

SPRINT BACKLOG (SPRINT PLANNING) [15% OF PART]

Excellent	Good	Adequate	Marginal	Inadequate
-User stories that have been broken down into tasks for this sprint are clearly indicated -Tasks incorporate all required work -Tasks are of suitable size -Tasks estimated and tasks estimates are reasonable and consistent relative to other tasks -Task estimates in hours -Sprint planning meeting well-documented in the meeting minutes	-User stories that have been broken down into tasks for this sprint are clearly indicated -Tasks incorporate all required work -Tasks are of reasonable size, but could be further decomposed -Tasks estimated and tasks estimates are reasonable and largely consistent relative to other tasks -Task estimates in hours -Sprint planning meeting documented in the meeting minutes	-User stories that have been broken down into tasks for this sprint are indicated or can be inferred from context -Tasks cover most required work -Tasks may span more than a few days work -Tasks would benefit from further decomposition -Tasks estimated and tasks estimates are generally reasonable -Task estimates in hours -Sprint planning meeting documented in meeting meetings	-Tasks relate to user stories, but the correspondence between may not be clear -Tasks cover only some required work -Tasks may be excessively coarse -Tasks estimates are provided but may be unreasonably or inconsistent with other tasks -Task estimated are provided but may not be in hours -Documentation of sprint planning meeting may be lacking	-Little evidence of proper task construction -Task estimates may not be provided -Tasks if present may be highly coarse

SCRUM BOARD [25% OF PART]

Excellent	Good	Adequate	Marginal	Inadequate
-Scrum board consistently used to track and monitor tasks/stories -Scrum board assigns all tasks to group members	-Scrum board usually used to track and monitor tasks/stories-Scrum board assigns most tasks to group members	-Scrum board sometimes used to track and monitor tasks/stories -Scrum board assigns some tasks to group members	-Scrum board rarely used to track and monitor tasks/stories -Tasks often not assigned to specified group members	-Scrum board not used to track and monitor tasks/stories

BURN DOWN CHART [20% OF PART]

Excellent	Good	Adequate	Marginal	Inadequate
-Chart includes planned work and actual work, each clearly labelled -All axes labelled and scale uses appropriate units and units are clearly indicated -Chart is professionally presented and easy to interpret -Estimated and actual velocity calculated	-Chart shows planned work and actual work, however labelling may be unclear -Axes may be missing labels -Scale uses appropriate units; units are indicated or may be inferred from context -May be some minor issues with chart readability or presentation -Estimated and actual velocity calculated	-Chart shows planned work and actual work which may be distinguished from context, but are unlabelled -Axes may be missing labels -Scale may have some issues with interpretability -May be issues with chart readability or presentation -Estimated and actual velocity, but one or both may have a computation issue	-Planned work and/or actual work series are not clearly distinguished; one or more series may be missing entirely -Axes may be missing labels -Scales may not be indicated or are marked incorrectly -Chart has significant issues with readability or presentation -One or both of estimated and actual velocity may be omitted	-Burn down chart is not produced or fails to include required elements -Chart has issues with readability or presentation that cause it to be difficult or impossible to interpret

SPECIFICATION FOR NEXT SPRINT [15% OF PART]

Excellent	Good	Adequate	Marginal	Inadequate
-User stories for next sprint identified; selection is clearly justified -An ordering is provided over the selected stories or there is a contingency plan that explains how stories taking more or less time than expected will be addressed -Success metrics for next milestone identified; goals are specific, measurable, achievable and realistic -Plan is clearly explained to a high standard -Specification is of appropriate length and is well-written	-User stories for next sprint identified; selection is largely justified -At least some suggestion of a contingency plan for over/under estimation or there is a clear global ordering of user stories (including those not allocated to this sprint) -Success metrics for next milestone identified; most goals are largely all specific, measurable, achievable and realistic -Plan is comprehensible -Specification is of appropriate length -Any writing issues are minor and largely mechanical	-User stories for next sprint identified; justification may be somewhat lacking -Contingency plan for over/under estimation may be lacking and not saved by a clear ordering of user stories -Plan is understandable with some effort; however some gaps may exist in the explanations -Success metrics for next milestone identified; however those goals may not be specific, measurable, achievable and realistic -Specification may be somewhat brief / overly long -May have some issues with writing	-User stories allocated to next sprint, but there is no/deficient justification -Contingency plan for over/under estimation may be lacking and not saved by a clear ordering of user stories -Plan is poorly explained and may be confusing to a reviewer -Writing may suffer from issues that impair comprehensibility	-Plan is inappropriate or not evident -May have significant writing issues the severely impair comprehensibility

RELEASE PLANNING [15% OF PART]

Excellent	Good	Adequate	Marginal	Inadequate
-User stories allocated to both Sprint 2 and later sprints -Clear justification provided as to how stories were allocated between sprints	-User stories allocated to both Sprint 2 and later sprints -Some justification provided as to how stories were allocated between sprints	-User stories allocated to both Sprint 2 and later sprints, however later sprints allocation may only be evident from comparing user story backlog to Sprint 2 plans -Allocation of stories between sprints may not be clearly justified	-User stories allocated to only to Sprint 2	-User stories allocated to only to Sprint 2 -May be no or insufficient evidence of consideration of work to be completed in later sprints

SPRINT REVIEW [10% OF PART]

Excellent	Good	Adequate	Marginal	Inadequate
-Sprint Review includes 3-5 successes and 3-5 points for improvement -Comments are insightful -Points for improvement include a plan not just a problem	-Sprint Review includes 3-5 successes and 3-5 points for improvement -Comments show some insight but may overlook points apparent from other artifacts -All points for improvement are actionable, but some may not include an action plan	-Sprint Review includes 3-5 successes and 3-5 points for improvement -Comments show some insight but may overlook points apparent from other artifacts -Most points for improvement are actionable, but some may not include an action plan -May have some issues with writing	-Sprint Review has success and points for improvement, but lacks 3-5 of each -Comments lack insight / awareness -Points for improvement may not be actionable -Writing may suffer from issues that impair comprehensibility	-Not present or severely lacking in detail -May have significant writing issues the severely impair comprehensibility

TESTS [40% OF PART]

The appropriate table will be used for automation test and manual test. In the case of a mix both, an overall testing rating is assigned by considering both the automation and manual test tables. In addition, regardless of the method of testing, testing process will <u>always</u> be considered.

Testing process

Excellent	Good	Adequate	Marginal	Inadequate
-Tests provided for all user stories and the correspondence between tests to user stories is clearly delineated in the tests / test plans directly or in external documentation -Automated testing is favoured; use of manual testing is limited to scenarios difficult (from an engineering perspective) to automate and justification for the decision to manual test those scenarios is provided	-Tests provided for all user stories and the correspondence between tests to user stories is clearly delineated in the tests / test plans directly or in external documentation -Automated testing is generally favoured, use of manual testing is largely limited to scenarios difficult (from an engineering perspective) to automate, however use of manual testing is not fully justified	-Tests provided for all user stories however the correspondence between tests and user stories is not clearly outlined in either the tests or external documentation -While some tests may be automated, manual testing is broadly employed even in scenarios technically amenable (from an engineering perspective) to automation	-Tests provided for most user stories -Correspondence between tests and user stories may be unclear -While some tests may be automated, manual testing is broadly employed even in scenarios technically amenable (from an engineering perspective) to automation	-Tests not provided for many user stories

Automation Test

Excellent	Good	Adequate	Marginal	Inadequate
-Demonstrates a mastery of unit and integration testing -Uses a test suite -All methods and classes covered -Integration tests are included for all related components -Complete positive and negative tests cases for all methods present -Boundary conditions considered and checked -Tests include all input conditions and return values -Tests include those for errors and exceptions	-Demonstrates skill with unit and integration testing -Uses a test suite -All methods and classes are covered with rare exceptions -Integration tests are included for most related components -Positive and negative tests cases for all methods present -Tests case sets or boundary condition testing be inconsistent -Tests include most input conditions and return values -Some error conditions may be untested	-Demonstrates an understanding of unit and integration testing concepts -Uses a test suite -Most methods and classes are covered -Integration tests are included for some related components -Some positive and negative tests case sets may be lacking -Boundary conditions often remain untested -Tests include some input conditions and return values -Error testing is lacking	-Demonstrates some familiarity with unit and integration testing concepts -Uses a test suite -Numerous methods may remain and classes untested -Little or no integration testing -Tests fail to address many scenarios and boundary conditions -Only basic input conditions and return values tested -No testing for errors	-Unit and integration tests added are inadequate; numerous expected tests are omitted -No test suite -Tests are very sparse -Expected results may be invalid or incorrect -No demonstration of a clear strategy for testing

Manual Test

Excellent	Good	Adequate	Marginal	Inadequate
-Demonstrates a mastery of thorough manual testing -Uses a written test plan that thoroughly explains all steps and expected results at each stage -Complete positive and negative tests cases for all user interface -Tests include all input conditions and expected results -Tests include those for error conditions	-Demonstrates skill with thorough manual testing -Uses a written test plan that includes all steps and most expected results -Positive and negative tests cases for all user interface -Tests include most input conditions and expected results -Some error conditions may be untested	-Demonstrates an understanding of thorough manual testing concepts -Uses a written test plan that includes all steps; may omit some expected results at interim stages -Most methods and classes are covered -Some positive and negative tests case sets may be lacking -Tests include some input conditions and expected results -Error testing is lacking	-Demonstrates some familiarity with thorough manual testing concepts -Uses a written test plan -Numerous methods may remain and classes untested -Only basic input conditions and expected results tested -No testing for errors	-Thorough manual tests added are inadequate; numerous expected tests are omitted -No written test plan -Tests are very sparse -Expected results may be invalid or incorrect -No demonstration of a clear strategy for testing

IMPLEMENTATION: DESIGN [20% OF PART]

Excellent	Good	Adequate	Marginal	Inadequate
-Evidences a mastery software design -Design is highly flexible / adaptable -Excellent application of appropriate design patterns throughout added code -Design is easily understood from code and external documentation and is explained to a high standard – developer notes, diagrams, and documented as used to a high standard	-Evidences facility with software design -Design is clear and appropriate to the problem -Design patterns are applied variously throughout the code -Design is comprehensible from code and external documentation – developer notes, diagrams, and documented used as appropriate	-Evidences an understanding of software design -Design is serviceable for the problem given -Would benefit for greater application of standard design patterns or other indicia of a flexible design -Design is understandable with some effort; external documentation may be lacking	-Evidences some familiarity with software design practice -Design is inflexible -May be some evidence of "anti-patterns" within the code -Design is poorly explained and may be confusing to a reviewer	-Little evidence of even superficial understanding of software design -Design is inappropriate or not evident; haphazard implementation

IMPLEMENTATION: CODING [25% OF PART]

Excellent	Good	Adequate	Marginal	Inadequate
-Evidences a mastery of "best practices" for software implementation -All required functionality included -Code changes highly targeted -Highly adaptable coding techniques; use of implementation techniques that facilitate future changes and maintenance -Variable and method names are clear and descriptive -Comments are frequent and clear and relate to code structure / function (e.g. "populate the look-up table") rather than paraphrasing the code (e.g. "increment the counter") -Indenting is consistent across the code base -Code is clear and highly readable -Evidence code was written by all group members	-Evidences facility with general standards of software implementation practices -All required functionality included -Code changes largely isolated to appropriate components -Code does not present significant barriers to future changes or maintenance; code allows for easy replacement of more specialized portions of implementation -Variable and method names are clear and descriptive -Comments are clear -Indenting is consistent within each source file, but there may be some variation from file-to-file -Code does not exhibit any significant readability issues -Evidence code was written by all group members	-Evidences an understanding of good software implementation -Most required functionality included, however some edge or error cases unhandled -May be some code changes that evidence unnecessary reengineering -Code may present some barriers to future changes or maintenance -Some variable or method names may be unclear but their meaning can be inferred from context -Commenting is sparse; may be limited to general description of method function -Indenting is consistent within each source file, but there may be some variation from file-to-file -May employ "tricky" coding techniques that serve to limit readability -Evidence code was written by all group members	-Evidences some familiarity with good software implementation practice -Core required functionality implemented -Code changes are made across the codebase, not limited to components that required modification to implement the user story -Examples of hard-coded functionality that should have been parameterized based on input or values stored in secondary storage -Variable or method names are unclear, but meaning may be inferred from context -Comments may be misleading or serve only to paraphrase the code -Indenting is missing or highly inconsistent even with the same source file -May employ highly obtuse coding style such as idiomatic use of side effects -Code was NOT written by all group members	-Little evidence of even superficial understanding of software implementation best practice -Significant required functionality omitted -Variable or method names are poorly chosen and may be misleading -Comments, when present, may be misleading or unhelpful -Source code may show evidence of a lack of understanding of proper code formatting -Code was written by only one or two group members

STORYBOARD FOR USER INTERACTION [10% OF PART]

Excellent	Good	Adequate	Marginal	Inadequate
-Screenshots / navigation descriptions clearly document the entirety of the current product UI -What the user is allowed/not allowed to do is clearly documented -Storyboards used expertly to augment navigation descriptions, as appropriate	-Screenshots / navigation descriptions document the entirety of the current product UI -What the user is allowed/not allowed to do is documented -Storyboards used with facility to augment navigation descriptions, as appropriate	-Screenshots / navigation descriptions document the entirety of the current product UI, but some minor omissions may be apparent -What the user is allowed/not allowed to do is documented, but some minor omissions may be apparent -Storyboards used appropriately to augment navigation descriptions, as appropriate	-Screenshots / navigation descriptions document the entirety of the current product UI, but clear omissions are apparent -What the user is allowed/not allowed to do is documented, but clear omissions are apparent -Storyboards may be used to augment navigation descriptions, but could be better applied or were omitted when clearly they would improve the description.	-Screenshots / navigation descriptions are omitted or are highly deficient

UPDATED DESIGN AND TECHNOLOGY MANIFESTO [10% OF PART]

Excellent	Good	Adequate	Marginal	Inadequate
-Software structure, decomposition, data model and related elements of design are clearly explained to a high standard and decisions are explained and well-justified -Technologies (software tools, frameworks, APIs) used are clearly stated and decisions made about how to use them are well justified and reasoning is explained -Technologies are applied in a fashion suitable to the problem to be solved -Decisions are clearly justified and reasoning is explained to a high standard -Decision making process is well documented -Manifesto is of appropriate length and is well-written	-Software structure, decomposition, data model and related elements of design are clearly explained to a high standard and decisions are explained and justified, though some justification may be lacking -Technologies used are clearly stated and decisions regarding use of same are explained -Technologies are applied in a fashion suitable to the problem to be solved -Manifesto is of appropriate length -Decisions and the process to arrive at them are comprehensible and justified -Any writing issues are minor and largely mechanical	-Software structure, decomposition, data model and related elements of design are explained -Technologies used are stated and decisions regarding use of same are explained -Technologies are applied to address the problem to be solved, however readily available superior alternatives approaches could have been discovered with a minimum of research / effort -Decisions are understandable with some effort; however some gaps may exist in the explanations -Manifesto may be somewhat brief / overly long -May have some issues with writing	Software structure, decomposition, data model and related elements of design are explained but the explanation is incomplete -Technologies used are stated but decisions about how to use them may require further detail regarding reasons -Technologies selected are applied in a way that addresses the problem to be solved only tangentially -Decisions are poorly justified and reasoning is explained and may be confusing to a reviewer -Writing may suffer from issues that impair comprehensibility	Software structure, decomposition, data model and related elements of design are not explained to an adequate level -Implementation technologies are not identified or are applied to the problem in a way that, to a person of ordinary skill, is clearly inappropriate for the problem -Decisions made are inappropriate or not evident -May have significant writing issues the severely impair comprehensibility

PART 3: DEMONSTRATION [10% OF TOTAL]

PRESENTATION [40% OF PART]

Excellent	Good	Adequate	Marginal	Inadequate
-A superior presentation of the material -Multiple group members presented and those transitions were well chosen -Presenters were extremely clear -Presenters were confident and engaging; may have showed signs of adapting to their audience -High effective use of techniques for engagement (eye contact, humour, varying voice, etc.) -Use of pause words ('umm', 'ahhs', etc.) was rare or only for dramatic effect -Presentation delivered; not read from a script -Clear evidence of preparation; clear evidence of a presentation plan -Time managed well, presentation completed within allowed time -Presentation extremely well-paced; gaps or uneven pacing avoided	-A competent presentation of the material -Multiple group members presented -Presentations were clear and stumbled only occasionally if at all -Use of pause words was only occasional -Effective use of techniques for engagement -Presentation delivered; not read from a script -Evidence of preparation; evidence of a presentation plan -Time managed well, presentation completed within allowed time -Pacing was reasonable; gaps or unevenness were only occasional	-A serviceable presentation of the material -Multiple group members presented, however those duties may be unevenly shared -Presenters were usually clear and understandable but may have stumbled -Use of pause words was only occasional -Some attempt at using techniques for engagement; however, may have be sparse or ineffective -Presenters may have occasionally been "reading a script" -May be some minor presentation time management issue; e.g. presentation running 1-3 minutes over time in order to complete -Pacing was acceptable; presentation may have suffered from occasional gaps or evenness -Additional preparation could have aided in a clearer presentation	-A passable presentation of the material -May have only one group member presenting -Presenters may have been unclear or difficult to understand -Presenters may have been clearly "reading a script" -May have been significant use of pause words, possibly to the point of distraction -Presenters lacked confidence -May be evidence of minimal preparation -Presentation may have run out of time / would have had to run many minutes over time in order to finish -Pacing issues were pronounced; may include gaps or unevenness -If multiple presenters, may have been duplication of content between presenters	-A deficient presentation of the material -Presenters were so unclear that communication of content was severely inhibited -Clear evidence of lack of preparation

CONTENT [40% OF PART]

Excellent	Good	Adequate	Marginal	Inadequate
-Presentation explored the full breadth of product features with an appropriate scenario used to shape overall presentation -Presentation had a clear introduction, conclusion -Presentation had a clear message related to the scenario -No product problems encountered	-Presentation explored most product features -Presentation had a clear introduction, conclusion -Any product problems encountered by the presenter were minor and were handled appropriately	-Presentation explored most key features -Presentation may have been missing one of introduction or conclusion -Any product problems encountered by the presenter were handled, but may have caused the presentation to stumble somewhat	-Presentation explored new product features, but there may have been significant / obvious omissions -Presentation structure was difficult to discern -Product may have displayed significantly quality problems; e.g. bugs that required multiple tries to demonstrate an aspect or skipping demonstration elements	-Presentation addressed only a few product features, most found in the original "code drop" from the instructor -Presentation lacked any clear structure -Product failed to function correctly or encountered major bugs that significantly impaired presentation

QUESTION RESPONSES [20% OF PART]

Grader should prompt with 2-3 questions.
- Questions should force students to justify one or more decisions made with respect to the design of their product.
- At least one follow-up question should challenge the response to an early question and demand additional justification or explanation of why the design choice was superior to a reasonably apparent design alternative

Excellent	Good	Adequate	Marginal	Inadequate
-Superior responses -Responses were cogent and well-reasoned -Appropriate techniques (e.g. questions to grader, clarifying pros/cons of the alternative posed, other techniques for soliciting agreement, etc.) used to convince in responding to challenge question	-Competent responses -Responses were clear -Response to the challenge question was appropriate, though may not have been entirely convincing	-Satisfactory responses -Responses on point to question, but may have been incomplete in some regards -Response to challenge question was sufficient, but may have been confrontational	-Poor responses -Question may have been answered only in part -May have significant prompting from grader to adduce a complete response	-Deficient response -Evidence of avoiding the question, or not answering the question posed, even with follow-up