Code Inspection

Design Inspection

Unit Testing Log

Team 15

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Design Inspection

Product	Advanced Submission System		
Date	02/09/2017		
Author	Development team		
Moderator			
Inspectors			
Recorder	Krutarth Rao, Anthony Goeckner, Saurav Khanna		
Defect #	Description	Severity	How Corrected
1	Course naming is not enforced to be the official course name. Instructors have the option to name directories as they wish and an error/typo can result in confusion during submission from the student's prospective.	2	Instructors will be reminded of course naming convention in the course creation dialog. [Yet to be implemented]
2	Course & Global configuration files have not been protected from modification by the instructors which could result in the instructor corrupting the configuration file in the event they are not conversant with the formatting.	3	Provide the instructors a README/help portal guiding them on how to edit a configuration file.
3	The program is implemented in Python and requires libraries that are not found on Linux/Unix systems by default. This could require a lengthy setup stage for implementing the system on a large number of machines.	3	The project considers that all machines in a network can be controlled by the network admin and libraries can be installed as needed.
4	There is no protection from the instructor accidently deleting the submission directory and losing the submitted work.	1	Implement a read only restriction/ warning message when the instructor attempts to run "rm" or similar commands on the submission directory.
5	The system doesn't allow students to submit directories larger than a fixed limit in size (5Mb currently). This could be an issue for students using the submission system for graphic/video editing courses or	2	If project owner requires the feature, allow the instructor to set a flag that allows students to submit folders of arbitrary size.

	similar courses where files tend to be large.		
6	The Submission Interface is designed using some fixed-size elements. This means that the Submission Interface has a minimum allowable size.	3	Warn the user if the terminal size is too small to display the interface properly, and make as many elements dynamically sized as possible.
7	Some users could be unaware or confused about how to navigate between the different panels in the Student and Instructor Interfaces.	3	Added a subtle hint in the bottom of the UIs to show users how to navigate the interface.
8	Some selection panels allow users to select multiple options (such as the submission interface allowing multiple files), but some only allow the selection of one (such as the instructor interface only allowing one student to be graded at a time). However, both these selection panels had the same design for indicating which file(s) are currently selected.	3	If only one selection is permitted, the interface displays options conventionally by emulating radio buttons with regular parenthesis, "( )". A similar concept was followed for multiple selections, where a multiple-choice list was emulated with square parenthesis, "[ ]".

Code Inspection

Code inspection revealed the following defects:

Product	Advanced Submission System		
Date	02/09/2017		
Author	Development team		
Defect #	Description	Severity	How Corrected
1	Methods returning "true" instead of True in configuration manager. Error in syntax not caught by Python.	3	All Boolean return statements corrected
2	Possible to enter character string instead of numbers in configuration manager for late days field.	2	Integer check added
3	Methods returned "true" or "false" instead of the correct syntax for Boolean values in course manager. Error in syntax caught by python	3	All Boolean return statements corrected

4	Methods and other lines of code not indented correctly. Syntax error caught by python	3	All indentation errors were corrected

Unit Testing Report

The system relies on the following modules:

- Configuration Manager
- Submission Manager
- Instructor Interface
- Student Grade Interface
- Assignment Submission Interface
- Interface components (Buttons, Input Manager, etc.)
- Course management module
- Permissions module

Configuration Manager

Configuration manager is the backend module responsible of encapsulating the modification of configuration files that the program uses to keep track of courses, directories, due dates etc. The configuration file management module is tested through an in-place main method in *ConfigurationManager.py*. The method conducts the following tests in an automated test run:

Product	**Advanced Submission System**		
Module	Configuration Manager		
Date	02/09/2017		
Author	Krutarth Rao		
Defect #	Description	Severity	How Corrected
1	The course addition method for the global configuration file was also adding a course section to the individual course configuration file.	1	AddCourse() method was corrected to use only the global configuration file.

2	Course addition function was accepting invalid date formats without verifying the date is valid & in the future	2	Date validation code added.
3	Add course method allowed non-boolean values to be assigned to team project flag.	1	Boolean validity check added.
4	get_config method was returning null objects due to incorrect method structure. This resulted in run time errors during configuration file generation.	1	Method was replaced with object initialization code in relevant sections.
5	File path to the course configuration file was not added in the global file. This resulted in an inability to access course details during project selection.	2	The parameter passed in the method was added as a setting under the course section in the global configuration file.
6	removeCourse() method failed to catch an exception if the course did not exist in the global configuration file	1	Try-catch block added with relevant return statements

Interface Components

All interface components are tested using the "unittest" Python testing framework. Test files are located in the "test" folder at the root of the project repository. These interface components are used to build the multiple user interfaces that this project requires.

Product	Advanced Submission System		
Module	Button UI Widget		
Date	02/09/2017		
Author	Anthony Goeckner		
Defect #	Description	Severity	How Corrected
1	test_select_no_callback – When a Button that does not have a callback specified is selected, the program crashes.	2	Button class now raises a MissingCallback exception when callback is missing.
2	test_select_callback – When a callback is specified, Button::onInput does not return that callback's return value.	3	Button::onInput now returns the callback's return value

Product	Advanced Submission System		

Module	Picker UI Widget			
Date	02/09/2017			
Author	Anthony Goeckner			
Defect #	Description		Severity	How Corrected
1	test_select_max_gt_1 – The Picker.maxSelect field has no effect when set to a number greater than one.		3	The Picker class now limits the number of selections to maxSelect if maxSelect is greater than one.
2	test_deselect_max_gt_1 – Once 'maxSelect' number of items are selected when maxSelect is greater than one, items cannot be deselected.		2	Picker now ensures that items can always be deselected.

Product	**Advanced Submission System**			
Module	UI Input Manager System			
Date	02/09/2017			
Author	Anthony Goeckner			
Defect #	Description		Severity	How Corrected
1	test_select_invalid_* – Out-of-bounds values passed to InputManager::setSelectedIndex caused the program to crash.		2	An IndexError exception is now raised when trying to select an out-of-bounds option.
2	When multiple instances of InputManager are created, fields are inherited from the previous instance of InputManager.		1	InputManager fields are now specific to each instance of InputManager.

Submission Interface

The Submission Interface is the primary student-facing interface, which handles assignment submission. Students will use it to select a course and project, and then select the files (using a Picker UI component) to submit. The list of selected files will then be passed to the Submission Manager.

Product	**Advanced Submission System**

Module	Assignment Submission Interface		
Date	02/09/2017		
Author	Anthony Goeckner		
Defect #	Description	Severity	How Corrected
1	Resizing the terminal emulator while the submission interface is open causes the program to crash.	3	Not yet corrected. Correction will require the interface to be redrawn whenever the terminal is resized.
2	When running interface on remote machine via PuTTY SSH interface, UI elements do not display correctly.	2	Set the NCURSES_NO_UTF8_ACS environment variable in program initialization.

Instructor Interface

The Instructor Interface is the primary instructor-facing interface, which handles assignment grading. Instructors will use it to select a course and project, and then select a student (using a Picker UI component) to grade. The grading portion of this interface is still in progress, and is planned for Sprint 2.

Product	**Advanced Submission System**		
Module	Instructor Interface		
Date	02/09/2017		
Author	Saurav Khanna		
Defect #	Description	Severity	How Corrected
1	The instructor interface always pre-emptively selected the first course in the course listing, and showed all assignments for that course in the "Assignments" panel.	2	Now, a boolean variable is used to check when the interface is first opened, and subsequently will not automatically select a course. Upon fixing this, the "Assignments" panel is automatically blank upon launching the interface, and

			is thus functioning as expected.
2	The instructor could select multiple students in the "Students" panel when attempting to assign grades. This is a problem because the professor will get an interface to enter grades for only one particular student upon selecting them.	2	Corrected: maxSelect = 1. Now, the instructor will only be able to select one student. The multiple-choice listing design for this panel was also updated to a radio list.
3	Resizing the terminal emulator while the professor interface is open causes the program to become distorted and unreadable.	3	Not yet corrected. The correction will require the interface to be redrawn whenever the terminal is resized with the professor interface open.

Course Manager

The course manager is the backend module that is responsible for creating and deleting course and assignment directories. It also plays the role of communicating with the configuration manager module to ensure that all configuration files are properly made and updated.

Product	Advanced Submission System		
Module	Course Manger		
Date	02/09/2017		
Author	Harold Smith		
Defect #	Description	Severity	How Corrected
1	Python throws exceptions when trying to create a new folder in a directory that doesn't exist or if the user is trying to make a directory that already exists	1	Implemented a try catch statement to catch potential errors and return false if an error is caught
2	Configuration Manager will return false if the configuration file is not created	2	Put code to create a configuration file in createCourse and createAssignment functions
3	If a file path is not formatted correctly then the configuration file will be put in the same directory as the courseManager.py file	1	Not yet corrected, will require initial path for the course to be given correctly when a course is created

Submission Manager

The submission manager is a backend module that the submission interface interacts with to zip groups of files. Submission manager was tested by hand as well as in conjunction to other modules.

Product	Advanced Submission System		
Module	Submission Manager		
Date	02/09/2017		
Author	Max Molnar		
Defect #	Description	Severity	How Corrected

1	Python throws an exception if the file it is trying to zip does not exist	2	Wrote a try/catch statemnt
2	An incorrect try/catch meant sometimes only 1 file was zipped.	1	Rewrote the try/catch statement by removing a break
3	User was always flagged as attempting to submit to a class they were not a part of, even if they were in fact part of the class	1	Added a string before the group variable to comply with how they were named in the linux system.