Contribution Reports

Sean Coaker

For A2, I was tasked by the group to work on the profile and the menu section of our project where I was split into pairs with Rhys to complete them. I worked in-depth on the BST/BST Node class which affects the structure of profiles and the scores in the menu. This was sorted in such a way that the results would be ranked in order of completion time which would then affect the leaderboard system as well, which I also played a part in to accomplish. One of the biggest classes that I had to implement was the Inventory class. My goal was to make sure that all the items that can be acquired and used by the player are present and that each item is stored in a safe place and are consumed when the corresponding doors are used. The different types of keys, the special items that allows the player to walk over certain hazardous tiles and the tokens for their corresponding doors have been stored in a class when they are found by the player. In addition, I was also tasked to implement a save button that would allow the user currently playing the game to save their progress throughout the game. If the user saves mid-game, quits and reloads the save file, they will be able to continue where they left off with all items and tokens that they acquired previously to still be in possession of the player. I also produced a window class as well, which then display all the information above visually in a windowed form where some parts may have been hardcoded in for testing and other parts were implemented via Javafx. These are all the parts of the projects that I was assigned to complete individually. However, we split off into groups to get a lot more work done at a more productive level. In collaboration with Rhys, I was able to work on the leaderboards menu. The leaderboard will take in all the high scores of every profile that has played the game and store it in a descending ordered list with the highest scores at the top and the lowest scores at the bottom. These results would also be compared to other player accounts and their highscores as well. As a little extra bonus, the highest score attached to all the saved profiles would be highlighted at the top and given the accolade of Captain to fit the pirate theme that our game has implemented. I was also working with Rhys getting the Profiles to work, allowing users to set a username and a password when creating an account, a trivial login for already made accounts and also provided validation checks should information entered be incorrect or if a username already exists in the saved profiles. I also worked extensively with Rhys on the Map class to make it function with the most success and built a menu that allows users to select any level they want within the game, assuming that they have already completed that level or at least have reached that level. I had also some involvement with FXML files which I have implemented into the game to make sure that all classes that I worked on are fully functioning. I also worked with Rhys on managing the Main Menu properly, taking all the previous classes that he and I worked on together and displayed them in simple self-explanatory buttons that would direct a user to and from menus with ease and overall it provides a trivial simplistic menu to navigate which was the best route for us in the end regarding code and ease of use. As a final addition, I also had individual involvement with many of the other classes, applying my java knowledge wherever I could, helping the group that struggled on parts of the code or were struggling due to time constraints.

Jason Scaramuzza

When starting A2, I took on the responsibility of creating the enemy and player classes. I had to come up with an algorithm for each of these types as they would all have different movements and

commands. The player had to be purely implemented using keyboard controls based on what the input was. We also had to make sure that player conventions followed the map rules. Certain tiles, until a specific item was acquired, could not be crossed and if attempted, would cause the player to die and restart the ongoing level. The player would also need to be attached to an inventory class and provide the items that the player picked up, which would allow them to navigate the levels. Due to the 2D environment, the keyboard presses would have a specific set of code to them as the algorithms had affected the way the game played so I was involved in resolving those issues. In addition to Player, I had worked collectively with Jason to provide suitable algorithms for the four types of enemies and implemented code that was tested with a hardcoded map to show strengths in the code and any potential bugs/errors that may have occurred. In regards to the wall following enemy, we had to make sure that within the map, this type of enemy would always spawn next to a wall and will proceed to follow that wall around the map either in a clockwise or anti-clockwise direction depending on the map layout. I also made sure that should a door on the outside wall be opened by the player that the wall following enemy would follow the new open wall as well. This worked very well as it showed the wall following algorithm was highly successful and even applied a slight challenge to the player completing a level. The straight-line enemy was relatively simple to produce. Jason and I managed a simple algorithm that will make the enemy go straight across the map either horizontally or vertically and bounce off the walls in its path returning along the straight line that the algorithm had created. We also came up with some very hard thought through algorithms for the dumb and smart enemy and although those were a scale up in difficulty compared to the other two, we managed to implement them with great success and overall, I am really happy with the success of the algorithms. Upon getting closer to the deadlines, as my role was complete, I took it upon myself to go and assist others. I went on to help Bingchen create the file readers and test everything in the map that was provided from Michael which was also a great success. I had to test that every bit was functioning correctly as well, such as the goal being reached, the player death and of course the teleporters functioning efficiently. I was then also able to create the map to a 7x7 size around the player which we deemed collectively as a group to be large enough to show a large portion of the screen and still implement a shift in the screen when player moved in a given direction. Overall, I was happy with the work I provided and managed to efficiently create very well thought through logical processes for my moveable entities and provide very well documented code in the process.

Rhys Griffith

At the start of A2, I was tasked to work on the main starting application. I created a splash screen which held the game data within. The splash screen had a loading bar to load in the game after it was running and provided a version number to the bottom of the bar to show the different prototypes that I had worked on throughout the project. I did also create a splash screen for the player death which made the user unable to continue and instead reset the player after a few seconds to start the level again. Regarding the main login section, I produced a large portion of the FXML files which I shared implementation with Sean. We also collectively worked on the leaderboard, making sure that all the data was correct and that the order was displaying correctly. In conjunction, we also worked together on the login details and the menu buttons as well as the level select screen as well. I also made sure that the user would create a username and password, allow an option for new accounts to be made and of course verification to make sure no duplicate accounts were made and corrected any incorrect data in the login to allow users to get into the game with ease. One of the big involvements I had was to display the start-up application using different methods of coding from Java to CSS and was able to create the Message of the Day, which would randomise after a set time on the login screen which I am very pleased about. I had also

involvements with several other classes, aiding the group/pairs that needed support. I helped Sean focus on the Login Controller class making sure that it was at the highest functioning level. I also helped Jason and Sean create and finish a working map that would take in all the information provided which would all work when expected to which turned out to be a great success. Sean and I also produced the most amount of pushes into the repository and whenever code was pushed, we immediately began resolving any conflicts that occurred and collectively attached the whole game together from each individuals/pairs code that also came in as well. As an added effect, I also double checked that Javadoc was implemented in all classes and provided it for those where it was not at a suitable standard or wasn't present. I was also responsible in producing a video file and recording all the possible implementations making sure that everything was working, and all the requirements specified in the documentation file provided by my lecturer was shown and abided by. As a small bit of extra features, I provided music to the game to provide a sense of atmosphere and immersion in the game which generally suited the pirate theme we had for our game. In addition, as another extra feature I also fully finished of our Twitter class, which would showcase the highest score when the game was fully completed with help from Michael who set up the Twitter implementation at the start. Overall, I am happy with the contributions that I provided, and it made it much easier for me to help others get their roles fixed with little conflictions.

Bingchen Xie

After resolving roles for A2, I was assigned to design the level file reader. It was my job to make sure that the file reader was adequate and provided two corresponding classes to accompany them. I produced an LVProcessor class which would process the level files from Michael and then produced a LVTest class which would test these classes making sure everything worked in a hardcoded environment before it was pushed into the repository for the final project which Sean and Rhys had organised together. I had also made sure that I built these classes to the best of my ability. I used some Enum methods which I understood in-depth and was able to provide a working system for the rest of the group, explaining any controversial changes or confusions that may have cropped up. I was also responsible for linking the map class to the file reader allowing all the in-game maps to read the content that was being produced including the enemy and player classes from both Jason's sections and the items in the inventory class from Sean as well as the map files for Michael. The information was carried over very well and it worked to a high standard which I am heavily satisfied with. I also had involvements with two smaller classes, those being the key class and the token class. These along with the file readers would have all been taken into the map class, making sure that the player could interact with the items mentioned when it came to test the map and the actual game, which was a success. I also accompanied and assisted whoever needed extra help and explained in-depth how my classes worked so that everything could be combined in the final form. I also provided Javadoc to all classes that I was involved in and produced the HTML websites for them for the final submission according to the requirement form within the assignment criteria.

Michael Bramwell

In A2, I took on the role of secretary. I made sure that the group had all their individual tasks assigned and were performing them to a high standard. I also oversaw arranging meetups to discuss any conflictions within the group and to collectively witness the progress that the group was making. As the secretary, during these meetings, I made sure that I had the contribution breakdown sheet sorted, ready for everyone who attended the meeting to sign and submit before the deadline, making sure the coins are distributed amongst the group evenly if everyone performed well and removed and deducted coins should anyone underperform, which thankfully was not a problem I

had to resolve as overall the group had performed admirably and were always keen on providing improvements to the project which I am pleased about. I was also responsible for uploading and recording the minutes of each meeting making sure everyone had their tasks assigned and knew how to accomplish them. For the record, all members attended every meeting and on time which meant we could be productive to the highest degree without any drawbacks. Outside the secretary business, I had my own involvement in the project as well. I was responsible to produce the map files making sure that everything was present for video documentation and everything was tested beforehand to make it easier on Sean and Rhys when combining the project together as a whole. I had also tweaked around, working with Bingchen getting the file reader set up which allowed me then to attach the map files, so they were read properly which was completed. I had also focused on the Twitter feature undergoing all the legal aspects of setting up a Twitter account to publish highscores and create a system that would work effectively, which I provided to Rhys who implemented into the final project and now the Twitter function provides the necessary information upon completion of the game. Due to my experience with artistic drawing and sprite creations, the group agreed that I worked on the sprites making sure all possible entities were drawn, including hybrid sprites such as the Player on the finish line or a hazardous tile with the corresponding item in hand. I then gave this into Rhys who resized and scaled the sprites to fit in the map for the final project. Overall, I am happy with my involvement and produced information to the group using my secretary skills to make sure this project was a success.

Jason Smith

For A2, I was assigned to produce the algorithms along with Jason for the enemy and player classes. We were able to sketch out examples and ideas on how each of these would run and provide suitable code for them. The player class had to take in the inventory and know about hazardous tiles as well as enemy placement and movement. Each enemy also had their own algorithmic methods which we implemented and are fully functioning. While Jason focused on providing the code for the individual classes, I created the movable class which would collect code from all the movable entities and differentiated where code was different or shared and whenever it was shared, I would store it in the movable class. Example shared code would have been to store the positions of the classes or check valid moves were applicable from the map. Then before finishing up our section of the project attached to us by the secretary, we tested the algorithms and the movement in a hard coded map using Javafx which not only helped test the classes but further enhance my understanding of Javafx and how it work. We managed to then attach these to the final maps produced by Michael. We then also connected the sprites folder which Michael had drawn and applied each of the sprites to the following enemy types as well as the player. I then also made sure that each sprite for the other items was also taken into consideration and applied to their own drawings which also was granted by Michael. I also popped in to help the other groups whenever help was required and did my best to assure that the problems that people were getting were resolved and fully functioning before the final project push in the repository. Overall, I am happy with my contributions to the group and am pleased to see the final project thanks to the hard work of all the members.

Implementation Changes

One thing we often approached during the A2 coding section was differences between our initial design and the new implementation system. In most cases, this occurred when we simply had very little idea as to how to get something produced in the way we wanted to or it became too difficult to create in one way and had to rely on an easier representation which benefitted the whole group. One of the changes was the extra features. During the design stage, we took in every possible

consideration that was required from us by the criteria that needed implementing. However, coming into the game during the creation stage, we often found ourselves coming up with ideas that could further improve and expand upon the criteria. This way, we came up with new ideas to further improve functionality. The idea of a password and verification on the login was something the group thought was a necessity to the project and so we added it as a new bonus feature. However, although an important feature, we knew that most other rival groups would also produce something like this, so to increase our uniqueness in the project, our advanced extra feature was to provide a link to a Social Media account, being Twitter, to showcase the highscores after a game completion. An idea that we believed would be seldom seen in other groups and we wanted to provide that unique feature to our own project, one which we did not consider during the design. After receiving feedback for our designs, there were some decisions the group made that we felt needed altering in the implementation. We originally had planned many levels around ten or fifteen, but we felt this was to cumbersome to the project and we narrowed it down to a mere five. We felt this decision would be better to show off all data within the project to a high degree. Additionally, we had ideas to implement new enemy types as well for creativity but because of time constraints and the effectiveness of that enemy type we felt it would be too time consuming as we would need new algorithms and new sprites to be provided which would have exhausted a narrow time frame even more. Overall though, despite some changes to the original design, the implementation was relatively the same, only really considering changes to how the code would be written to allow easier coding work amongst the group and of course less conflictions within the code itself. The project however has kept its roots and is completed to a suitable standard that all members are pleased with.