Middlesex University London

SNAILSPACE

DELIVERABLE THIRD SPRINT AUDIT REPORT

CST4010 Software Development

Submitted to Dr. Carl Evans

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1. Introduction

This Third Sprint Audit Report represents a culminating effort of Group K's endeavor in CST4010 Software Development at Middlesex University, as of April 11, 2024. Our journey, characterized by its unique challenges and the team's resilience, has led us to a pivotal moment in the development of our game, "Snail Space". Sprint 3 has been about harnessing the insights from the concurrent feedback of the first two sprints and channeling them into a coherent and responsive development strategy. We have navigated the complexity of integrating a second player functionality and enhancing the game's interface, confronting technical difficulties while upholding our commitment to quality and collaborative growth. The following sections detail our reflections, actions, and progress, marking not only the achievements of this sprint but also setting the stage for future advancements in our software development journey.

2. Retrospective of sprint 2

As our team reflects on Sprint 2, we acknowledge that our journey was marked by a divergence from the planned route due to extenuating circumstances. Our submission for both Sprint 1 and Sprint 2 reports occurred concurrently, a unique situation that saw us receiving feedback for both sprints at the same time. Despite the critiques being similar for both reports, we have taken strides to ensure our continuous improvement.

During Sprint 1, we laid the groundwork for player interaction, albeit not to the full extent anticipated in the feedback. Our game initiated a deck of 52 cards, removed 25 to establish a grid, and allowed the player to interact with the game through the console, which was a significant step in the interactive aspect of the game. The game dynamically displayed the grid and cards in the player's hand, inviting the user to select a card's index for placement following the snailpath on grid. The computer’s moves, automated and randomly selected, maintained the game’s momentum. This mechanism, although simpler than initially planned, was critical in keeping our project on track amid challenging times.

Moving into Sprint 2, we built on our foundational work. We realigned our development goals not out of preference but necessity, utilizing the agility afforded by our chosen methodology. We fortified our scoring system, developed algorithms for detecting and calculating scores, and integrated a system to accumulate these scores throughout the game. We also automated the winner announcement, a clear step towards a fully functional game. Since our first sprint was a player vs computer placing card on the grid, our sprint 2 was based on it too. Even though the sprint 1 was not calculating the scores, in sprint 2 the focus was calculating scores and present all development in a GUI interface.

This advancement was a direct response to the critique of we got during the demo in our previous sprint, showcasing our team’s capacity for innovation and growth.

The challenges we faced sharpened our focus on the Agile principle of adaptability. We were reminded that the value of a plan lies not in its adherence but its ability to guide us

through change. Our experiences in Sprint 2 have deepened our understanding of this principle, which is now deeply ingrained in our approach.

As we pivot to Sprint 3, we are not just continuing our project; we are advancing with a clearer perspective, informed by the past and inspired for the future. Our strategy has been recalibrated, our commitment is unwavering, and we step into this next phase ready to employ the insights gained for the betterment of our project.

Sprint 2 was as much about adaptation and strategic problem-solving as it was about technical development. We learned that the journey of software development is non-linear, filled with learning opportunities at every twist and turn. These lessons will be our guide as we navigate through Sprint 3 and beyond, embracing the Agile spirit of continuous improvement and responsive change.

3. Sprint Goal

Gameplay mechanics for a dual-player experience and enhance the game's interactivity through a comprehensive GUI. Concurrently, focus on the UX of menu to game.

4. Updated Product Backlog

ID	Title	As a ...	I want to ...	So that ...	Priority	Sprint	Status	Story Points
1	Start game service	Administrator	Start the game application	The game play experience starts	Must	1	Done	1
2	Stop game service	Administrator	Stop the game application	The game play ends and I can use other computer resources	Must	1	Done	1
3	Greeting Message	Game service	Greet the player with welcome notice	Player feels good	Could	1	Done	1
4	Menu	Game service	Show the menu	The player can pick option from the menu	Could	1	Done	3
5	Input a nickname	Player	Input a nickname	Other players can refer to me by name	Could	1	Cancel	2
6	Create a 5x5 Grid	Game service	Make 5x5 grid where the game will be played	The player can place cards on it and play game	Must	1	Done	10
7	Sprial Way (SnailPath)	Game service	Place card on a specific place in the grid	Game is running in spiral way	Must	1	Done	8
8	Switch Turns	Game service	switch the turn in game	Each player place one card after the other player	Must	1	Done	2
9	Check legality of move	Game service	Check the legality of a player move	I can enforce the game movement rules	Must	2	Done	1
10	52 cards stack	Game service	initialize 52 cards according to standard cards	It could be used in the game	Must	1	Done	3
11	Shuffle cards	Game service	Shuffle the cards in random order	Players would have unique game expeirence every time.	Must	1	Done	2
12	Deal the cards	Game service	Deal cards to player/s in real-time	Players have cards to play rounds of game	Must	1	Done	2
13	Set up a round	Game service	Set up a round of play	I can start a round between players	Must	1	Done	1
16	Make a move	Player	Move one of my cards to the gap	The game progress and plays a round/turn.	Must	1	Done	4
17	Selecting Card	Player	Select a specific card	Score better than other player	Must	1	Done	2
18	Place Card	Player	Move one of my cards from hand	I place the card on the grid	Must	1	Done	1
20	Calculate round score	Game service	Calculate the round score after every card placement	I can add them to the total game score	Must	2	Done	8
21	Calculate game score	Game service	Calculate the game score for both players	I can have the total score of both players	Must	2	Done	1
22	Annouce Winner	Game service	Annouce the winner of the game at the end	Player knows if he won/loses the game	Must	2	Done	1
19	Check combinations	Game service	Check the cards combination on grid according rules	The game service can calculate the round score	Must	2	Done	15
25	GUI	Player	interact with game using clicks I	its Easy to play and enjoy the game	Must	2	Done	24
26	View the score	Player	View my score	I am aware of my chances to win	Should	2	Done	2
14	Hint Card	Game service	Analyse the current card grid (for a player)	I can determine and suggest a card to make score in round	Wont	No	Cancel	12
15	Show snail path	Game service	Show the path of the cards to play on	Player knows the next cards placement sequence	Wont	No	Cancel	5
23	Undo a move	Player	Undo my last move	I can place a different card	Wont	No	Cancel	2
25	2 player game	Game service	Offer a two players game	two players can play the game together	Must	3	To be started	26
24	GUI based Menu	Game service	Show the menu	the player can pick which game to play	Must	3	To be started	8
25	AI For Single player game	Game service	I want to have AI in game	I can intelligently take decisions to play game	Could	No	Cancel	15

Figure 1 Updated Product Backlog

5. Sprint Backlog

Backlog Item	Team	Story Points
User Story: 2 Player game	**A**	**46**
Task: Implement the 2nd player in CLI	A	12
Task: Test the game with 2nd Player in CLI	B	4
Task: Design the UI of 2 players game	B	3
Task: Develop the UI in pygame of 2 players game	A	12
Task: Change the turns	A	7
Task: Show which player turn it is on screen	A	6
Task: Integrate the end of game back to menu	B	2
User Story: GUI Based Menu	**B**	**16**
Task: Design UI of the menu screen	B	4
Task: Develop the menu screen	B	9
Task: Integrate the buttons to different gameplay loops	B	3
Total Story Points		**62**

Figure 2 Sprint Backlog

6. Progress summary

Our team has been diligently working towards achieving the sprint goals set forth for Sprint 3, navigating through a blend of technical development and team collaboration challenges. The period witnessed significant strides in the areas of Command Line Interface (CLI) functionality and Graphical User Interface (GUI) development.

Initially, our efforts were concentrated on refining the CLI, where Team A successfully implemented and tested the second player turn code, marking a pivotal step towards our two-player game functionality. Meanwhile, Team B's commitment to GUI and testing began to shape the visual and interactive aspects of the game.

Mid-sprint, a breakthrough came with Team B finalizing the UI design. Despite the time constraints imposed by overlapping schedules and observance of Ramadan, our teams established an effective workflow, choosing development times that accommodated everyone.

Team A’s progress in Pygame development was met with challenges, including issues with multiple card placements on a double click and errors within the main game loop. Nevertheless, the team achieved a significant milestone by completing the first set of story points achievement bars.

The teams jointly tackled the integration of a single-player game and the current two-player game with a menu, ensuring a smooth transition from game start to end. We encountered and resolved UI issues, such as game loop unresponsiveness when a specific hand, a "prial," was found in the grid. This was an instrumental learning point for our team in error handling and UX optimization.

Despite setbacks, such as team illness and personal challenges, we maintained momentum. Team B, in particular, showed resilience by pushing forward with menu development and the integration of the buttons to different gameplay loops. The challenge of continuous game loop abortion when buttons were pressed was identified and addressed.

As we approached the end of Sprint 3, both teams converged to confirm the completion of development tasks. In our final casual meetup, we reviewed our journey, acknowledged our collective effort, and shared a sense of accomplishment over the progress made.

This sprint has brought us closer to a fully functional and interactive two-player game, underpinned by a polished UI that promises an engaging user experience. We have turned our focus towards the final steps of development, aiming to deliver a product that not only meets but exceeds the expectations set at the beginning of this sprint.

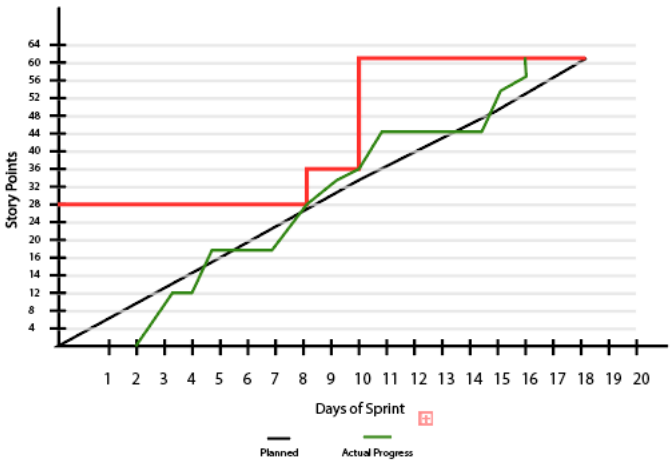

Figure 3 Burn up chart

7. Scrums Audit

ID	Date	Time	Duration	Team Members	Discussion
1	Mar-18	17:00	52min	Team A and B	Discussion about the CLI and 2 player turn code changes in it and distribution of work. And decided that Team b will more focused on GUI and Testing
2	Mar-19	20:00	1 h 45 mins	Team A and B	Update on the Progress, completion of Task implement the 2nd player human in CLI
3	Mar-20	18:00	49 min	Team A and B	Rough illustration of GUI of 2nd player human vs human game and division of its work
4	Mar-21	11:00	15 mins	Team B	Discussion about the Design UI of 2 players. Team A needed the instructions from Team B.
5	Mar-25	8:00	50mins	Team A and B	Team B showed the Final UI Design and Team agreeing upon, discussion about its implementation, issue of time was discussed as there is clash of time and Ramadan and Fasting. And decided upon next development best times.
6	Mar-26	17:00	1 h 27 mins	Team A	Implementation and completion of Task, Develop the UI in pygame and its testing, minor issues and further clarification about it. On turn, double click was place multiple cards. And error in main gameloop, and completion of first set story points achievement bar.
7	Mar-26	21:00	50 mins	Team B	Integration of single player game and current 2 player game with a menu and UX with the game start to end
8	Mar-28	16:00	25 mins	Team A and B	Completion of show turns message on Screen, and issues highlighted with the gui. Such as the gameloop was stucking and become unresponsive after prial found in the grid.
9	Mar-29	23:00	1 h 16 mins	Team A and B	About animation and branding in menu, but idea rejected based on the complexities and time shortage. And rough ideaziation of menu on paper.
10	Apr-02	14:00	22 mins	Team B	Design finalization for the menu, and discussion about the situation of Team A, one team member gone sick, and team complexities and personal issues.
11	Apr-04	16:20	57 mins	Team A and B	Testing of current game status, playing game, discussion about UX improvement, and development and one remaining task from 1st User story to complete. And team b work on Menu development
12	Apr-05	6:00	35 min	Team A and B	Development Completion of Menu GUI by Team B, and update exchange with team A
13	Apr-05	19:00	39 mins	Team B	Integration of buttons task, with two games, 1 player and 2 player, and issues of pressed button continouse gameloop abortion problem
14	Apr-06	20:00	1:50min	Team A and B	Completion of show turns message on Screen, and issues highlighted with the gui. Such as the gameloop was stucking and become unresponsive after prial found in the grid.
15	Apr-07	9:00	15 mins	Team A and B	Completion of development confirmation, and cascual meetup.

Figure 4 Scrums Audit