App Name: Mole Mash 2

By: Joey Huang & Nicholas Jap

	Beta Version	Final Version
.aia Files (Source Code)	CSP2_Huang_Jap_Mole_Mash_Beta.aia	CSP2_Huang_Jap_V2.aia
.apk Files (Packaged App)	CSP2_Huang_Jap_MoleMash_Beta.apk	CSP2_Huang_Jap_V2.apk

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Mole Mash:

Key
Green- Tier 1 Yellow- Tier 2 Red - Tier 3 ***/**Bold** - Top Ideas

Brainstorming Ideas

- Color changes when tapped
- Start screen/ Game over screen
- More than 1 type of mole with different points
- **Add hazards such as bombs (appears in holes, tap = lose life) ***
- Life system : 3 Lives
- Create a best so far for high scores
- Mole appearance increases as time goes on(Gets harder and harder-levels)
- Could say if you don't tap mole in x amount of time = lose life/points
- Maybe add more levels after reaching a certain score(background changes as player beats level)
    - Allows the moles to move around instead of just being static
    - Allow Best Score to save
- Potentially add a boss mole level where the player needs to hit the mole a certain amount of time to beat it (Have bombs appear more often)
- **Powerups: ***
    - Slows down time
    - Extra life
    - Shield
- Sandbox Mode
- Maintain a cloud data to save scores
- Shop

Top 2 Ideas

Hazards: For the hazards we would like to implement some type of obstacle for the player to allow a more interactive experience. Additionally, we plan to use mines as our main hazard. If the player touches the mine then they lose a certain amount of life points.	**Powerups:** For powerups, we would like to implement something that will give advantage to the player. We would add an extra life power up that gives an extra life, a slowdown powerup that could maybe slow down the spawn rate of the mole, and maybe even a shield that protects you from one mine damage.

Final Decision: Although the power ups system is probably a better idea, we feel that it would take too much time. If we had more time, we would definitely work on implementing this idea. For now, we decided to focus more upon adding the hazard system. We also decided to focus more on the hazard system because we feel that it will make the game more difficult for the player and can also be done in the time constraint.

Group Feedback:

-Increase Difficulty with hazard spawn rates

-Hazards appearing in the same hole

-Pretty good design overall

-Powerups a good idea

    -Could make moles move slower or have more points

Tier Chart	
Tier 1 (Green)	We wanted to add enemies/obstacles to reduce the amount of lives the player has. This will provide more of a challenge for the player and make it more fun overall. Additionally, we added a different point system for both the mole and the bomb to add variety to the game. Lastly we added a life system and increased the speed in which the mole and the bomb appeared as the level increases.
Tier 2 (Yellow)	We would like to add a high score label that stores the high score and maybe implement a play again feature so the player doesn't need to restart the app every time they would like to reset. Have a hammer or something to hit the mole with instead of just touching Adding new backgrounds as player advances to new stages
Tier 3 (Red)	Can't keep cloud data (ie after closing app = lose all data) Add a shop for possible purchases Make sandbox mode Add power ups

Beta Gallery Walk

Instructions:
1. Tap the mole to get points
    a. The mole with yellow hair is worth 2 points while the regular mole is worth 1 point
2. Don't touch the bomb or you will lose lives!
    a. Smiley Bomb = -2
    b. Regular Bomb = -1
3. Try and get to 100 points!
4. Tap try again to restart

Pro: Features Liked	Con: Aspects that were confusing, buggy, or etc.
The variety of moles	If you click the same mole really fast you can get more points
Easy to understand without reading instructions	How long does it take to get to level 2?
Fun idea	Can you get to level two?
The concept was nice the animations were funny but maybe clean up the helmet a little because I didn't know what it was before reading the instructions - Shravan N.	Why do I keep dying?
Score system works nicely	I think its too quick for just the first round itself
	When will level two start? Maybe try starting level two after clicking five moles, but great job!
	Think it's a bit too easy, maybe increase the difficulty faster.
	Glitchy.
	Makes moles disappear right when you click them
	Levels are too hard to pass (do they pass?), and moles don't disappear when clicked allowing you to get more points by clicking multiple times.
	How do you know which levels you are on?
	There are Negative lives- Nathaniel Issac

Reflection: Because we got most of the main aspects of our game done, we will mainly be focusing on fixing the bugs and applying more difficulty to the game. We would like to focus on the issue that the mole can be tapped more than once before reappearing in a different hole thus giving the player more points because it can be manipulated. Also, the levels were finished but the text wasn't changed.

Final Gallery Walk

Instructions:
1. Tap the moles to gain points
2. If you tap on the bomb then you lose life points
3. You get 3 lives and once you reach 0 then it's game over
4. Point system:
    a. Mole: +1 ; Yellow Haired Mole: +2
    b. Bomb: -1; Smiley Bomb: -2
5. Try and reach 100 points!

Pros: Features Liked	Cons: Aspects that were confusing, buggy, or etc.
Fun, the speed of the game makes it interesting and hooks the player in. They feel like playing more.	I just died with -1 lives.
It gets more difficult overtime and I like that, it makes the game interesting and makes you want to keep playing	The moles are either unresponsive or they just stay in the same place when you tap them.
The different character types and increasing difficulty make the game fun to play and keep the player interested.	If you tap into empty spaces, the moles still change despite not touching them.
This is a good time killing game	The game doesn't really get harder, and you could probably add sound effects for when the moles are smashed.
I like the yellow hair mole	The mole and the mine sometimes appear in the same hole which feels slightly buggy. -Edward He
I loved the welcome page and the instructions page as it was good to understand- Nathaniel Issac	The levels are too easy and there should be a timer to limit the amount of time a player gets to smash a mole
	The moles seem to lag when you tap them and you can't tell if you actually hit them or not.
	I wish the game was a little more challenging as the player scored more points.
	The game feels too linear.
	Adding a time feature would make the game more challenging

Final Conclusion Questions

Joey Huang

1. We started out this project by choosing three different project ideas and ended up with Mole Mash as our final game. We brainstormed ways we could improve on the app, and categorized them based on our limits, such as time, language, and personal experience. After adding most of the tier one additions, we received feedback on our peers about how to improve our app. Many of them pointed to the same bugs, such as moles/hazards appearing in the same hole, the levels not working, and a lag/delay problem after taps. Together, we worked together and managed to figure out ways we could fix these bugs by brainstorming and doing some external research. After that we managed to troubleshoot and fix the bugs, we added a few more features to our game such as levels/increasing difficulty, spawn timers, and a start/end screen. Finally, we wrapped up and packaged the final, completed app and prepared it for the final gallery walk.

Nicholas Jap

1. In this project, we began with an idea and brainstormed all the ways we could make the game even better. Additionally with the feedback we got from the other group about our ideas, we started implementing our idea into the game. We worked in making the game unique and fun while also making it challenging enough for the player. During the beta gallery walk, we got amazing feedback such as some of the bugs that the game had and a few features we could have added on to improve the game. Afterwards we started fixing the major bugs of the program as well as implementing some of the features that our pears suggested. Lastly, after fixing and adding some more codes, we tested our game and made a few more adjustments to get it ready for the final gallery walk.

Daily Log

Date	Joey Huang	Nicholas Jap
9/18	We discussed our 3 possible game choices of Mole Mash 2, Space Invaders, and Mini Golf. We decided on Mole Mash 2 as the other 2 ideas were already taken. Then we started on design notebook documentation as well and formatting. After, we began exploring the code of Mole mash 2 and seeing how the code worked.	Discussed our top 3 options and what we wanted to work on for our project. In the end we chose mole mash as our game choice since our other 2 options had already been chosen. We also worked on setting up the documentation page and formatting it all in order.
9/19	We began brainstorming possible ideas and new options that we could implement into our game and make it better and what we could work on for our project. Also, we started to code/explore how the game worked	Worked on brainstorming ideas that we can implement to our game. Additionally we listed any ideas we had to get down as a good number of options we can choose from.
9/20	Continued to code the game and see how it worked. Troubleshooted and fixed some aspects of the game that we added.	Worked on the general coding for the game(copying the code from the website)
9/21	We added new scoring system (randomly generated moles with different point values) and fixed some bugs in the game	We worked on making edits for the game. Additionally, we also implemented some of our ideas such as adding another sprite and a different point system.
9/22-9/23	No School, but at home I fixed some bugs in the game.	None
9/24	Added lives as well as obstacles (2 mines) as well as tweaking timers when time goes on. Also we tested the game by downloading it on the tablet and seeing if it works. Added levels for mines and moles by changing local timer settings, as well as creating end game and win game screens	We worked on adding the mine system to the game and started adding the comments to our new code. Additionally, we tested the game by downloading the apk and checking if the game ran the way it should.
9/25	Programmed the interval changes and implemented the reset button after the game was over. Began adding a game over screen and fixed a few bugs in the system.	Worked on the interval system and the reset button. Started the game over screen,
9/26	Finished coding game over screen and fixed timer problems. Also, I added levels by changing timer intervals after you reached a certain score and fixed the problem/lag after clicking on the moles.	Fixed some minor bugs and making the sprites more visually appealing. Finished game over screen and fixed some bugs.

9/27	Beta Gallery Walk	Beta Gallery Walk
9/28	Tried to fix some bugs from the gallery walk	Worked on fixing some bugs
9/28-9/30	None	Finished adding some comments to the code we recently added
10/1	Programed Start Screen	We worked on the code for the start Screen
10/2	Tried to fix overlapping bug	Worked on fixing the overlapping bug.
10/3	Quiz day; Fixed Overlapping glitch using collision and y-coordinates. Also added a instruction screen	Quiz; None
10/4	Refined code and color scheme of buttons; I also worked on organising project design notebook. Also fixed instruction screen glitch.	Finished up refining the code and overall game design. Also worked on adding to the Project design notebook and making the pages look neater. Lastly finished some commentating on the recently added code
10/5	Added a cloud saved high score system and a one way flag after beating the game but decided not to implement it as it doesn't contribute to the mechanics of this game much.	Worked on testing/packaging app and the high score system.
10/6-10/8	Worked and finishing the documentation and answering the conclusion questions and packaged app	Worked on finishing the remaining documentation and answering the conclusion question.
10/9	Set up app for the final gallery walk	Finished setting everything up for the Final gallery walk.