

Frontier of Freedom

Flappy Pong

Melody (Zhi Xin) Lee

Initial Ruleset

Link: <https://dl.dropboxusercontent.com/s/0i38je3la9gzf50/Flappy%20Pong.html>

1. Charge by holding down spacebar. Release the spacebar when an appropriate amount of force has been charged. When the ball lands, all the charged force will be transferred to the ball; the more the charge force, the higher – and hence further – the ball will bounce.
2. Use the arrow keys to move the paddle. Make sure the ball lands on the paddle so that it will bounce again past the next hurdle.
3. If the ball hits a hurdle or falls out of the screen, the game ends.
4. If the ball bounces on the paddle more than once between hurdles, the game ends.
5. If the ball lands on the paddle and does not bounce, the game ends.
6. Score as many points as possible.

Final Ruleset

Link: <http://melodily.github.io/melodily-portfolio/FlappyPongV14/FlappyPongV14.html>

1. Charge by holding down spacebar. Release the spacebar when an appropriate amount of force has been charged. When the ball lands, all the charged force will be transferred to the ball; the more the charge force, the higher – and hence further – the ball will bounce.
2. Use the arrow keys to move the paddle. Make sure the ball lands on the paddle so that it will bounce again past the next hurdle.
3. Score as many points as possible.
4. If the ball collects a star, it gains invulnerability for a short period of time. This means that it will not collide with hurdles.
5. If the ball collects a heart, it gains a life. Lives are lost when the ball hits a hurdle or falls.
6. When there are no lives and the non-invulnerable ball hits a hurdle or falls, the game ends.

Flappy Pong

THE LOVECHILD OF FLAPPY BIRD AND PONG, YOU WILL NEVER STOP TRYING FOR A HIGHSCORE! CHARGE TO BOUNCE YOUR BALL PAST MOVING HURDLES, AND BE SURE TO CATCH IT FOR ANOTHER BOUNCE WHEN IT FALLS. BUT CAREFUL - CHARGING TOO MUCH WILL SEND IT STRAIGHT INTO A HURDLE! WITH ITS SHORT PLAY TIME OF LESS THAN A MINUTE, IT IS PERFECT FOR ALL YOUR COMMUTING AND QUEUING NEEDS.

Game Features

NEON COLOR SCHEME
RETRO ART AND SOUNDS
ENDLESS AMOUNTS OF FRUSTRATION AND FUN

Who It Is For

ANYONE WHO ENJOYS A GOOD CHALLENGE OF TRUMPING YOUR FRIENDS' HIGH SCORES!

Summary of all iterations

Iteration	Link	Changes compared to original
1	https://dl.dropboxusercontent.com/s/0i38je3la9gzf50/Flappy%20Pong.html	Original
2	https://dl.dropboxusercontent.com/s/c6ww7iy1rty8c/Flappy%20Pong%20v2.html	Color of ball
3	http://melodily.github.io/melodily-portfolio/Flappy%20Pong%20V3/Flappy%20Pong%20V3.html	Art, sound, horizontal distance between hurdles
4	http://melodily.github.io/melodily-portfolio/FlappyPongV4/FlappyPongV4.html	Paddle follows ball
5	http://melodily.github.io/melodily-portfolio/FlappyPongV5/FlappyPongV5.html	Projectile drawn
6	http://melodily.github.io/melodily-portfolio/FlappyPongV6/FlappyPongV6.html	Decharge of force after charging to max
7	http://melodily.github.io/melodily-portfolio/FlappyPongV8/FlappyPongV8.html	Level gets faster, default minimum force, optimal force shown
8	http://melodily.github.io/melodily-portfolio/FlappyPongV9/FlappyPongV9.html	Level gets faster, tap multiple times to charge
9	http://melodily.github.io/melodily-portfolio/FlappyPongV10/FlappyPongV10.html	Level gets faster, tap multiple times to charge and move
10	http://melodily.github.io/melodily-portfolio/FlappyPongV11/FlappyPongV11.html	Level gets faster, force does not get reset, tap up/down to adjust force
11	http://melodily.github.io/melodily-portfolio/FlappyPongV12/FlappyPongV12.html	Level gets faster, paddle follows ball, tap to charge
12	http://melodily.github.io/melodily-portfolio/FlappyPongV13/FlappyPongV13.html	Level gets faster, paddle follows ball, tap to charge, power-ups, moving hurdles
13	http://melodily.github.io/melodily-portfolio/FlappyPongV14/FlappyPongV14.html	Level gets faster, power-ups, moving hurdles

Iteration #1

Link: <https://dl.dropboxusercontent.com/s/0i38je3la9gzf50/Flappy%20Pong.html>

Playtest	Players	Player Profile	When	Feedback medium	Highscore
1	Jake	Male, 30+	25 March, 11.30am	IRL	3
2	Melody	Female, 23	25 March, 11.30am	IRL	6
3	Tiffa	Female, 23	25 March, 11.30am	IRL	2
4	Bing	Female, 23	25 March, 11.30am	IRL	3
5	Zhi Hua	Female, 23	25 March, 12.30 pm	Chat	12
6	Cheng Yen	Male, 26	25 March, 12.30pm	Chat	19

*IRL: In real life

Analysis

What went right:

- The game had simple mechanics that encouraged replaying for a higher score. Zhi Hua played multiple times from a score of 1, to 5, was stuck there for a while, before finally hitting 12, while Cheng Yen had a score of 5, progressed to 7, then 10, and hit 19.
- Players enjoyed the challenges of estimating the right amount to charge to, and estimating where the ball would land
- When players died, they felt that it was fair

What didn't

- Players who got low scores after three playthroughs tended to give up.
- Players only achieved a double digit score after multiple playthroughs, indicating that the game was at a difficulty that might put off most people.
- The ball was hard to track because it did not stand out from the environment.
- Players did not understand why they could not hit the ball twice in between hurdles.

Iteration #2

Link: <https://dl.dropboxusercontent.com/s/c6ww7iy1rrtys8c/Flappy%20Pong%20v2.html>

Changes

- Changed color of ball to purple.
- Sounds added: bounce, getting a point, losing

Playtest	Players	Player Profile	When	Feedback medium	Highscore
7	Zhi Hua	Female, 23	26 March, 10.50 am	Chat	15
8	Tim	Male, 20+	26 March, 2.00pm	IRL	3
9	Larry	Male, 20+	26 March, 2.05pm	IRL	4
10	Sheela	Female, 20+	26 March, 2.10pm	IRL	4
11	Jesse	Male	26 March, 3pm	IRL	5
12	Tao	Male, 20+	26 March, 3.10pm	IRL	7
13	Mac	Male, 20+	26 March, 3.20pm	IRL	3
14	Eric	Male, 20+	26 March, 3.30pm	IRL	3

Analysis

What went right

- The ball stood out from the environment more than before, making it easier to notice.
- Players enjoyed the satisfying feedback of the ball hitting the paddle and getting a point.

What didn't

- The forces required for the various heights were too clustered together because charging increased force linearly while the vertical velocity required to overcome gravity increased logarithmically. Players could not fine-tune the force needed for heights on the top half of the screen.
- The simultaneous tasks of adjusting the paddle position and charging daunted players, who could not focus on both tasks.
- One player was confused by the arrow keys, because when the right arrow key was pressed, the objects that moved on the screen were the hurdles and those moved left.
- Some players did not realize that they had to move the paddle to where the ball would land. This was understandable as nothing indicated that they should move the paddle.
- Some players desired the ability to discharge after overcharging. This perhaps resulted from the feeling of a lack of control.

- Some players gave up after a short time as they could not figure out what the right amount to charge to was. The learning curve was possibly too steep.

Iteration #3

Link: <http://melodily.github.io/melodily-portfolio/Flappy%20Pong%20V3/Flappy%20Pong%20V3.html>

Posted on: <http://ludumdare.com/compo/minild-58/?action=preview&uid=49805>

Changes

- Massive changes to the art. The game is on a black background, hurdles are neon-colored, while the ball and paddle are white to stand out from everything else and to be associated with each other. The ball also has an extra glow to stand out further. Default fonts are replaced by retro pixel fonts.
- Decreased the horizontal force applied to the ball on each bounce. As the hurdles are procedurally generated based on the force applied to the ball, this meant that the hurdles are closer together as well. Previously, when the game started, only one hurdle could be seen; after moving past the first hurdle, at most two hurdles could be seen on one screen-length. Now, two hurdles can be seen when the game starts, and three hurdles can be seen on one screen-length.

Playtest	Players	Player Profile	When	Feedback Medium	Highscore
15	Zhi Hua	Female, 23	27 March, 12 am	Chat	20
16	Melody	Female, 23	27 March, 12am	IRL	13
17	Cheng Yen	Male, 26	27 March, 12am	Chat	31
18	Jake	Male	27 March, 1.50am	FB comment	11
19	Jiajin	Male, 23	27 March, 1.50am	FB comment	7
20	Jon	Male, 22	27 March, 2.30am	FB comment	-
21	Jesmond	Male, 22	27 March, 3am	FB comment	-
22	Sandra	Female, 23	27 March, 4am	FB comment	17
23	Timothy	Male, 24	27 March, 12.50pm	FB comment	12
24	Ze Xuan	Male, 20+	28 March, 9am	FB comment	-
25	Martin	Male	28 March, 9pm	FB comment	2
26	Casey	Male	28 March, 9pm	FB comment	-
27	Wei Seng	Male, 25	28 March, 9pm	FB comment	-
28	Thomas	Male, 22	29 March, 1am	FB comment	12
29	Vincent	Male, 23	28 March, 1pm	Email	3
30	Pi_pi3	-	27 March, 4pm	LD comment	3
31	JessaLuv	-	27 Mar, 4pm	LD comment	3
32	Lizard455	-	27 Mar, 8pm	LD comment	14
33	lamogui	-	29 Mar, 4.30pm	LD comment	-
34	Ming Yuen	Male, 23	27 March, 4am	FB comment	-

Analysis

What worked

- Higher scores were achieved on average, especially among seasoned players (Melody, Zhi Hua, Cheng Yen, Jake), which did not require many playthroughs. This could be due to the decrease in horizontal distance between hurdles, leading to better estimation by players on how much force to charge so as not to overstretch. This could also be due to the new art, which made the ball more distinctive and increased the incentive to continue playing.
- As before, the challenge and resulting frustration of the game were attractive to players.

What didn't

- Some players adjusted the force purely to get through the gap, and did not realize that they had to plan for horizontal distance as well. As a result, the ball would crash into hurdles eventually due to overcharging. This made the players feel like it was unfair as they could not prevent it by that stage.
- Some players did not realize initially they had to charge the bar before the ball lands, leading to confusion when they died when the ball hit the paddle.
- Some players also did not realize that the paddle could go past hurdles. This was due to the art.
- Because of the association with pong, some players expected the ball to bounce backwards when it hit the left side of the paddle.

Iteration #4

Link: <http://melodily.github.io/melodily-portfolio/FlappyPongV4/FlappyPongV4.html>

Changes

- Took out control of the paddle and made it follow the ball automatically.
- Increased the speed dramatically as a result, as the hurdles felt like they were moving across too slowly.

Playtest	Players	Player Profile	When	Feedback Medium
35	Melody	Female, 23	3 April, 8pm	IRL

Analysis

What worked

- Making it only one button makes it easier to focus on just a single task – charging the paddle

What didn't

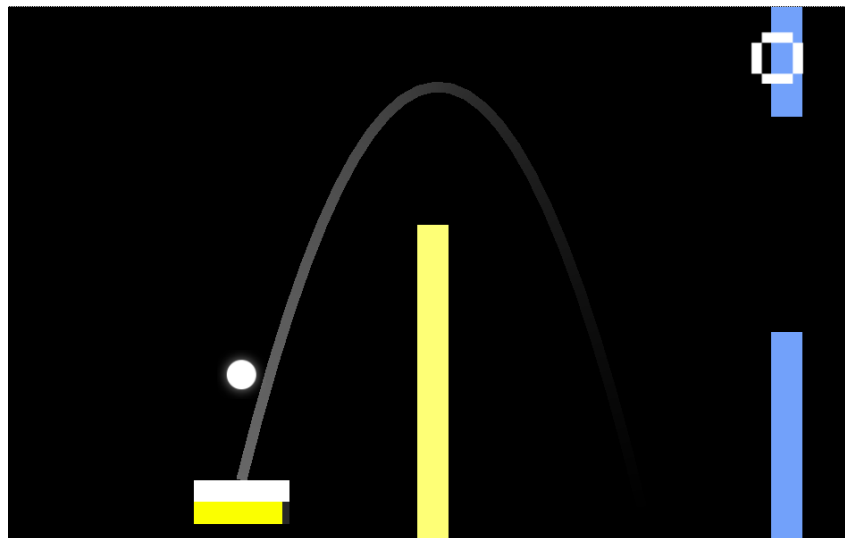
- It could be due to the speed of the paddle, but after a while it felt like I was just monotonously charging and was not engaged.

Iteration #5

Link: <http://melodily.github.io/melodily-portfolio/FlappyPongV5/FlappyPongV5.html>

Changes

- Reverted to the original mechanic of having to move the paddle
- Drew a line projectile for the player to see the path of the ball from their charge force
 - First iteration: Projectile was fully colored in. Changed it to have a gradient to fade to transparent.



Playtest	Players	Player Profile	When	Feedback Medium
36	Melody	Female, 23	3 April, 9pm	IRL

Analysis

What worked

- It does give beginner players a very clear indication of where their ball would go.

What didn't

- It was intended to be a tutorial for beginners to be able to map the charge force needed for various heights, but ended up being too distracting – players focused on only the projectile instead of looking at the charge bar at the same time to make the mapping. It hence failed in its intention.

Iteration #6

Link: <http://melodily.github.io/melodily-portfolio/FlappyPongV6/FlappyPongV6.html>

Changes

- Reverted to not having a drawn projectile.
- When spacebar is held after force is charged to the maximum, force is discharged.

Playtest	Players	Player Profile	When	Feedback Medium
37	Melody	Female, 23	3 April, 10pm	IRL
38	Jake	Male, 30+	4 April, 7pm	IRL
39	Bing	Female, 23	4 April, 7.10pm	IRL

Analysis

What didn't work

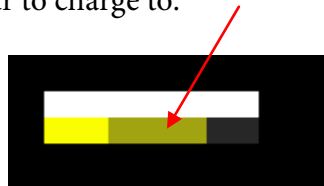
- It was essentially useless as it was much more efficient to charge to the correct amount on the first go.
- Even if players intentionally tried to use the mechanism, it ended up being too distracting – players had to focus on how much to discharge as well as move the paddle at the same time. It was a cognitive overload.
- The pace of the game made it infeasible to adjust the charge to one's heart's content. It was supposed to be a game to train twitch-based reflexes, where over time, players gained an intuition of when to let go. This mechanic went against that as it required a variable amount of time to get to the correct charge, which would have involved more conscious thinking on the player's part rather than letting them direct the load to unconscious processes and focusing on the rhythm of the ball.

Iteration #7

Link: <http://melodily.github.io/melodily-portfolio/FlappyPongV8/FlappyPongV8.html>

Changes:

- Reverted to original mechanic of not allowing discharging
- Made an indicator for players to know where to charge to for the first few stages. This had the appearance of a transparent yellow section of the bar which covered the appropriate amount of the bar to charge to.



- Previous iteration of this: <http://melodily.github.io/melodily-portfolio/FlappyPongV7/FlappyPongV7.html> .



The red vertical bar indicated the perfect amount while the orange part indicated the amount the player could charge to and still have the ball pass the gap.

- Scaled time to make the level go from slow to fast
- Made the paddle have a default minimum force even without pressing the space bar. This minimum force makes the ball be able to scale the shortest possible bottom hurdle.
- Tweaked the force bar scale so that the default minimum force only takes up one third of the bar, meaning that usable force is scaled up. This means that there is greater differentiation on the charge bar between charge force for various heights.
- Slimmed down paddle to provide for greater visual distinction between the paddle and the hurdles.

Playtest	Players	Player Profile	When	Feedback Medium
40	Melody	Female, 23	4 April, 6pm	IRL
41	Jake	Male, 30+	4 April, 6.30pm	IRL
42	Bing	Female, 23	4 April, 6.40pm	IRL
43	Joo Yun	Female, 20+	4 April, 8pm	IRL
44	Larry	Male	4 April, 7pm	IRL
45	Cheng Yen	Male	4 April, 10pm	Chat
46	Zhi Hua	Female	4 April, 11pm	Chat

Analysis

What worked

- Players who were not that proficient in the game liked the slow pace of the game at the start. They did not realize that the game was getting faster, indicating that the speed of the game was paced appropriately.
- The same players appreciated having the indicator to show them where to charge to at the start.
- The default minimum force, coupled with the scaling up of usable force, was well-received. Players were better able to refine their charge force for various heights.

What didn't

- Seasoned players could not stand the slow pace at the start, especially when the ball was falling. This ironically made their estimation worse as it interfered with the rhythm of the game.
- Both versions of the visual indicator for appropriate amount of force failed. The previous iteration was too visually complicated and confusing, while players did not realize what the transparent yellow part was for in this iteration.

Iteration #8

Link: <http://melodily.github.io/melodily-portfolio/FlappyPongV9/FlappyPongV9.html>

Changes

- Instead of holding to charge, players tap repeatedly to charge to the correct amount of force.

Playtest	Players	Player Profile	When	Feedback Medium
43	Melody	Female, 23	4 April, 6.50pm	IRL
44	Jake	Male, 30+	4 April, 7.10pm	IRL
45	Zhi Hua	Female, 23	5 April, 12pm	Chat
46	Joo Yun	Female	5 April, 3pm	Chat
47	Eric	Male	5 April, 6pm	Chat

Analysis

What worked

- Tapping made the amount of force needed discrete and hence easier and more precise to estimate. This was a good change for the players who sought for an easier experience.
- Some players were previously gingerly tapping the space bar to achieve the force they wanted, so this was enabled them to just tap the spacebar in a more relaxed fashion.

What didn't

- It got tiring to tap to the required force after a while, because players had to tap after every hurdle rapidly.
- It made the game easier, which means the original challenge of holding the space bar for the precise amount of time was removed.
- It became a matter of tapping three or four times every time the ball bounced for most of the hurdles, making the game boring.

Iteration #9

Link: <http://melodily.github.io/melodily-portfolio/FlappyPongV10/FlappyPongV10.html>

Playtest	Players	Player Profile	When	Feedback Medium
48	Melody	Female, 23	5 April, 2pm	IRL
49	Jake	Male, 30+	5 April, 3pm	Chat
50	Zhi Hua	Female, 23	5 April, 5pm	Chat
51	Joo Yun	Female	5 April, 4pm	Chat
52	Eric	Male	5 April, 6pm	Chat

Changes

- Made the movement of the paddle discrete. Because this affected camera movement, I decoupled the camera from the paddle, and made the camera move after the paddle reaches a certain point on the screen.

Analysis

What didn't work

- Players found the movement of the camera jerky and dizzying. This could be because there was no longer a smooth rhythm to crossing hurdles. The speed of the camera required to keep up with the paddle could be another factor.
- Players also felt that they had less control over the movement of the paddle, even though the paddle could cover all the space. This is probably due to the visual effect of seeing the ball bounce on a part of the paddle that was not the middle, causing discomfort.

Iteration #10

Link: <http://melodily.github.io/melodily-portfolio/FlappyPongV11/FlappyPongV11.html>

Changes

- Removed discrete movement for this iteration, but kept discrete charging
- Charge force does not reset after each bounce
- Players use up down arrow keys to increase or decrease the amount of force they wanted

Playtest	Players	Player Profile	When	Feedback Medium
53	Melody	Female, 23	5 April, 2.10pm	IRL
54	Jake	Male, 30+	5 April, 3.10pm	Chat
55	Zhi Hua	Female, 23	5 April, 5.10pm	Chat

Analysis

What worked

- Players can now adjust the amount of force they wanted
- Players did not have to tap repeatedly because force was not reset.

What didn't work

- This really dumbed down the game too much! As said before, the amount of force required for many heights was similar, so players did not even have to change the force for successive levels, and when they did, they only had to tap it once or twice to adjust. This made the game extremely boring.

Iteration #11

Link: <http://melodily.github.io/melodily-portfolio/FlappyPongV12/FlappyPongV12.html>

Changes

- Reinstated having the paddle follow the ball for a level that was simpler (not as fast as iteration #4)

Playtest	Players	Player Profile	When	Feedback Medium
56	Melody	Female, 23	5 April, 7pm	IRL
57	Jake	Male, 30+	5 April, 8pm	Chat
58	Bing	Female, 23	5 April, 8.10pm	Chat
59	Eric	Male	5 April, 8.20pm	Chat

Analysis

What worked

- Players liked that they only needed to focus on the single task of estimating the amount of force required.
- The speed this time was more manageable. Players did not find the rate at which hurdles moved past too slow.
- The slower speed, coupled with tapping, made the action not so monotonous – rather than holding down the spacebar and releasing rapidly, players now tap a different number of times after thinking about how much to charge.
- Players who were not as proficient in the original version were more motivated to play.
- Players felt that the smooth camera progression gave a good sense of progress.

What didn't

- Less challenge meant that the feeling gotten from playing the game wasn't the frustration from flappy bird. For some players, this was a better feeling, but for others, this meant less incentive to try again, and a lower interest curve.
- This is subjective, but it became a more common game after removing the mechanic of moving the paddle. What made the original game so special was more diminished in this version.

Iteration #12

Link: <http://melodily.github.io/melodily-portfolio/FlappyPongV13/FlappyPongV13.html>

Changes

- Reverted to holding down to charge
- Added powerups – extra life and invulnerability
- Added moving hurdles
- Made three different modes that started at different speeds so as to let seasoned players go straight to faster speeds

Playtest	Players	Player Profile	When	Feedback Medium
60	Melody	Female, 23	6 April, 1am	IRL
61	Jake	Male, 30+	6 April, 11am	IRL
62	Bing	Female, 23	6 April, 11.10am	IRL
63	Vivek	Male	6 April, 11.20am	IRL
64	Brentt	Male	6 April, 11.30am	IRL
65	Zhi Hua	Female	6 April, 2pm	Chat
66	Cheng Yen	Male	6 April, 9am	Chat
67	Stephanie	Female	6 April, 12pm	Chat

Analysis

What worked

- The power-ups were immensely popular with players. They added variety to the game, and gave players second chances when they made mistakes. They were also bonus mini goals for players to strive towards.
- Players also enjoyed the scaling of the interest curve with moving hurdles, which added variety as well.
- Seasoned players liked being able to choose more levels with greater difficulty
- Most players liked only needing to focus on one task of charging. Players who did not enjoy the feeling of frustration took to this version better.

Final version

Link: <http://melodily.github.io/melodily-portfolio/FlappyPongV14/FlappyPongV14.html>

Changes

- Reverted to having to move the paddle
- Lives give players extra chances as well when the ball falls out of the screen.
- Added a prompt for first-time players to charge and move the paddle
- Removed different levels with the reversion of having to move the paddle, as that was challenge enough.

Rationale

Even though most of my playtesters in the previous iteration enjoyed having only one task of charging to concentrate on, my personal favorite was still controlling the paddle as I felt it made the game more dynamic. I considered the following factors: the kind of feeling I wanted, my target audience, the novelty of the mechanic, as well as my original intention in developing my game. The first two factors were related for me – I wanted a challenge, and my target audience was the people who played Flappy Bird continuously (hence the title of the game). For the third, I thought that the mechanic of moving the paddle to receive the ball made the game more novel than the usual mobile game, and that frankly was a big reason – I did not want to have an unoriginal product. As for the last, my original inspiration for the game was practicing table tennis by yourself, by continuously bouncing the ball on your paddle. That tested both the force as well as the angle with which you bounce the ball. I felt that moving the paddle to receive the ball stayed truer to the feeling from this activity.