

FRONTIER OF FREEDOM

Problem Statement:

To design, develop, and playtest a PC game in which you control a deer. The deer has to save a rabbit from a forest that is on the verge of destruction. There are falling trees, attacking bears that you need to dodge carefully and maneuver through a tricky terrain to reach the extraction point on time.

Bear's Hollow

A. A brief description of process of creating the game

1. **Environment:** The process started with deciding on a setting/environment for the game. We settled on forest as the location.
2. **Brainstorming:**
 - a. Baby deer lost in the forest. Help mama deer find it.
 - b. Deer Taxi simulator where your deer is like a taxi and it takes other animals to the location of their choice. You need to reach the location within a time limit to get paid.
 - c. Deer race where you need to be careful of other deers crossing.
 - d. Reindeer: Control a reindeer to deliver gifts to baby animals instead of humans. Flying mechanic could be fun.
 - e. Baby deer got lost playing hide and seek, you as a fellow deer needs to find the lost deer.

f. Deer saving a rabbit from bear attacks.

3. **Theme:** We decided on a “Rescue” Theme. We went through a lot of different iterations on world building, but eventually settled on the idea of a fantasy world with magical abilities.
4. **Emotion:** Magical and a sense of urgency (anxious).
5. **Constraint:** Your character helps some other character in the game. (Example: Mother has to find lost child)
6. **Characters:** Once the theme and setting were clear, we chose deer as our protagonist.
7. **Other characters:** The deer has to save a rabbit that is hurt. The deer has to take the rabbit away from the island that is getting destroyed.
8. **Challenges:** Then we created different locations and challenges within those locations. Each location had to have a characteristic of its own and should need the player to skillfully maneuver through those areas. These locations will be described in part B. As for the other challenges, we created an AI for bears attacking the deer and trees falling abruptly blocking your path.
9. **Mechanic:** Next, we focussed on what the deer could do. The deer could move, hop around, jump higher than usual and fly when high on the flying ability.
10. **Maps:** We started building up the map for our level. We created a constraint for ourselves, no open world map, to limit

the scope of the game. We realised that an open world would require quite a lot of indirect control to guide the player if they got lost. It is really easy to get lost in a forest as it is hard for our brains to create a map of the forest, there are no landmarks, all trees/rocks/paths look the same. So it became important for us to create a linear path with twists and turns to guide the player towards the end goal.

11. **Goal:** Move the rabbit from the forest that is getting destroyed to a safer location.

Final executable:

<https://drive.google.com/open?id=1RAwe6cQrGP49QEBNg28sf89dPTyX>
NWIC

B. Illustrations and descriptions:

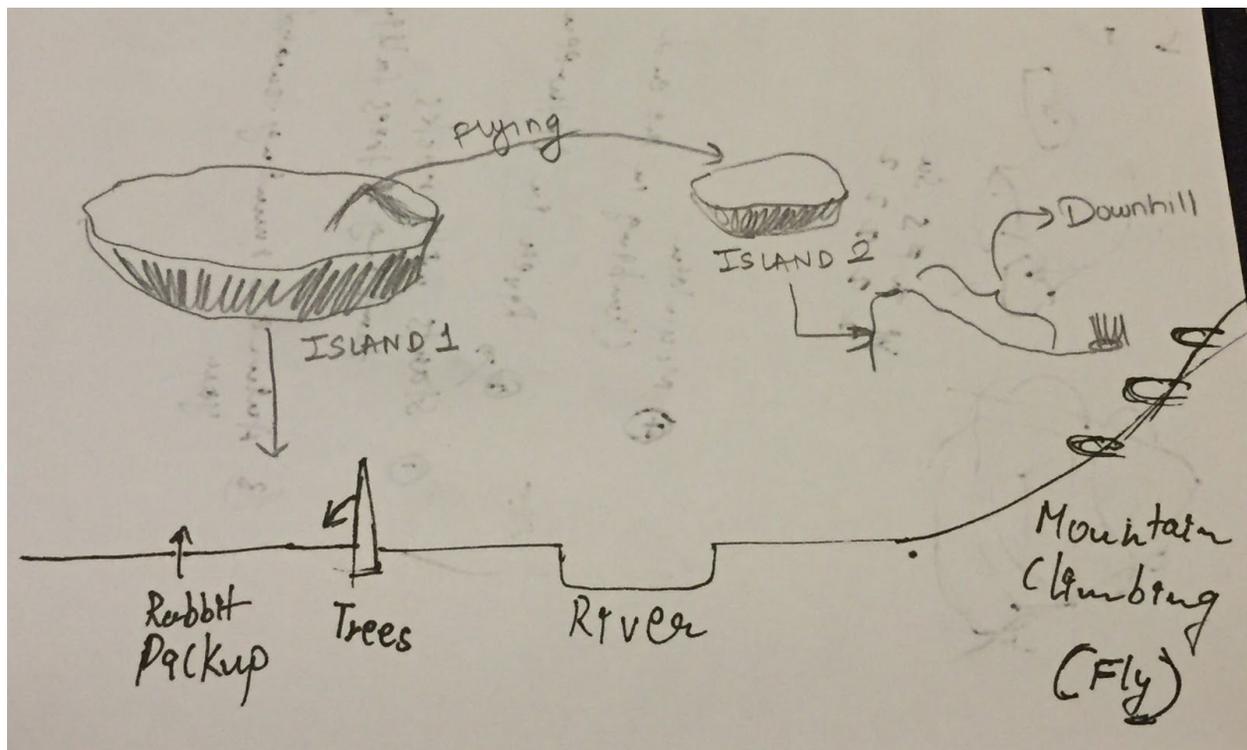


Fig 1. Overall Idea of the level.

Description: The deer will follow a linear path with twists and turns. It will start with the deer picking up the rabbit. Then the deer will encounter falling trees and attacking bears. The river will have stones placed such that it would be hard to maneuver. The big hill at the end indicates the extraction point.

The second island was developed to encourage flying to another island and then running downhill, both of which were fun activities to do, keeping in mind that the flying must be limited. The second island is a safe zone.

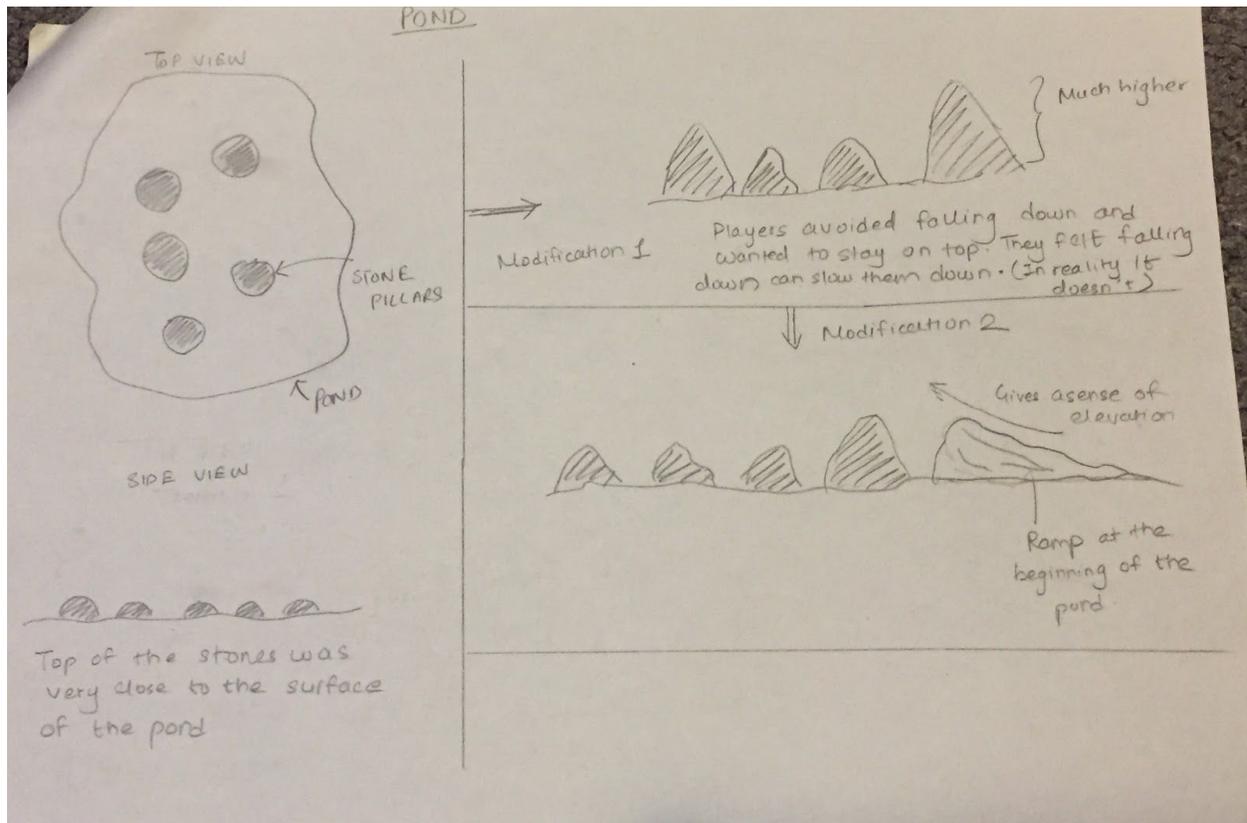


Fig 2. Pond level.

Description: This part of the game has several stones placed in the pond. The player needs to hop on them to move past the pond. The stones are placed such that it slows you down to move through them carefully.

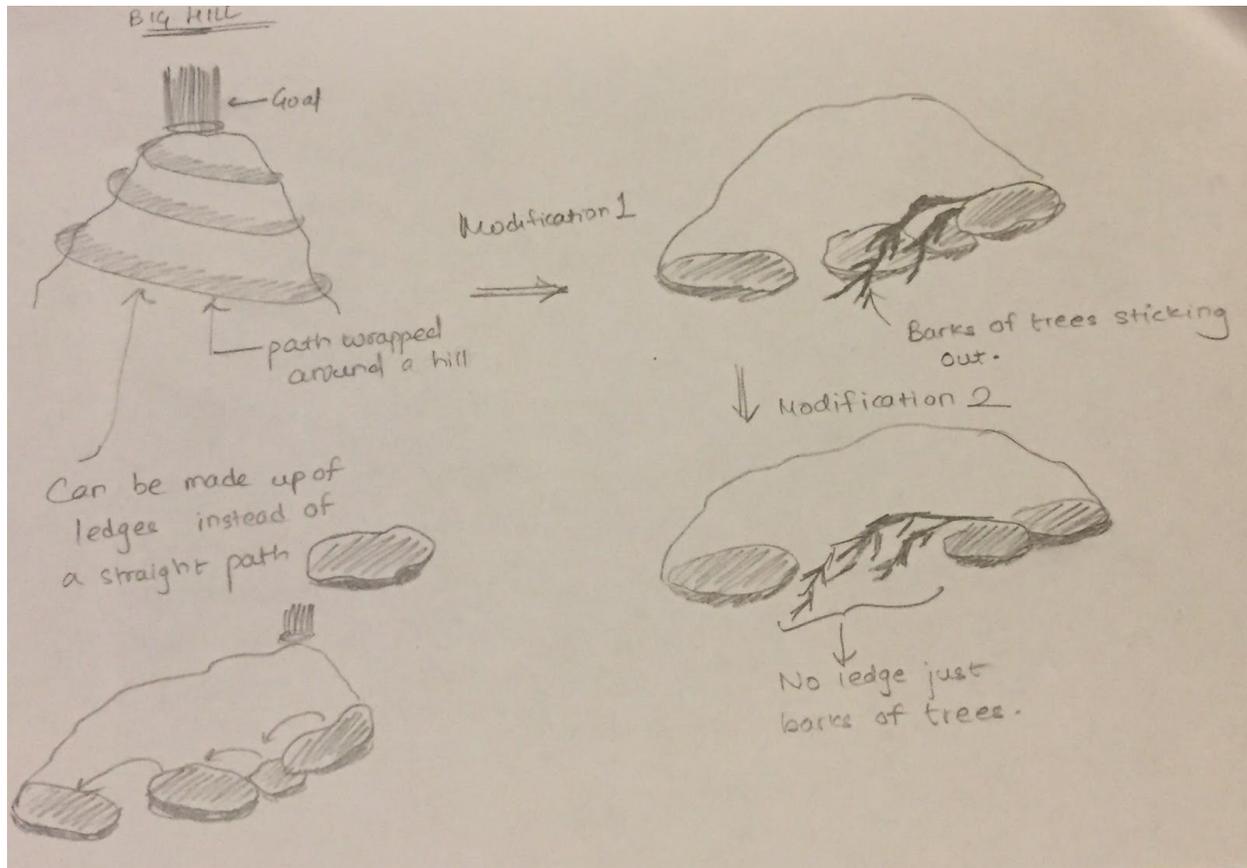


Fig 3. Big Hill Level.

Description: This part of the game has a path that goes around the big hill. It's fun to maneuver on the narrow ledges and avoid falling down.

C. Playtest Analysis:

Playtest 1

Initially, we decided to use a keyboard and mouse. But after moving the deer around in the scene a couple of times, we found that controlling the deer wasn't as fun as we thought it would be. So we decided to switch to an Xbox controller.

We wanted to check which controller interface was the most comfortable to play with.

Controller Mapping 1: Using right trigger to ascend and left trigger to descend. Left joystick to move the deer in 2 Dimensional space and Right joystick to move the camera around.

Controller Mapping 2: Right joystick to control the flying of the deer. Moving the right joystick along the y-axis upwards indicated ascend and moving it downwards indicated descend. Left joystick to move the deer forward, backward, left and right.

PlayTester 1 (Caleb Biasco)

03/16/2018

13:05 - 13:18

Feedback for Controller Mapping 1:

- Easier to control the deer.

Feedback for Controller Mapping 2:

- Did not feel comfortable.
- Took time to get used to.

General Feedback:

- Wanted to stay on the ground and didn't have a reason to fly.
- Flying did not feel as natural as it is supposed to.

PlayTester 2 (Vasant Menon)

03/16/2018

13:18 - 13:40

Feedback for Controller Mapping 1:

- Easy and intuitive.

Feedback for Controller Mapping 2:

- Highly frustrating.

For playtesters 3 and 4, we decided to have them test Controller Mapping 2 before Controller Mapping 1 to check if the comfort level achieved with the first one affected their experience for the second one.

PlayTester 3 (Himanshu Telkikar)

03/16/2018

13:40 - 14:00

Feedback for Controller Mapping 2:

- Not used to this movement.
- It took time to learn.

Feedback for Controller Mapping 1:

- Easier to control and much better than the first one.

General Feedback:

- Very much used to left analog stick being the one controlling the movement of a character in games played in the past.
- Running is more satisfying than flying.
- Flying does not feel good as there is lack of feedback whereas running leaves behind the footsteps that feels satisfying.

PlayTester 4 (Urvil Shah)

03/16/2018

14:00 - 14:20

Feedback for Controller Mapping 2:

- Did not feel natural.

Feedback for Controller Mapping 1:

- Liked it.

General Feedback:

- Liked flying around because of the view you could see from the top.
- Liked the idea of having the flying ability as a power up and for limited duration. Would not like it if it happens all the time.

Analysis:

1. Controller with Mapping 1 is much more natural and intuitive because people are used to playing games with that interface configuration.

Left Joystick: Controlling the movement of the deer.

Right Joystick: Controlling the camera for the player view.

A Button: Jump.

Left Trigger: Descend.

Right Trigger: Ascend.

2. The order in which both interfaces were tried did not matter, control mapping 1 worked the best for everyone.
3. Flying should be limited in the game, although it is new and exciting for a while, it served no purpose. We could either construct a level at the flying height or find a way for it to serve a purpose.
4. We decided to create two separate islands, unsafe and safe island, both of which are floating in the sky. After reaching the extraction point on the first island, you proceed to fly to the other island to bring the rabbit to safety.

Playtest 2

Changes:

1. **Controller Mapping 1:** Press “A” button twice to enter jump mode and then use right trigger to ascend and left trigger to descend. Left joystick to move the deer in 2 Dimensional space and Right joystick to move the camera around.

PlayTester 1 (Richard Aguirre)

03/29/2018

13:25 - 13:40

Observations:

- Had to guide him throughout the game.
- Did not know where to go.
- Flying was fun but too complicated to achieve.

- Wanted the game to tell him what to do.
- Did not know that he had picked up the rabbit.

General Feedback:

- Very confused by the controller interface, too many buttons to keep track of.
- Liked the footprints and the contrast they provided to the dark theme of the forest.

PlayTester 2 (Rony Kahana)

03/29/2018

13:45 - 13:55

Observations:

- Liked the visuals.
- Figured out where to go when she spotted the red beam.

General Feedback:

- Controls were confusing.
- Liked flying, fun toy mechanic.
- Trees were getting in the way of flying.

PlayTester 2 (Jeremy Liu)

03/29/2018

14:00 - 14:15

Observations:

- Liked the idea of a deer character.

- Took time to learn the controls.
- Spotted the red beam and went straight for it.
- Cleared most of the path by flying.

General Feedback:

- Liked the visuals.
- Mentioned that the story of rescue/delivering gifts fit well with the flying mechanic.

Analysis

1. Keep limited flying time. If they have unlimited flying power, then we need to create obstacles in the sky as well. Without obstacles, you can just fly and finish the game easily. This meant we had to force them to return back to the ground when they were low on flying ability.
2. Make the controller interface easier. Instead of having triggers to move up and down, press A a couple of times to get a boost and then start flying.

Playtest 3

Changes:

1. Smoke effect when collecting the flowers.



2. **Controller Mapping 1:** Press A button twice to ascend and left trigger to descend. Left joystick to move the deer in 2 Dimensional space and Right joystick to move the camera around.

PlayTester 1 (Alan Turner)

04/04/2018

19:00- 19:18

Observations:

1. Didn't feel a sense of urgency.
2. Trees didn't feel like a bigger danger.
3. Wanted the trees to fall when the deer was closer or be more of a challenge.

4. Wanted more gravitational pull on the deer when landing after jumping.
5. Did not notice the rabbit.

What was most annoying to you?

1. Jumping feels floaty.

What did you like the most?

1. Running around feels good.
2. Width of the canyon is good.
3. Wanted more of ledge play in the game.

● How do you feel about the bear?

Bears running in one place before they started chasing you felt weird.

Analysis:

1. To increase the challenge, trees should fall when you're closer to them. We started adjusting the distance of the trigger that activated the falling trees until players said that it felt right and gave them enough time to respond.
2. Trees can fall from different sides rather than falling from one direction. Two trees can fall from different directions simultaneously.



3. Bears when spawned need to remain hidden from the player. They must then appear suddenly to introduce that surprise factor.

Playtester 2 (Vasant Menon)

04/04/2018

19:20- 19:35

Observations:

1. Did not notice the bear behind.
2. Wanted sounds in the game.
3. Thought that the world would tell him the objective.
4. Thought the flowers were merely an aesthetic.

What was most annoying to you?

1. Did not know what the objective was.

2. Did not like the smoke feedback as he thought that the smoke was harmful.

What did you like the most?

1. Running around feels good.
2. Width of the canyon is good.
3. Wanted more of ledge play in the game.
4. Space did not feel claustrophobic and uncomfortable.

- **Did you know what happened when you ate the magical flowers?**

Did not realise that they were speeding me up and thought were either harmful or just an aesthetic.

- **How do you feel about the bear?**

Felt a sense of urgency with the bear.

Analysis:

1. A clearer way to show the long beam (objective). The beam should be more visible at the start of the game to indicate where the player

needs to take the rabbit.



2. Bears when spawned need to remain hidden from the player.
3. Remove the smoke feedback on flowers and give it a more positive feedback.
4. Sounds can change from slow music at the beginning and fast music when you are being chased by the bear (high tension).
5. To indicate the deer got hurt or getting hit by the trees and attacked by the bear had consequences, we introduced a camera shaking mechanic.

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Playtest 4

Changes:

1. Added big hill ledges level design towards the end of the level.



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2. Added horizontal (fallen trees sticking out) at some points on the cliff.



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3. Added just trees sticking out without a cliff below them.



4. Added timer for a sense of urgency.
5. Added pond level design.



(The height of these stones was too small and did not make the player want to hop onto them. This was changed later to make it feel more risky. When jumping at a higher level, players did not want to accidentally fall down. Whereas in this case, they didn't care if they were sprinting through the pond. There were no skills involved while going through this pond level.)

6. Made the trees bigger in size.
7. Camera shake on getting hurt.

PlayTester 1(Niharika Jain)

04/05/2018

11:05 - 11:18

Observations:

1. Was constantly mentioning the need of a life bar to indicate how hurt the deer is.
2. Didn't know that the trees on collision were hurting the deer.
3. Wasn't sure if falling in the pond affected the deer.
4. Found maneuvering around the trees very difficult.
5. Found trees on the cliff too difficult, didn't know if the deer had to jump over them or not.
6. Playtester was inexperienced with a joystick and found moving the deer and the camera simultaneously hard.
7. Did not notice that the deer was leaving behind footprints.

What was most annoying to you?

1. Level was too tough.
2. Got stuck on the trees most of the time.
3. Trees were placed too close to each other, should have been more spaced out.
4. Shaking of the camera is not good.
5. Struggled with the controller.
6. Horizontal branches on the tree were too tough to maneuver.
7. Did not know what the mission was. How do I end it?

What did you like the most?

1. Environment was nice.
2. Liked roaming around.
3. Fun to grab flowers on the way.
4. Fun to jump over trees.
5. Terrain was nice.
6. Bear chasing was good.

- **Did you know what happened when you ate the magical flowers?**

I noticed a wind swirl and the speed of the deer increased.

- **Was the number of bears attacking you fine?**

Two were enough, couldn't have survived a horde of them.

- **Did you feel like you were making decisions?**

No, the path made you follow one direction. I followed the cherries which were assuring me that I was on the right path. There were no crossroads and hence no decisions. If there would have been crossroads, I am not sure if I would have liked the bears chasing me.

Analysis:

1. It was interesting to find out that the magical flowers were confirming the path for the player rather than the big mountains surrounding it. It acted as an assurance that they were on the right path.
2. Playtester said they liked roaming around even though they were restricted by one path. The turns in the terrain and width of the path allowed them to feel this way.
3. Horizontal trees on the cliff being difficult to maneuver is a problem, and the player falling down or getting stuck on those trees/sliding down the terrain is not fun and very frustrating.
4. There is a need of a positive feedback for when the deer eats magical flowers and speeds up. A change in the colour scheme from green to something calmer like blue.
5. There is a need for negative feedback, something different from the camera shaking, when the deer gets attacked by the bears or hit by the trees.
6. The camera shaking not only affected the player in the current moment but the player also lost an opportunity to dodge the obstacles while the camera shaking happened. For example, the player would get hit by a tree, the camera would shake for 1.5 seconds but the player would continue moving forward. Anything that happened in those 1.5 seconds was not seen/noticed by the player and they felt annoyed if the bear attacked them or the tree fell on them in those 1.5 seconds as they felt like they were not in control for that duration.

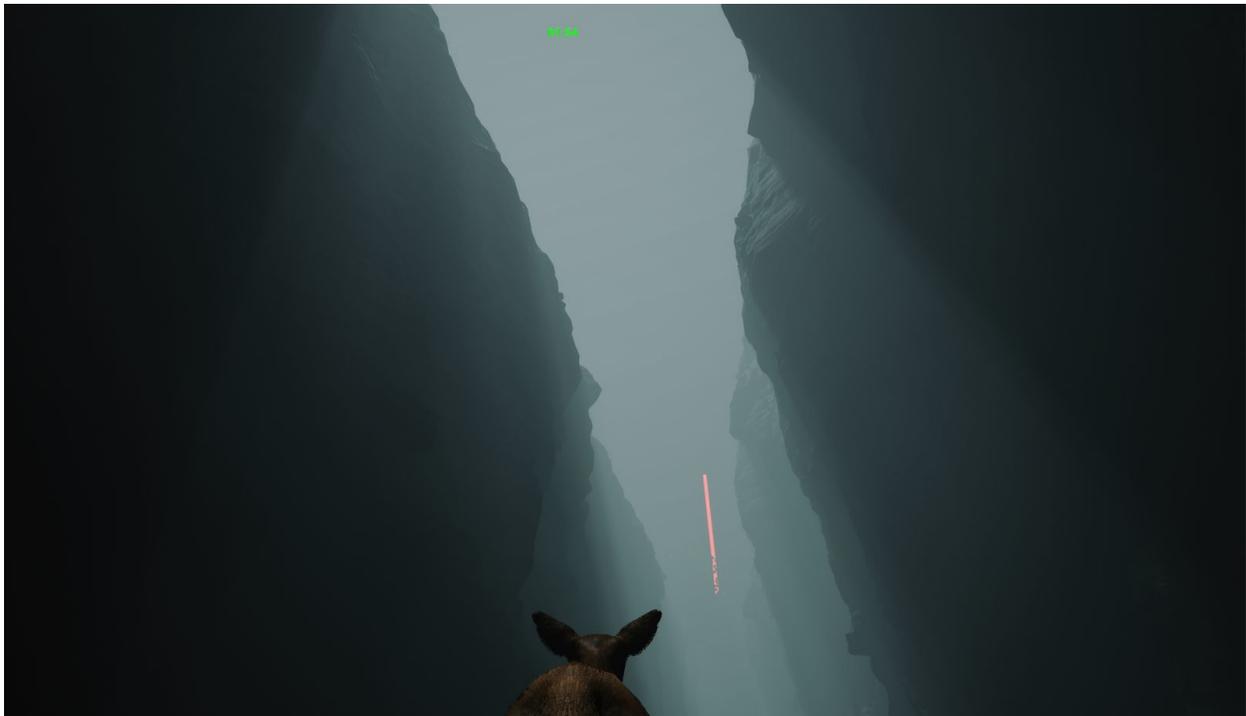
PlayTester 2,3(Mohammed Al Buraiki and Pradnesh Patil)

04/05/2018

15:30-16:00

Observations:

1. Fairly easy to move through space.
2. Did not have to inform them about the rabbit but were able to figure it out on their own.
3. Noticed the end goal after the rabbit was picked up as the beam grew taller.



4. Did not know when the game ended.
5. Collected plenty of flowers, including the ones not in their path.

What was most annoying to you?

1. Trees were falling too fast.
2. Camera shaking is too much.
3. Frustrating to jump over the trees.

What did you like the most?

1. They loved moving fast after eating flowers. They tried collecting more flowers.

- **Did you know what happened when you ate the magical flowers?**

Increased speed. Took a couple of flowers but figured it out.

- **How do you feel about the bear?**

Not much of a threat.

- **Did you feel like you were making decisions?**

Not really.

Analysis:

1. They had less time to react to the falling trees which caused them to slow down and spend some time just to jump over them. A stop to their sprinting motion was really annoying. Giving them more response time can avoid a stop in current movement.

2. More feedback when the goal is achieved to remove the confusion of whether the level has ended or not.
3. There was no feedback when the bear attacked them. Adding a feedback like blood splash to indicate being attacked can give a sense of danger.
4. They wanted to know where the bear was. Spatial sound can help with that.

Playtest 5

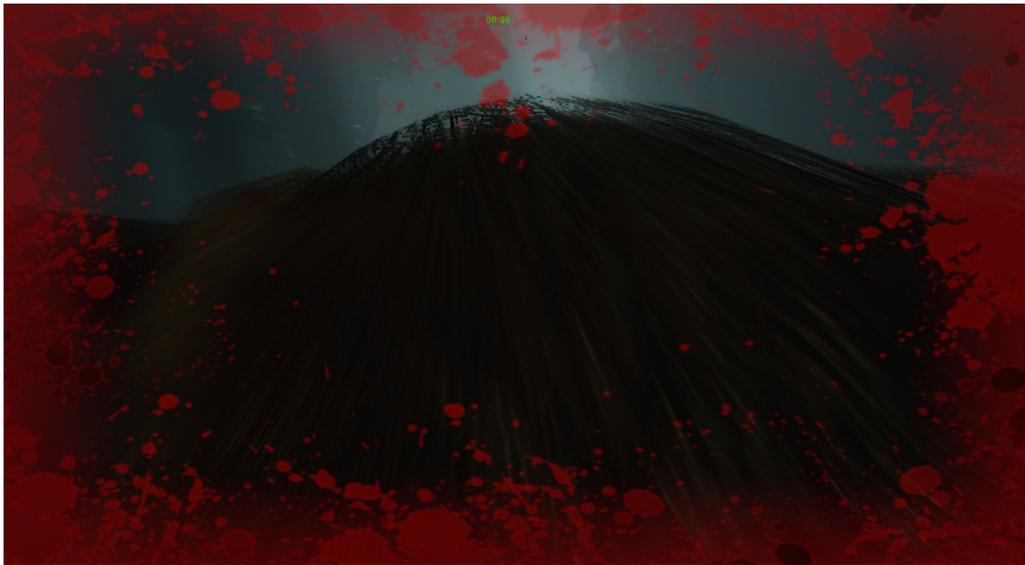
Changes:

1. Remove/reduce camera shake.
2. Remove trees sticking out on the cliff without a cliff base in the level design.
3. Positive feedback for eating flowers in the form of particle effect as seen in the picture.





4. Blood splatter to indicate getting hurt instead of camera shake.



5. Open ground at the start to allow players to move around and ease into the game.
6. Modified old pond design.



PlayTester 1 (Howard Won)

04/05/2018

23:00-23:15

Observations:

1. Went for the floating rabbit and felt like it was a collecting token.
2. Thought the flowers might be dangerous.
3. Assumed goal was to run away from the bear.
4. Attention was on immediate surrounding.
5. Thought that obstacles in the way were surprising.
6. Playtester thought the flowers were dangerous and made no attempts to grab them. When they did, they did not discover that it caused the deer to speed up.

What was most annoying to you?

1. The lake part of the game.

What did you like the most?

1. Liked the blood feedback, would have been better to have it on the screen for longer duration.

- **How did you feel moving around the level?**

Did not change direction a lot. Never got lost.

- **Did you feel a sense of tension because of the bears?**

Thought that the bear was not an enemy. Started chasing the bear instead. Needs more of a bear sound.

- **Would you like checkpoints?**

I would be fine without checkpoints.

- **Would you have liked an open area?**

Would prefer an open area as it gives time to explore the world.

Analysis:

1. The stone pillars placed on the lake must be spaced out in a way such that two consequent ones can be traversed in one jump.

2. There were no sharp turns in the level which avoided causing a break in his sprint. He liked that about that level. We should avoid sharp turns or any unintentional obstacles that break the player's rhythm.

Playtest 6

Changes:

1. Background music for the starting area of the game.
2. Make the blood splatter last longer.
3. Change the flowers to make them more appealing.



4. Made the feedback of the flowers less intimidating.

PlayTester 1(Alan Turner)

04/06/2018

18:10 - 18:20

Observations:

1. Almost collected all flowers.
2. Did not need instructions.
3. Ended up jumping off the cliff at the end.
4. This time, the bear felt scarier.
5. Missed the particle effect that was spawned when collecting the flowers.

What was most annoying to you?

1. Trees felt abrupt and did not know that they would fall.
2. Jumping still feels weird.

What did you like the most?

1. Liked the blood feedback, would have been better to have it on the screen for longer duration.
2. Blood feedback was good.
3. Liked that the trees slowed me down and the bear caught up to me.
Felt much more pressured this time.

● **Did you like the open area?**

Yeah, was collecting a lot of flowers to speed up.

- **Did you feel a sense of tension because of the bears?**

Sounds made me feel that the bear was much more dangerous.

- **General Feedback?**

Raising the stakes as the level progressed could be good. Need more dangerous things in the environment apart from the trees.

Analysis:

1. Music was really helpful in conveying the danger. Visual effects also played a major role in that. A visual and audio feedback tremendously improved the game in terms of conveying urgency.

PlayTester 2(Pradnesh Patil)

04/07/2018

11:00 - 11:15

Observations:

1. Almost collected all flowers to run faster.
2. Wanted to fly at the end of the level.
3. Did not notice the particle effect feedback for the flowers.

What was most annoying to you?

1. Controls were not responsive.
2. Jumping does not feel as good.

What did you like the most?

1. Trees were well spaced out.

- **Did the controls feel complex?**

The controls were not at all complex.

- **Did you feel a sense of tension because of the bears?**

Sounds made me feel that the bear was much more dangerous.

- **Did the flowers seem dangerous?**

They felt more appealing and wanted to head towards them.

- **General Feedback?**

The jumping does not feel good, needs improvement.

Analysis:

1. Deer jumping needs improvement. While jumping, the deer should continue moving forward with the same speed as before.
2. Cooler colours made the flowers more appealing.

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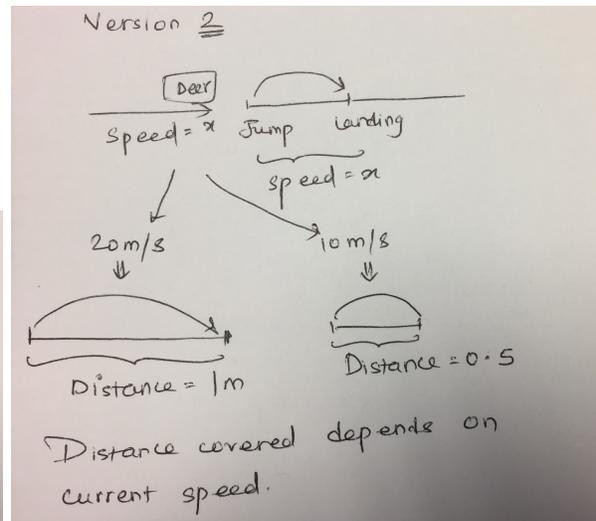
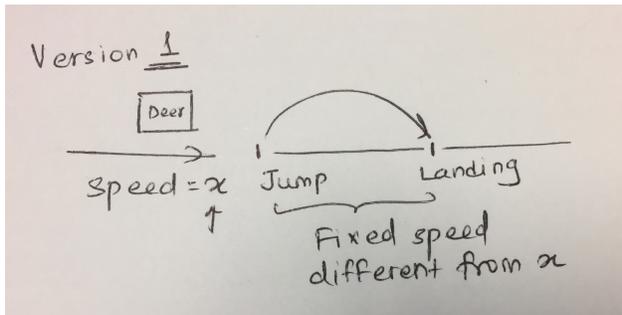
3. Once at full speed, players wanted to jump of the cliff and fly around.

Playtest 7

This playtest was conducted to check if jumping felt natural and fun.

Changes:

1. Make the jumping more responsive. Allowing the deer to move forward even when it performed a jump in the air.



PlayTester 1(Pradnesh Patil)

04/07/2018

14:05 - 14:20

Observations:

1. Once the level ended, player wanted to go back the way he came from just to be able to run downhill.

What did you like the most?

1. Jumping was much more satisfying.
2. Trees feel like a good challenge and are not frustrating anymore.

- **General Feedback?**

Going downhill was more fun than going uphill.

Analysis:

1. Players love going downhill at full speed. We decided to add this at the end as players loved that freedom that came along with it. We realised that once the players reached the top of big hill, they enjoyed looking down the path. Sprinting downhill is fun even when you do it in real life and we thought that control a sprinting deer downhill could be more fun.

PlayTester 2(Rajat Gupta)

04/08/2018

13:00 - 13:15

Observations:

1. Fell off the cliff at the end and had to restart.
2. Tried flying after reaching the end of the level.

What was most annoying to you?

1. No immediate danger.
2. Didn't know if he was going in the right direction.
3. Landing after a jump because it was difficult to time it.

What did you like the most?

1. Music felt good.

2. Bear felt dangerous.
3. Jumping feels responsive and nice.

- **What made you pick up the rabbit?**

Had played the game before.

- **How did you feel about the flowers?**

Were appealing and wanted to pick them up.

- **What do you think about the bear?**

Felt the tension when the bear attacked the deer.

Analysis:

1. Interest curve rose with the bear but declined on reaching the cliff towards the end.
2. Player needs to be respawned if they fall off the cliff.
3. Since most of the players tried flying after reaching the top, we have incorporated flying at the end to reach the next island (safe house for the rabbit).

Playtest 8

Checking the Second island challenge.

Changes:

1. Creating a second island with identical challenges but going downhill.

PlayTester 1(Atul Goel)

04/09/2018

23:00 - 23:15

Observations:

1. Collected all flowers.
2. Surprised by bear attacks.
3. Took the unexpected way to the other part of the level.

What did you like the most?

1. Jump was responsive.
- **How did you feel about the flowers?**
They were appealing. Maybe they increased the timer.
 - **What do you think about the bear?**
Got surprised by the attack the first time. The bears can be more threatening.
 - **What do you think about the other island?**
There were no challenges. Going up the stone pillars in the pond level was hard. The end of the level was beautiful, felt good.

Analysis:

1. It was hard to time the jumps. The position of obstacles had to be adjusted accordingly.

2. Bears were too slow as the deer is sprinting downhill, the speed must be increased.
3. More trees in this case while going down otherwise the level seemed empty.

Playtest 9

Changes:

1. Improvements to jumps to time it better.
2. Increased the timer to allow room for making mistakes.
3. Reduced difficulty for the second island pond level.
4. Increased the speed of the bears.

PlayTester 1(Atul Goel)

04/10/2018

24:00 - 24:15

Observations:

1. Bears seemed more of a challenge.
2. Less frustrating to navigate around jumping platforms.

What was annoying?

1. Trees get in the way in the second part of the level.

What did you like the most?

1. Jump was responsive.
2. Music at the end feels good.
3. Sprinting downhill is fun.

PlayTester 2(Alan Turner)

04/10/2018

24:20 - 24:35

Observations:

1. Jumping was challenging to control.
2. Additional time was helpful as the challenge was amped up.

Analysis:

1. Going up the stone pillars in the pond was too hard. The stone heights need to be adjusted such that consecutive ones can be traversed in one jump.

Playtest 10

Changes:

1. Changed the height of the stone pillars in the pond level.

PlayTester 1(Rachel Rogers)

04/10/2018

24:35 - 24:45

Observations:

1. Jumping was difficult.
2. Didn't know if the bears were real or were just sounds.

What was annoying?

1. Couldn't use the controller well so it was difficult to navigate the first time.

What did you like the most?

1. Liked that you knew where to go.
2. Good indirect control.
3. Trees falling were cool.

Analysis:

1. Jumping can be made more easy by adjusting the height of challenges in the map, example : changing the height of the random rocks in the terrain that cause a break in your motion.

Playtest 11

Changes:

1. Added a respawn system if you fall down a big hill.
2. Added a win state at the end.

PlayTester 1(Niharika Jain)

04/10/2018

10:55 - 11:05

Observations:

1. Tried going super fast which worked well until she reached the big hill. Had trouble controlling the speed on the narrow hill and fell off.
2. It felt like the bears were too easy to handle.
3. Did not reach the second island. Was upset about it.

What was annoying?

1. Falling off the big hill.

What did you like the most?

1. Sound was good because the bear sounds forced me to keep sprinting.
I knew that there was a bear behind me and I did not want to stop.
2. Noticed the rabbit at the start and knew that I had to pick it up.
3. Got greedy with the berries that brought in the risk factor.

Analysis:

1. If player falls down the big hill, there is a glitch that refrains you from respawning at certain locations. QA needs to be performed on the game to look for these kind of bugs. Getting stuck accidentally needs to be fixed too.

PlayTester 2(Atul Goel)

04/10/2018

11:06 - 11:12

Observations:

1. Reached the other island by jumping off a tree on the big hill (found a shortcut).



What was annoying?

1. The pond level on the second island is too challenging.
2. Getting stuck due to glitches.

What did you like the most?

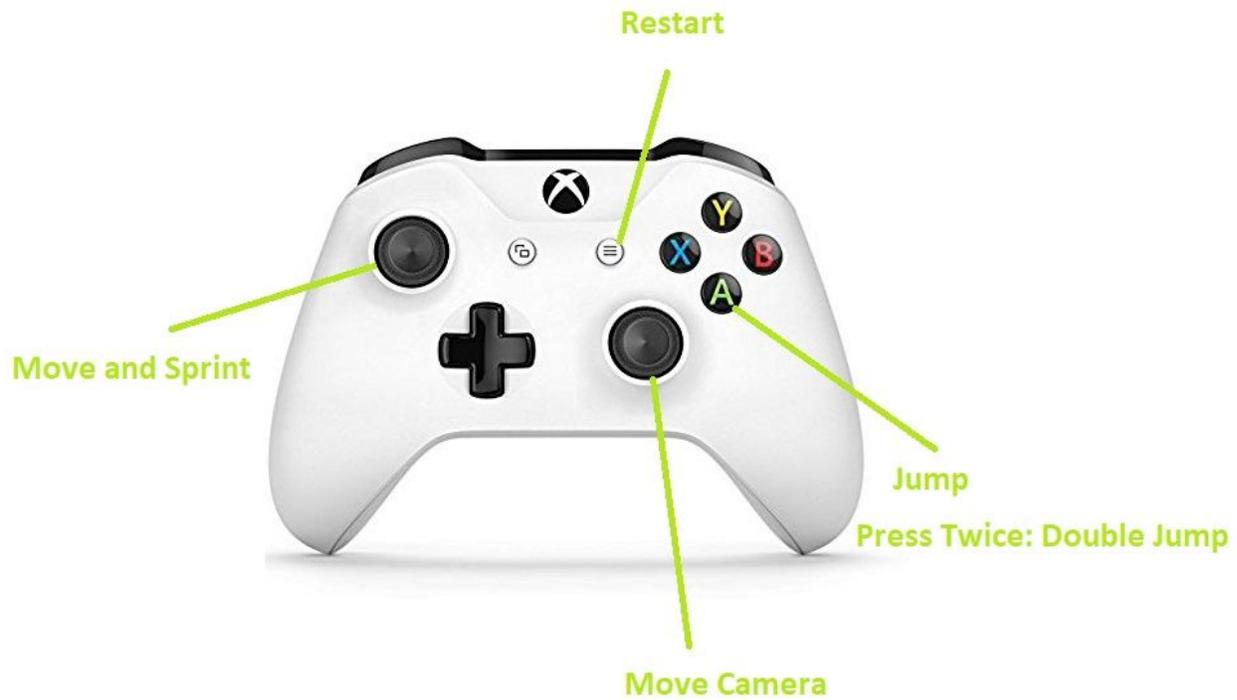
1. Aesthetics and feel of the game.
2. Sprinting downhill.

Analysis:

1. Pond level on the second island can be removed. It is challenging and brings in a stop while sprinting.
2. QA to make sure the deer does not get stuck that forces the player to restart the game.

D. Final Analysis:

1. Final Controller Interface:



2. Colours convey emotion: Colours play a very important role while conveying safety and danger. Flowers when changed to blue from green seemed more calming and players tended to migrate towards them rather than be intimidated by them.



Dangerous

Uncertain

Calm

3. AFG system: Creating an action, feedback and goal table proved to be helpful.

Action	Feedback	Goal
Running	Footprints	Move from Point A to Point B
Bear attack	Blood splash	Illicit fear
Flying/Maneuvering	Glowing feet	Move from one island to another
Descending	Running out of stamina/glow reduces	Go back to land to get more power

Although we did not put all these actions into our final mechanics, we found this method of brainstorming mechanics for our gameplay to be very useful. Each of these actions only made sense if they could fill the feedback and goal column. Once they satisfied both those columns, they seemed like potential mechanics.

4. **Interesting Avatar:** Players hadn't played with a deer before and controlling this new avatar seemed to interest players. They loved running around with the deer and they found it cute.
5. **Player's fantasies:** Players loved jumping off a ledge and transitioning into flying mode. This appealed to player's fantasies of riding their deer off of a ramp (like riding a motorcycle off a ramp).
6. **Keep changing until it feels good:** There was no formula to follow while working on the jumping mechanic for the deer. We had to keep iterating until the players felt good while they performed the jumps. There isn't a universal answer to it and this varies from game to game depending on the terrain and the kind of challenges you have. Even though the jumping felt good, the pond level still did not feel fun to navigate and we had to move the stone pillars around until the player could navigate two consequent pillars in one jump and it felt natural. The jumping mechanic did not feel good when going uphill as jumping high wasn't an option because of different terrain height. We had to make modifications like being able to double jump while going uphill to give it the same satisfying feeling. The same principle applies to placement of trees and how long before they start falling. Again, there is no universal answer to this and we had to keep changing it until

the players said that they had enough time to react to it. We were always able to find a floor and ceil value for it and it was only a matter of varying between those values until it felt the right amount of challenge.

A fun toy does not always make a fun mechanic. Flying was good, but there were not a lot of things to do when flying.

E. Things that could have been done differently:

1. Develop a strong goal for the game first. We knew firsthand what feelings we wanted the players to experience and without defining a strong end goal for the game, we worked on invoking those feelings within the player. This did not come through well, as the players could feel tension and beauty of the world but did not clearly know what they were aiming for.
2. More focus on QA (quality assurance) testing which is separate from normal playtesting to ensure the game is bug-free.
3. Iteration on the control scheme could prove beneficial for further improvements. A good way to start developing intuitive control scheme would be to see which buttons players usually use for common mechanics like running and jumping.
4. Next would be to try out different control schemes for new mechanics like flying as they are less common.

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F. Cost Breakdown:

Distribution: Online Sales

Consumer Pays	Distributor	Developer
\$7	\$3	\$4