

PANDA APOCALYPSE.

“Pandas. Never to be trusted.”

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Characters in the game:

Genre: 3rd person shooter

World: Game is played on a snowy terrain with a few dying trees and halloween pumpkins lying around.

Characters:

- The Joker: This is the main character of the game, controlled by the user. His task is to survive by killing pandas in order to prevent them from eating him.
 - Abilities: Can walk, run, shoot bullets, kick, and jump.
 - Gets hurt if touched by pandas.
- Evil Pandas: These are the enemies. They follow and try to eat The Joker.
 - Abilities: Can walk.
 - Constantly follow The Joker.
 - get hurt if shot by bullets or kicked by the joker.

Storyline

The game is based in PandaLand. Once upon a time, there used to be these cute little creatures called Pandas. They were lazy, funny, and adorable. But that is what we humans thought. Pandas are actually an evil alien race that spread from planet to planet, spreading destruction and terror everywhere. They ruled earth several billion years ago. But our super ancestors (Dinosaurs) fought against them with great valour and selflessness; and managed to save planet Earth from doom. But the pandas went into hiding (and became cute); until few days back! Now they seek to kill all.

Our player, The Joker, lands up on a snowy terrain, where he is attacked by waves of evil pandas. And the battle between him and the pandas begins. He fights till his last breath trying to save humanity from the wrath of the pandas.

Game Details

The camera is always behind the joker, and can be navigated by the mouse. It gives a third person view of the joker from behind. On moving the mouse, right or left, the joker turns right or left (and so does the camera). On moving the mouse up/down, the camera tilts upward/downward.

Controls:

- On Pressing w, the joker moves forward.
- on pressing s, the joker moves backward.
- on pressing d, the joker moves towards his right
- on pressing a, the joker moves towards his left.
- If shift is pressed while pressing W/A/S/D, the joker runs.
- On pressing Left Click, the joker shoots bullets in the forward direction.
- On pressing Right Click, the joker kicks, damaging any nearby pandas
- On pressing Space, the user jumps in the air.
- On pressing Q, the camera moves over to the front of the joker, and gives a reverse view of the joker.
- On moving the mouse right/left, the joker turns right/left.

Objective of the game: to survive as long as possible and fight the pandas.

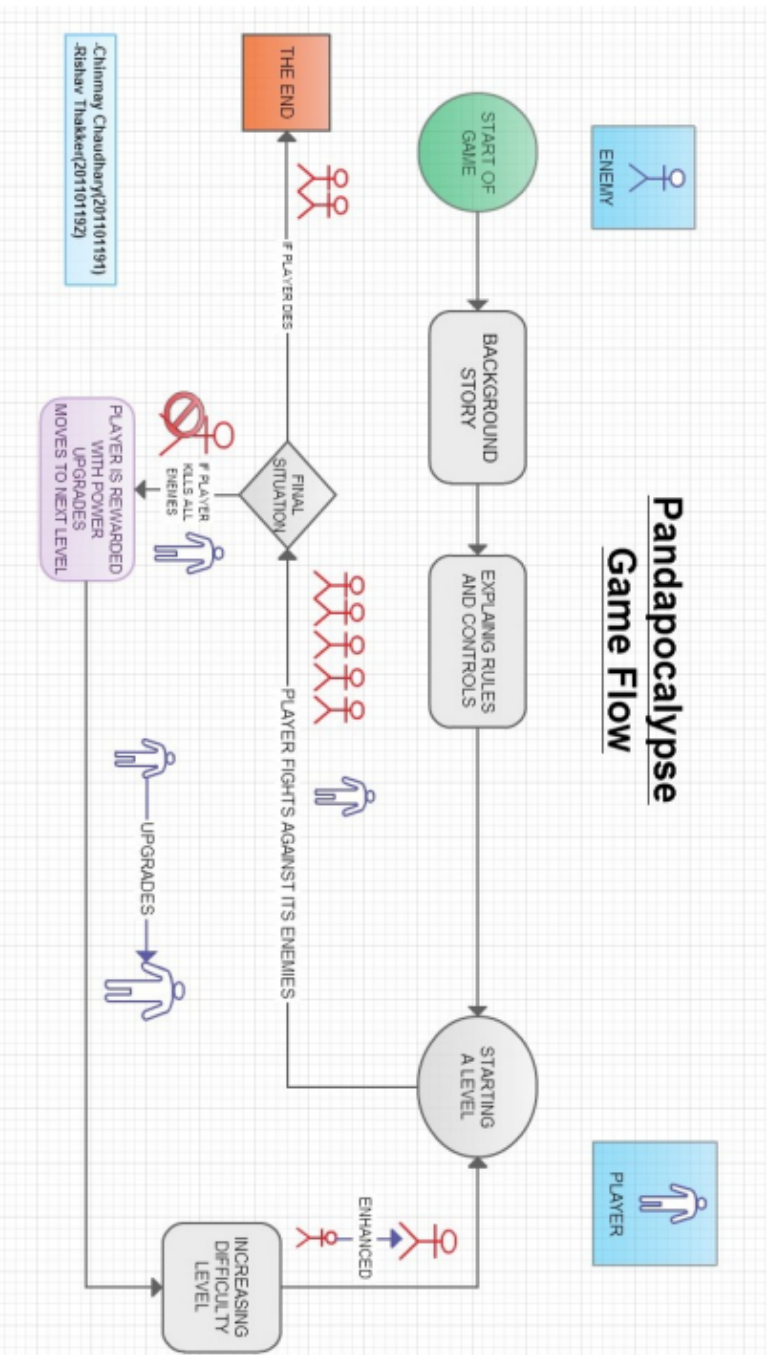
Rules of the game

- The Joker can move about in any direction.
- The joker has an initial health of 100
- If the joker collides with a panda, it's health reduces.
- if the joker's health goes down to 0, he dies, and game over.
- the game has different levels, starting from level 0 and going on till as long as the user can last in the game.
- The joker's max shooting speed and movement speed increases with each level.
- Evil pandas spawn in batches of five, once at the beginning of each level.
- Pandas have varying health and movement speed, depending on each level. As the levels increase, the pandas' health also increases. $\text{health of panda} = 10 + 30 * \text{level}$
- When a bullet hits a panda, his health goes down by 10. When a panda is kicked by the joker, his health goes down by 30
- Pandas constantly chase the joker, following him where he goes.
- The objective of the player is to make the joker survive for as long as possible by killing the

incoming pandas.

Flow Diagram of the game:

Pandapocalypse Game Flow



î Pandapocalypse | ffm“ ENEMY II m PLAYER

STARTING A LEVEL

ENHANCED

PLAYER FIGHTS AGAINST ITS ENEMIES

THE END PLAYER DIES

INCREASING DIFFICULTY LEVEL

MOVES TO NEXT I_LEVEL

Internal Working of the game:

- **Joker has mass 100**
- **Joker Movement:** A function (task) periodically checks for whether the user has pressed W,A,S and/or D.
 - According to the combination of the keys pressed, the direction of the movement of the Joker is calculated, and the Joker's position is set in this direction.
 - The keys currently pressed by the user are saved using event handlers for the respective keys.
 - If the shift key is pressed while moving, the Joker is made to run (the joker's rate of change of position is increased if 'shift' is pressed.)
 - Animations for walking or running are played as long as the Joker is walking/running.
- **Joker turning + Camera Movement:** A function (task) periodically checks for mouse movements.
 - The Joker is made to turn in coordination with the mouse. Since the camera always follows the joker, the camera also turns. Thus horizontal navigation of the camera is achieved.
 - The camera's vertical angle is set in coordination with the vertical movement of the mouse.
 - After each frame (after the camera and joker have been set for that frame), the mouse's position is reset to the center of the screen. This way, the mouse never goes out of the screen.
 - The keys currently pressed by the user are saved using event handlers for the respective keys.
- **Jumping:** An event handler is assigned to the pressing and releasing of 'space'
 - When the user presses 'space', a function is called which makes the Joker jump.
 - This function increases the Joker's vertical velocity, such that the Joker gets launched in the air.
 - The 'jump' animation is played.
 - All movement activities (like walk, run, more jumping) are disabled while the user is jumping.
 - After the user has finished jumping, the previous animation which was playing is set to play again

- Shooting: An event handler is assigned to Mouse1 button (left click)
 - On pressing the mouse1 button, bullets are fired in the direction in which the

camera is facing

- If the mouse1 button is pressed, the bullets keep getting fired.
- Every time a bullet is fired, the Joker's 'shooting' animation, and a gunshot sound is played.
- After the shooting animation is completed (and if mouse1 is not pressed) the previous animation is looped again.
- **Kicking:** An event handler is assigned to Mouse3 button (right click)
 - On pressing the mouse3 button, all the pandas within a specific radius of the Joker are sent back a bit.
 - This is done by setting the panda's Y velocity to some negative value. Since the pandas are facing the Joker, they get pushed back.
 - The affected pandas' health is also reduced.
 - All other actions are disabled while the Joker is kicking. Thus once pressed, the user cannot do anything until the kicking animation gets over.
- **Pandas have mass 150**
- **Panda spawning:**
 - 5 pandas spawn at the beginning of each level.
 - Pandas have health and movement speed proportional to the level of the game.
- **Panda movement:** A function (task) is periodically called to make the pandas move. In every function call call:
 - Each panda is set to look at the Joker
 - Each panda's position relative to itself is set to some positive value. Thus they keep moving in the direction of the joker.
- **Panda bullet collision:** When the bullets collide into the panda, an event is called (using the physics collision handler)
 - The bullet is destroyed on collision
 - The panda's health is reduced on each collision.
- **Pandas are killed if their health goes below 0**
 - When panda's are killed their nodes are removed and a sound is played (dying sound)
- Whenever the pandas collide with the joker, the Joker's health is reduced and a 'hurt' sound is played.

- **Game is over if Joker's health goes below 0**
 - A final death sound is played, and score is displayed on the screen.
 - Game stops.
- The terrain does not have walls defined. Thus if the Joker starts falling out of the terrain, it's Z velocity is increased, due to which it jumps back into the terrain.

Dramatic elements used:

- A completely snowy terrain, without any vegetation except for some dried out trees and few halloween pumpkins.
- Dramatic music playing in the background at all times
- sound effects for gunshots, pandas dying, and the joker getting hurt.
- Pandas are twice as big as the joker.

Player experience:

This game is designed to give the player a spooky yet fun experience, filled with action and a bit of planning (when to attack the pandas, when to run, finding best spots on the map to camp, etc). The constant dramatic music that plays, along with the suddenly popping up evil never lets the user take his/her mind off the game. Pandapocalypse can be a good stress reliever.

What we expect the player to learn:

After playing this game, the player will gain experience in most third person shooting style games. His/her reflexes will improve.

Resources used:

- We have used the Panda3D game engine, along with it's physics engine to create our game ((in Python)
- We have created the executable (and installer) using packPanda.
- We have download blender models of the joker, the gun, and the pumpkin from the internet, because we do not know how to create models fluently in blender yet. However, all the animations of the models have been created by by us (in blender, using the downloaded models). We have then converted the blender files into .egg files (using yabee exporter), and used these egg files as actors/models in our game.

<http://tf3dm.com/3dmodel/joker72240.html>

<http://tf3dm.com/3dmodel/pumpkin57117.html>

<http://tf3dm.com/3dmodel/leenfield30353360.html>

- The model of the environment and the panda has been picked up from the panda3d tutorial.
- We have either created the audio files, or downloaded freetouse audio from the internet for the background music and the sound effects.