

Game Concept

Game Title:

Dunk A Prof.

Summary:

Dunk-A-Prof is a computer game simulating festival carnival dunking games. Dunk victims appear on a platform over their liquid-filled tanks. Victims are Professors, Deans, and Trustees. The player throws objects to strike targets designated to specific dunk victims; and thereby dunking the targeted character. Dunked Professors and Deans sink into blue water and emerge safely, whereas Trustees fall in green acid and emerge skeletal.

Purpose:

This is a stress-reliever game where target audience are College Students.

Theme:

Cartoonish College Setting.

Dunk-able characters:

- Professor:** College Professor.
- Dean:** College Dean.
- Trustee:** falls into an acid tank and shreds the skin off.

Recommended Minimum System Requirements

Recommended Hardware Requirements:

CPU: 1.2Ghz Single Core Processor
RAM: 512MB
Graphics: 64MB Video Memory
Display: 800x600px with 32bit Colors
Disk Space: 256MB Free Space

Recommended Software Requirements:

Programming Language:

Oracle Java SE 8.
Standard API such as:
java.awt
java.io
javax.imageio
javax.sound
javax.swing

Target OS Platform:

Oracle Java 1.8.0 VM Capable OS such as:
-Ubuntu Linux 12.04 LTS or Later
-Windows Vista Or Later
-Mac OS X 10.8.3+
For more check: <https://www.java.com/en/download/help/sysreq.xml>

Disclaimer:

This is an ongoing project. Any part of the written specifications may change due to various circumstances. Although specs team will thrive to ensure stability of the ongoing increasing and improvement of specifications; most of the specifications can be considered **tentative**. Undetermined specifications that have large impacts on the project, will be placed on the **Ongoing Discussion** section as things to watch out on not to be solidly implemented yet.

Color Coding:

Red: Do not implement since specs is still in progress
Blue: Can be implemented but specs needs to add more descriptive detail
Green: Can be implemented right away

Current Game Specifications

Window

Application Window: is the rectangular area in which contains the game content and a surrounding frame containing the minimize, maximize and close button.

Application Window Size:

At least 800px wide and 600px tall. The resulting application window size will depend on the size of the surrounding frame. This depends on the GUI theme that the running Operating System uses.

Minimize Button:

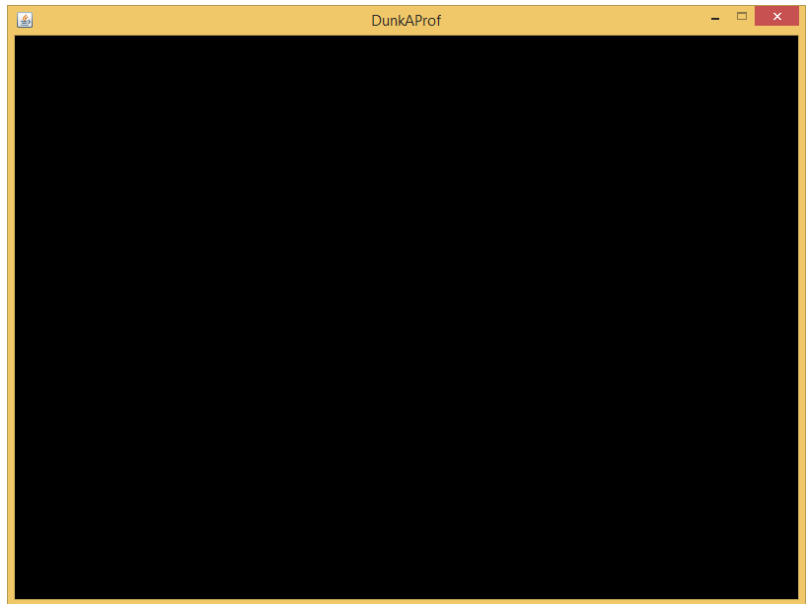
Minimizes the game window and pauses the game. The game is not resumed when the window is restored. The player has to manually resume the game.

Maximize Button:

Is not used and therefore disabled.

Close Button:

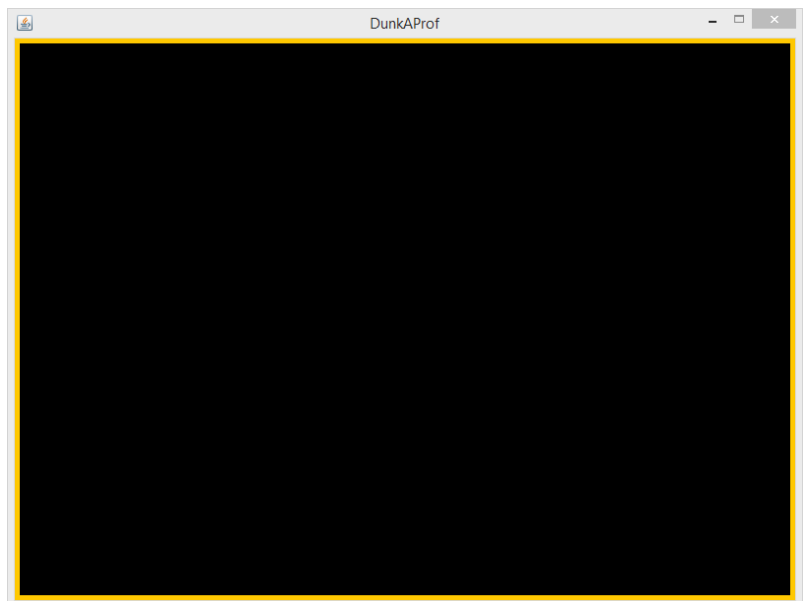
Closes the game window and terminates the application.



Game Window: is the rectangular area in which displays the content of the game.

Game Window Size: (This does not include the outer-frame of the Application Window.)

Width: 800px
Height: 600px



Game Components:

Dunk-able Characters:

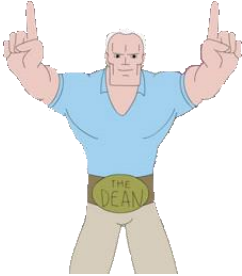


These are cartoon characters that can be dunked into a liquid filled tank.

Resizing Images:

Images are scaled using java's built-in **Scaled Default** algorithm.

Bounding Box:

Used for collision detection. The size is the same as the corresponding characters.

| College Dean: | College Professor: | Trustee: Animated using 28 images |
|---|---|---|
| Size: Width: 78px Height: 128px Starting Coordinates: x-position: 361px y-position: 146px Moves to: x-position: 361px y-position: 105px  | Size: Width: 69px Height: 120px Starting Coordinates: x-position: 80px y-position: 157px Moves to: x-position: 80px y-position: 105px  | Size: Width: 80px Height: 116px Starting Coordinates: x-position: 666px y-position: 198px Moves to: x-position: 666px y-position: 105px  |

Dunk Tank:

These are liquid containers in which the characters will be dunked into.

Size:

Width: 130px
Height: 210px

Position:

| Tank #1: | Tank #2: | Tank #3: |
|--|---------------------------------------|---------------------------------------|
| x-position: 640px y-position: 195px | x-position: 335x y-position: 195px | x-position: 11px y-position: 195px |

| Water Tank: | Acid Tank |
|---|---|
| Characters dunked into this tank emerge safely from it. For characters: -Professor -Dean | Characters dunked into this tank shreds of its skin and emerge skeletal. For characters: -Trustee |



Slider:

It is a bar that indicates player's position in which the player will shot from. Even though players have control of when to shoot a projectile, players don't have control on whether or when the slider moves left and/or right.

Size:

Width: 128px

Height: 24px



Movement:

Starting Position:

x-position: 0px

y-position: 500px

End Position:

x-position: 750px

y-position: 500px

Speed:

5px per refresh
cycle



Projectile:

Is the object being shot out of slider. When the projectile collides with the target, the designated character gets dunked.

Projectile can be shot at an angle using left, up or right arrow keys.

Size:

Width: 20px

Height: 20px

Movement:

Starting Position:

Depends on the **Slider**

End Position:

Projectile disappears after
reaching outside the end of the
Game Screen.

Speed:

30px per refresh cycle

Bounding Box:

Same size as the projectile. Used
for collision detection.



Appears:

Disappears:



Game Mechanics

Collision and Dunking Action:

Once the character is hit, the projectile disappears. Also, once the character is dipped into the tank, a puff of some appears.

Collision: The dunk victims are the target themselves. Each character falls into the dunk tank once their bounding box overlaps with the bounding box of the projectile. The projectile should disappear after colliding with the target.



Dunking: The character then falls at a rate of 5px per cycle to their tank. The character then 'undunks' and vanishes from the screen. They then reappear in the starting position.



Timer:

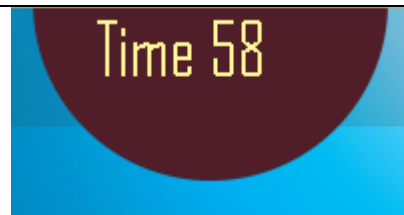
It is a text display placed on the top-left of the screen; that shows many seconds does the player have left for the round.

Font:

Face: Agency FB Regular
Size: 36pt

Position:

x-position: 145px
y-position: 5px



Game Round Ending Condition:

The game clock counts down from 60 seconds to 0 seconds. When the clock reaches 0 a game over message appears on the screen.



Score Counter:

This counter shows how many characters have been dunked in total.

Font:

Face: Agency FB Regular

Size: 36Pt

Position:

x-position: 40px

y-position: 570px

Score 2

Number Of Tries Label:

(currently not being used)

Font:

Face: Agency FB Regular

Size: 48Pt

Position:

x-position: 690px

y-position: 500px

Lives

In-Game Controls:

In-Game:

Space-Bar: Throws Objects

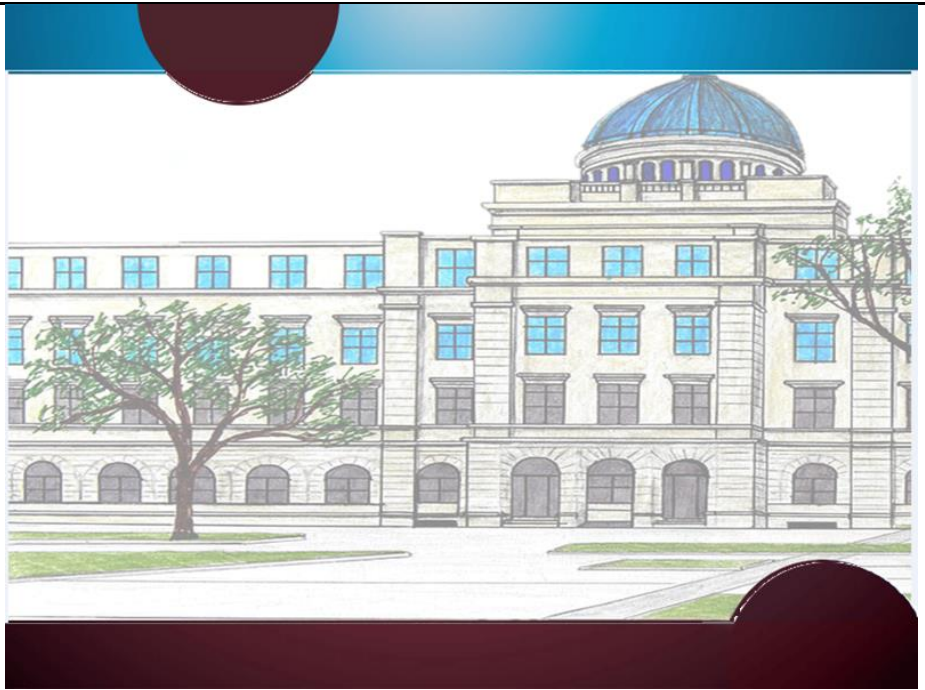
P Key: Pauses/Resumes Game

Background Image:

Size:

Width: 800px

Height: 600px



Additions and Changes to Be Implemented

Projectile after Collision: The projectile should disappear after colliding with the target.

In-Game Background Image: College background for the in-game background. (It would be nice if the college were to have college students surrounding the dunk victims.)

Acid Tank: in which the trustee will be dunked into and shred is skin off.

Main Menu: completely white at the moment with the following options

Background Image: (to be determined)

Options:

Start Game: starts the game

Difficulty Level: allows players to choose difficulty level?

How to Play: (static image slide show showing the controls and objective)

Exit: exits the game

Pressing the Enter Key After Game Round Ends: Instead of closing the game, the game loops back to the Main Menu.

Game Controls:

Main Menu:

Up-Down Arrow Keys: Changes Menu Selection

Enter Key: Triggers Selected Option

In-Game:

Escape Key: Pauses/Resumes Game

Tries Counter Icons:

Starting Number Of Tries: 3

Size:

Width: 45px

Height: 47px

Position:

x-position: 650px

y-position: 550px



Sounds: (should sounds be preloaded into memory)

Main Menu:

Background Music: (to be determined)

In-Game:

Background Music: (same as Main Menu?)

Shooting:

Whoosh sound indicating thrown object is flying

+FilePath:"dunkaprof\graphics\Swish sound effect (2).mp3" | Interval:2s to 3s.

Only the swish part.

Player Misses Target/Character:

1) Taunt from character

2) Boos from the audience

+FilePath:"dunkaprof\graphics\flat\soundfx\Background

Noises\239595__xtrgamr__crowdbooing-01.wav" | Interval: 1.5s to 2.5s

Player Hits the Target/Character: (entire sequence put together should not last longer than 1.7s?)

1) Click/Pop indicating hit

+For hitting Character-

FilePath:"dunkaprof\graphics\flat\soundfx\wav3\Punch.wav" | Interval:0.5s to

1.5s. Only first hit sound.

+For hitting target- FilePath:"dunkaprof\graphics\Soundfiles\Sword clash sound effect (2).mp3" | Interval:2.5s to 3.2s. Only the metal sound.

2) Character Curses

3) Splash(Prof, Dean) / Scream(Trustee)

+FilePath:" dunkaprof\graphics\flat\soundfx\Water or Acid sounds61015__kayyy__splash.wav" | Interval:0s to 1s. Only the dipping part.

4) Character Gargles under Water(Prof, Dean) / Sizzling Sound(Trustee)

+Missing Gargling sound

+Needs a strong Sizzling sound like when something is strongly frying under oil

5) Cheers from the audience

+FilePath:"dunkaprof\graphics\flat\soundfx\Background Noises\221567__alaskarobotics__cheering-and-clapping-crowd-2.wav" | Interval:2s to 3s.

How characters re-spawn after being dunked:

Dean/Professors: Blink and appear in place.

Trustee: descend from the sky with the holy "ooohhh" angelic sound.

Ongoing Discussion: (formerly known as Additional Features, Addition Packs)

(these features are to be implemented only after a workable game is in place).

-Dunk condition:

Each character will have a different "health bar" associated with it that makes it more or less difficult to dunk them. Say the professor has a health level of 10, the dean has a health level of 15, and the trustee has a health level of 20.

The level of graphics related to dunked character should be correspondingly rewarding.

Every character has a bar that keeps track of how close they are to falling. The bar can go up or down. If the character's target is hit the bar decreases. If the target passes the character's target n times the bar increases by some percentage. If the bar reaches 0% the character gets dunked.

Suggesting health bar gauge of value 30. 3 hits for target. 1 hit for character.

-Dunk-able characters reactions: Are triggered

-Hitting:

-Professor: "I will fail you"

-Dean: "I will expel you"

-Trustee: "I will close down your College"

-Missing:

- Professor taunts when user misses n times: "you're a d+ player at best" (or something else)
- Dean taunts when user misses n times: "you'll never get into my graduate program" (or something else)
- Trustee taunts when user misses n times: "with students like you I'm clearly wasting my money" (or something)
- Professor pleads when user scores against them: "don't worry I'm grading from the curve" (or something)
- Dean pleads when user scores against them: "Please, a recommendation from me is like gold in your field" (or...)
- Trustee pleads when user scores against them: "Stop, Don't you know who I am".

-How to Lose:

-Life based: A player starts with a limited number of lives. Once the player runs out of lives, it's game over.

-Time based: Players don't lose. Game finishes when time countdown is 0.

-Duration: every game (Round? Turn? Play-through?) will last for about 1 to 2 minutes.

-All dunk-able characters down: If any character's health bar remains at 100% for n passes of the target the user loses. The game is finished once all characters are down.

Winning objective:

All dunk-able characters indefinitely re-spawn once they are dunked. Players strive to dunk as many dunk-able characters as possible during the limited time in order to score as many points as possible.

(possible alternative) I think the winning objective should be to dunk all three characters. The characters should not re-spawn.

-Game Difficulty Modes: Easy, Medium and Hard.

-Slider based:

-Multiple sliders: that players have to align correctly for a dunk-able character to fall.

-Slower/Faster Sliders: which will make it easier/harder for players to miss the target.

-Wider/Narrower Sliders/Target Range: Either make the slider or target wider or narrower to determine how precise the slider and the target have to align.

-Target shooting based:

-Multiple targets: that players have to align correctly for a dunk-able character to fall.

-Slower/Faster Sliders: which will make it easier/harder for players to miss the target.

-Wind factor: the toss-able object will deviate a small amount depending on the wind factor.

-Different objects to be thrown: tennis ball, baseball, bowling ball, darts, etc.

-Point value system: +1prof, +1dean, +3trustee, -2miss. (To be determined)

-How long is a refresh cycle? How often does the images refresh?

-What api packages are being used for sound playback? What about font, image and animation display?

-Should projectile disappear on collision?

-Make the slider and projectile smaller

-Remove the cage from the tank?

Scream Variations:

-Whooooaa MY SUIT (dean)

-Whyyyyyy YOOUUUG (prof)

-NOOOOOO AARRRGH (trustee)

-Score Table: announcing the top 10 high score players. And able to type 3 to 5 letters.

-Game tutorial: called "Blackboard" appearing on the start screen.

-When to integrate annoying sounds from "dunkaprof\graphics\flat\soundfx\Annoying Sounds"?

Notes:

-Image scaling is to be done in-game by backbone until we have a finalized set of graphical images then graphics can scale the images to their real size.

-Decide the base size (using the character's height and width) in which everything is relatively proportional to it.

-Determine the max and min size of the dunk-able characters.

-Make the projectile smaller

-Add acid tank

-Write specs on the emerge skeletal part

-Reposition text for time. Score and number tries

-Background music approving

-Specify sampling rate for sounds

Game References: These are some flash games of the same game concept that we might draw inspiration and reference material from.

<http://boomansion.net/media/flash2/games/dunktank.php>

http://www.y8.com/games/Da_Dunk_Tank_Dudes

<https://www.turkeyhill.com/fun/dunk-tank-game/dunk-tank-game.aspx>