Factory Fiasco

- Level Design by Mohan Subramanian

Interactive Objects

- Vertical Conveyor
- Button (Start / Reverse)

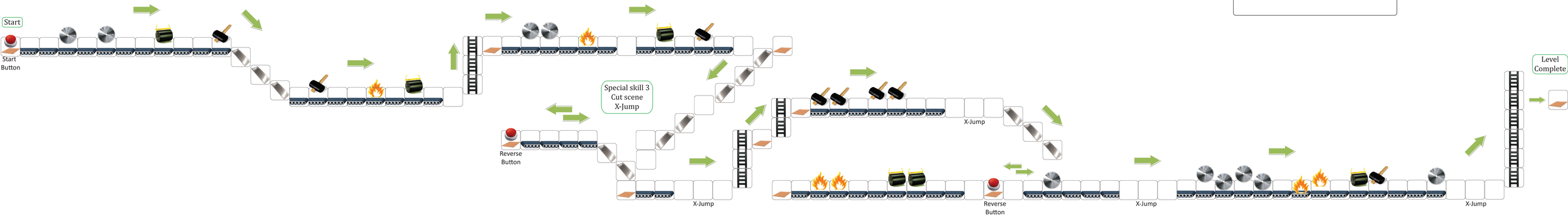
Surfaces

- Each cube represents a single game unit (1 meter)

- Conveyor belt moving in right direction
- Conveyor belt moving in left direction
- Resting platform
- Chute

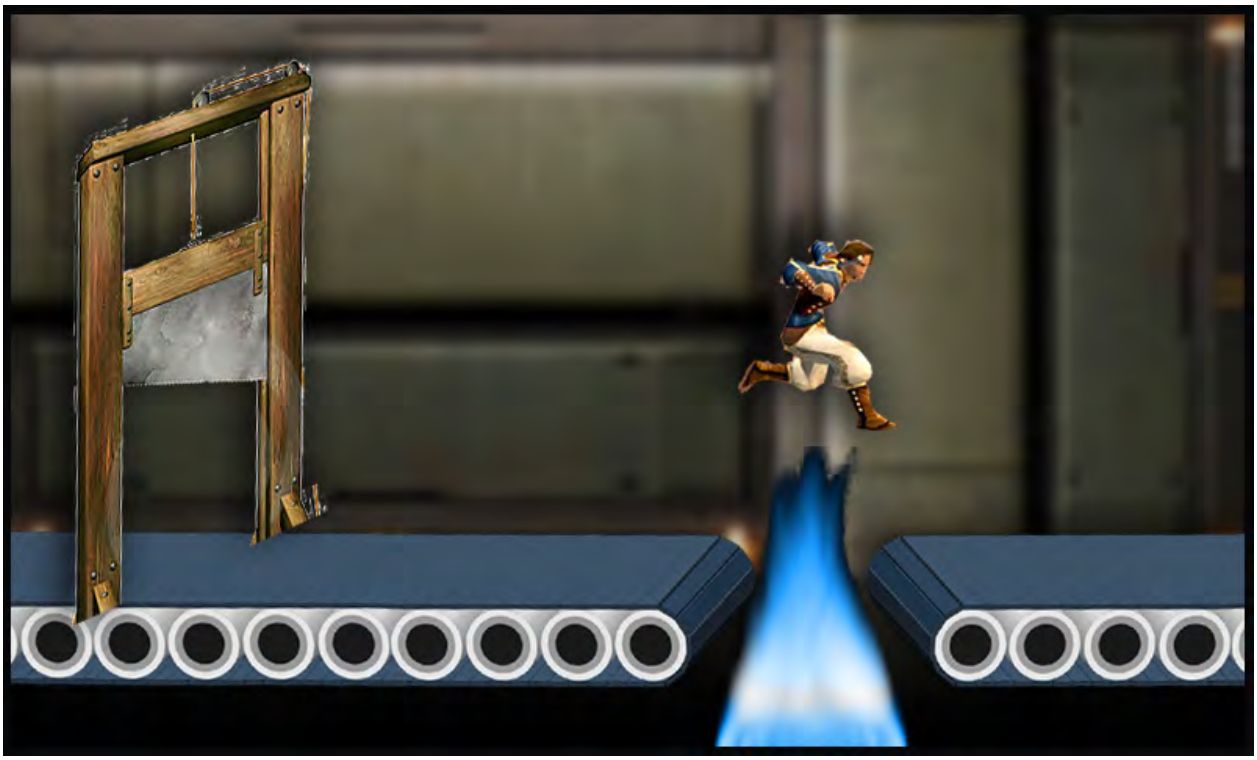
Enemies

- Chopping Blades
- Burners
- Crushing Rollers
- Stomping Hammers



Mobile [iOS] Game

Level Design



(Mock-up screenshot of the game)

"Factory Fiasco"

Design, Illustration and Documentation by

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Level design document :

http://moreaboutmohan.com/uploads/factory_level.pdf

Contents

1. Goal

To design a sample level for a side-scrolling, platformer game for iOS devices. I have recently become a hardcore mobile gamer, especially using iPad/iPod Touch. My mission is to design an engaging level that has fast paced, yet shorter gameplay, which could act as a precursor to be developed into a full-fledged game.

Reference: Temple Run, Wind-up Knight, Ninjump

1.1 Research

Before the design process, I researched on Mobile games to have a better understanding of the market and the demographics. Some of my key findings:

- Unlike Facebook games, mobile games have more hardcore gamers than casual gamers, especially with respect to smart phones.
- Mobile gamers are mostly older: Average age of mobile gamers is 38 years.
- Mobile gamers play in short bursts: Average time spent playing mobile games is less than an hour per week.
- Increase in mobile phone gameplay majorly because: More free games, better performing mobile phones and increased graphics in mobile games.
- Main motivation to play mobile games: 52% of gamers say “fun/easy to play” and 47% say challenging.

2. Context

2.1 Main Character

Our main character is a young boy of 11, Robby. He is fairly tall, not so well-built, yet highly athletic. He is hyper-active and over-enthusiastic, complemented by his inquisitiveness about mysteries around him. He is good-at-heart though he is a bit naughty, a trouble-maker. He always has this scrubby outlook.

2.2 Background setting

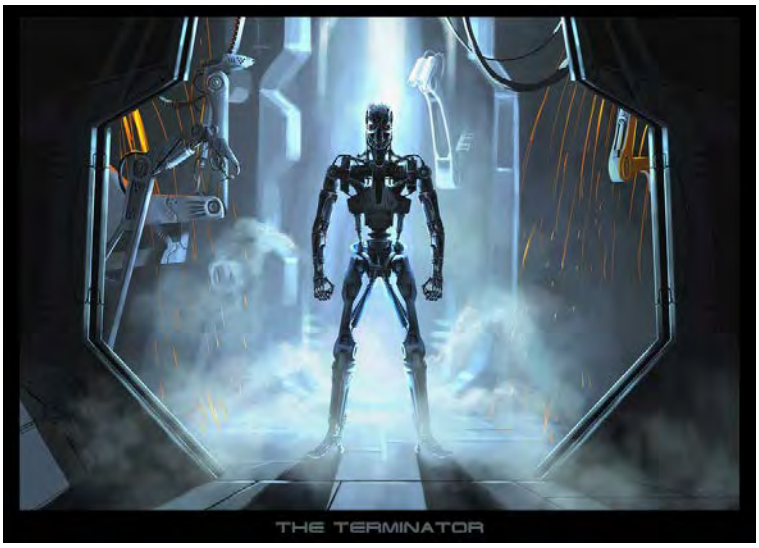
Our game has a setting of the insides of a factory construction plant. Robby sneaks into a shady factory out of curiosity. He accidently falls down on to an automated conveyor system. This intricate conveyor system is used for assembling machinery parts. It has choppers, grinders, beams, stompers and burners. Hence the goal of the game is "Help Robby evade the perils and escape from the factory".

2.3 Cultural References

- **Star wars 2: Attack of the clones** - The frantic action scene in Geonosis where Padme accidentally falls on the droid factory assembly line and struggles a lot before she escapes. (Refer **https://vimeo.com/49943365**)

- **Chicken Run** - The action scene in which Ginger is fed to the 'Pie Machine' to be made into a chicken pie. Rocky rescues her as they both escape from the perils of the machine.

2.4 Aesthetics



The game has a gloomy tone to it to indicate the danger and urgency. The factory has a gritty texture. It is not-so-brightly light with blue lights and a bit a fog, but with a lot of circuit lights in the background to give a sci-fi feel. Red, green and yellow backdrop lights to indicate impending danger or safe zones.

3. Gameplay

3.1 Skills

Basic abilities of our main character are:

1. Move to the right
2. Move to the left
3. Jump (Jump height = twice the character sprite height)
4. Crouch

Along with moving left/right, jumping and crouching, player has 2 extra skills and 1 Special skill

1. Slide - A short burst of speed, while moving left or right

2. Rollover - somersault roll in the forward direction to quickly go under an obstacle.

3. Extended Jump (Special) - Jump higher from a standing stance. You can jump 'further' if you can combine with 'slide' action (Slide + Jump = Jump further)

This special skill will be unlocked at a specific point in the level (i.e. not available from the beginning of the level).

3.2 Controls

The controls of the game are designed taking advantage of iPhone/iPad features:

- 1 virtual pad.
- Double input (i.e. two simultaneous inputs on different parts of screen can be detected)

1. Move to the right: Single-finger swipe-right	
2. Move to the left: Single-finger swipe-left	

3. Jump: Single-finger swipe-up	
4. Crouch: Single-finger swipe-down	
5. Special 1: Slide left or right two-finger swipe-right /swipe-left	
6. Special 2 : Rollover two-finger swipe-down	
7. Special 3 : Extended-Jump two-finger swipe-up (combine with "two-finger swipe-right/left" to jump further in that direction)	

3.3 Elements: Surfaces

This part defines the basic level design elements of our game.

Surface #1: Moving Conveyor Belt

Properties:

Objects (including player) that land on the top part of this belt would slowly be carried in the direction in which the belt is moving. Player can further perform any action (move, jump, slide, crouch, roll) while on the belt.

Surface #2: Conveyor Chute

Properties:

Objects (including player) that land on the chute, will quickly slide to a lower level of the conveyor system. Player when on the chute cannot perform any action (except jumping) due to the high velocity.

Surface #3: Resting Platform

Properties:

Objects (including player) collide with the top portion of this stationary surface. Player can perform any action on this surface.

3.4 Elements: Interactive Elements

Player can interact with these elements to reach new places in the level, collect bonuses etc.

Interactive element #1: Vertical Conveyors

Vertical conveyors have small platforms that carry small objects on to a higher level in the conveyor system. The player can jump on one of these platforms to reach higher parts. Of course, the platforms cannot bear the weight of the player for a long time, so they contract after 2 seconds, causing the player to fall down. Hence the player should jump before 2 seconds.

Interactive element #2: Floor Buttons

The player lands on the buttons on the floor to activate a different conveyor or sometimes even reverse a conveyor.

3.5 Elements: Enemies

This part defines the basic enemies that the player is supposed to avoid.

Enemy #1: Robotic Arms

The Robotic arms of the conveyor can be fitted with different harmful parts at its head, like Chopping blades, stomping hammers and crushing rollers. Each part has a different strike time, rest time, damage caused and action to evade.

	Strike time	Rest time	Damage %	Evasive action
Blades	0.5 sec	2 sec	25%	Slide
Hammer	1 sec	1 sec	33%	Roll over
Rollers	3 sec	3 sec	50%	Crouch

Enemy #2: Fire breathing burners

Burners throw flames at regular intervals in a specific direction like top-down or bottom-up or even across the belt. The flame time and rest time could vary across the different burners and player has to deduce the timing before planning to cross it. The damage caused depends on the time exposed to the flame.

3.6 Rewards

- **In-Game Reward (during a level):**
  a) Health regenerate - Health begins to regenerate automatically after a short cool-down-time. The longer the player goes without getting hurt, the faster the health regenerates.
  b) U.I feedback - U.I gives feedback for each action performed to evade a peril, based on the execution timing. 'Perfect', 'Good' and 'Miss'.

- **Out-Game Reward (in-between levels):**
  Score based on U.I feedback - Each U.I feedback ('Perfect', 'Good', 'Miss') is associated with a score that adds up. Also, there are multipliers for combo actions. These scores are added and presented at the end of the level. These scores can be used to buy/unlock health upgrades and life upgrades.

- **Expected Behavior:**
  The in-game structure rewards players for playing flawlessly. It also gives constant feedback about how they are performing at every point of the level. Hence this encourages the players to learn and master the gameplay soon.
  On the other hand, the out-game structure lets the player plan their upgrades, thus concentrating on their weaknesses. The combo-score-system encourages players to push boundaries and take some risks.

4. Demographics

4.1 Appeal to Casual Gamers

Though the game is designed for hardcore gamers, it would appeal to Casual gamers too for the following features

1. Intuitive controls - Based on the success of Temple Run, we can say for sure that the intuitive swipe controls appeal the casual audience.

2. Easy to understand goals - Game design presents a very simple goal that makes it appealing for casual gamers to pick it up and play on the fly.

3. Constant feedback - The U.I feedback constantly encourages casual gamers to perform more.

4.2 Appeal to Mass-market audience

I would like to add more features in the future to make the appealing to the mass-market audience.

1. **Different modes** - Allow the player to play the same level in different modes like 'Survival mode' and 'Time challenge' etc**.**
2. **Compete with friends** - Features to share the scores in iOS Game center, Twitter and Facebook etc. This creates healthy competition among friends and also increases acquisition.
3. **Challenge yourself** - Create many challenging objectives to complete.

4.3 Appeal to Girl audience?

The current game of evading death in a shady factory has a dark tone that might not be welcomed by girl audience. By changing the tone and setting of the game, without altering the gameplay elements, the game can be made appealing to the girl audience. For instance, the main character can be changed to a young princess riding a horse that constantly runs. The setting can be a bright forest instead of a forest. We could replace the surfaces with forest floor, mud slides etc. The enemies could be the twigs, branches and trunks of the trees in the forest. Death could be replaced by falling off the horse, rendering unconscious etc. Thus, these changes would appeal to the girl audience.