**A Test of Metal**

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I. GENERAL INFORMATION

This is a platform game about ATM that has to participate in an obstacle course to reach The Tower and escape. The robot ATM will be accompanied by a panda. The two will have to work together in order to escape.

II. DETAILED GAME DESCRIPTION

* Basic Concept –

ATM has to run obstacle courses and collect valuable items to clear the game with the help of Pete, another prisoner in a cell. Pete will be a NPC with his own scripted basic AI. The scripted AI of Pete will be apparent in stage 2.

\* What is the tone? What is the basic narrative? What is the "heart" of the story? Is it a linear story?

The game has a light, cheery tone.

The story will be linear.

* Objective –

Get to the end of the level(s).

* Gameplay –

The player will be allowed to run and jump across parts of the map. Also, the player will be able to collect valuable items by touching them. The entire gameplay focuses on puzzles, such as timed switches, unlockable doors, and disappearing platforms in respect to time.

* AI component –

Pete’s will initiate dialogues with ATM when ATM is within a certain range. After unlocking the door of Pete’s cell, he will walk out of his cell. In stage 2, Pete will obey player’s input, commanding Pete to either go forward or stop. At the invisible platform portion of stage 2, Pete will guide the player through the invisible maze. In the later portion of stage 2, ATM will be able to issue two commands to Pete, instructing him to go forward or stop in place.

* What is the planned interface?

Keyboard for movement and camera angles. No mouse controls enabled during gameplay.

* What is the planned perspective (1st person vs. 3rd person)?

3rd person, adjustable view.

* What are SW and HW platforms?

SW - Panda3D game engine with Python programming

HW – PC

* What is the basic interactive structure?

Levels with a middle section, after which the background, music, will be noticeably changed to provide a different atmosphere.

* What is the "heart" of the gameplay?

Platform game with the various obstacles, collectable items, and puzzles.

* Does multi-player work?

Only single-player.

* How difficult is the game? How long will it take the average player to complete?

The game doesn’t have the functionality of letting users select the difficulty levels.

The game consists of three levels. Each level will be slightly more difficult than the previous stages. In general, the game is considered to be moderate in terms of difficulty.

Stage 1 takes roughly around fifteen minutes to complete.

Stage 2 takes around ten minutes to complete.

Stage 3 takes around ten minutes to complete.

Total game time estimates thirty-five minutes.

III. OTHER ASPECTS OF THE PRODUCT DESIGN

* Characters --

ATM - This is the player character

* ATM spawns in a locked cell.
* Winning: By reaching The Tower and successfully escape.
* Loosing: When ATM’s lives reaches 0.
* Health: NO HEALTH
* Weapons: No weapons
* Actions: Jump, run, dash, command Pete(Stage 2 only)
* Player Rewards (Collectable ‘coins’, +1 Life Batteries)
* Etc.

Pete – This is the reoccurring NPC

* Normal State: Standing in place.
* Detection State: Look at ATM & initiate dialogues
* Reaction State: Perform the scripted task, which may involve more dialogues or movement of the NPC
* End State: It will remain stationary and gets teleported to its next location of the game after ATM is out of sight.
* Controls --

Control table

|  |  |  |
| --- | --- | --- |
| **Action** | **Control** | **Context** |
| Jump | Space | All levels |
| Forward | W | All levels |
| Backward | S | All levels |
| Turn Right | D | All levels |
| Turn Left | A | All levels |
| Run | Shift | All levels |
| Help Menu | F1 | Menu |
| Close Help Menu | F2 | Menu |
| Camera Zoom Out | Q | All levels |
| Camera Zoom In | E | All levels |
| Auto Camera On | P | On by default |
| Auto Camera Off | O | All levels |
| Tilt Camera Down | Arrow Key Up | All levels |
| Tilt Camera Up | Arrow Key Down | All levels |
| Turn Camera Left | Arrow Key Left | All levels |
| Turn Camera Right | Arrow Key Right | All levels |
| Respawn | F8 | Usable when ATM has multiple lives |
| Pete Command GO | G | Available only in stage 2 |
| Pete Command HOLD | H | Available only in stage 2 |

* World –

See Level Design

## Level Design –

Laying out the large-scale features of the obstacle course map, such as steps, holes, walls, etc., for players and enemies to move around in. Also,

* There are no time limits. Player gain score by collecting balloons.
* Balloons are scattered across the stage, collecting them should be of ease. Life up batteries are hidden through-out the stage, they are often obscured behind walls or unlocked by puzzles.
* Graphic consists mostly of blocks, using the models provided previously and the existing ones in panda3D examples.
* Checkpoints are placed across the level. If players fall off the stage, or die due to hazardous block they will be respawned at the last checkpoint they had activated.
* Hazardous moving blocks will be introduced in Stage 2, where the player will lose a battery when touching these blocks.
* Player will also lose a battery if Pete touches the hazardous block while under ATM’s command.

LEVEL MAP

STAGE 1

1. Cell Block – The starting position of ATM. In order to unlock the cell doors, the ball must be pushed into the pit of each room. A final switch will be contained in Pete’s cell, where the exit will be opened for a limited amount of time after activating that switch. Pete will engage in multiple dialogues with ATM during this portion of the stage. It is designed so that these dialogues will be initiated.
2. Cell Block Exterior – After running out of the cell block, the player will not be able to return inside. During this portion of the stage, there will be two timed switches. The first switch spawns a block, allowing the player to reach to the second switch, which will spawn a large bridge that leads to the next section. This section also includes the first checkpoint in the game.
3. The Large Room – The gigantic square building contains a 2-part puzzle, as well as optional puzzles that rewards the player with balloons and battery. The first puzzle requires the player to push the ball in the corner of the room into the pit, which unlocks the exit for this area. The second switch will spawn a giant pillar in the room, allowing the player to reach the exit. Upon exiting the area, the player will slide down to the next checkpoint.
4. The Grand Pillars – There are four pillars separated by great distance. The first three pillars consists of generic platforming, while the last pillar consists of a timed switch. A checkpoint is given on the 2nd pillar to prevent frustration for climbing the first pillar.

TRANSACTION FROM STAGE 1 TO STAGE 2

This area will be a long, wide hallway. Previous coin tasks will be cleared in the middle section. At the end of the hallway, the player will encounter Pete and two switches. The exit will only unlock if both Pete and ATM stands on both switches. Pete will be scripted to stand on one of the switch after passing a dialogue check.

TRANSITION STAGE 1 => STAGE 2

This area will be a small interior section connecting stage 1 to stage 2. When crossing this area, the game will clear all stage 1 properties. During this time, stage 2 will be loaded.

STAGE 2

1. The Invisible Blocks – This area consists of invisible blocks, where Pete will begin to guide the player till the end of the maze. Pete will only walk on the invisible platform, where the player will be expected the follow. Pete will also jump across the gap in between the invisible blocks. Upon reaching the end of the maze, a checkpoint will be provided and Pete will no longer be following ATM.
2. The Invisible Blocks 2 – The next area will be yet another invisible blocks area, but this time Pete will not be guiding the player through it. Instead, spheres are placed upon the platforms, and the players are expected to observe the behavior of these spheres to determine which spot is safe to walk on. After reaching the end, another checkpoint will be provided.
3. The Bear Tunnel – After exiting the transaction area, the player and Pete will encounter a small passage where only Pete will be able to enter. At the end of the tunnel lies a switch that unlocks the door leading to the next area. The passage will contain moving hazardous blocks. At this point, the player will be given the GO and HOLD commands for Pete. If Pete collides with these hazardous blocks, both ATM and Pete will respawn. ATM will lose a battery if this were to happen. Falling down into the passage will lead to the next stage. ~~(THIS PORTION OF THE STAGE IS OPTIONAL, THIS WILL BE OPTED OUT IF THE FOLLOWING PORTION SATISFY THE AI COMPONENT OF THE GAME DUE TO TIME CONSTRAINTS.)~~ This section was implemented.

TRANSITION STAGE 2 => STAGE 3

The small section connecting stage 2 and stage 3. While falling down the tunnel, all stage 2 properties will be cleared, and stage 3 will be loaded.

STAGE 3

1. Underground passage – This area is entirely indoors. The bottom of the area will be a large hazardous, lava block, where players will lose a life if ATM collides with it.
2. THE TOWER- This is the final portion of the game, where player will be rushed to climb up obstacles as the hazardous moving platform rises from below. Upon touching the hazardous platform, the player will be respawn to the checkpoint. The hazardous platform will also be reset. Once the player reaches the top of the tower, there will be a final dialogue session with Pete which informs the player that they completed the game.

* Describe the on-screen interface

Number of lives left displayed on the left top corner as ‘batteries’. Total score is displayed in the top center of the screen. When a time switch is activated, time will display directly below the total score. Pete’s dialogue will appear at the center bottom of the screen. Pressing F1 will display all controls through text.

* Describe all menus in detail, and chart out the "shell" structure.

Main menu consists of Start, Level Select, and Quit. In the corner, player can choose to “Taste the Rainbow”, which will randomize all colors of the blocks generated in all stages.

* Graphics -- Describe the general style of the graphics.

Low poly models.

All models provided by the instructor or from the Internet.

Environment models (obstacle courses) will be procedurally constructed in Panda3D by using simple building blocks such as cubes and spheres/disks.

Unique models downloaded from repositories. (See License)

Directional light is used for all stages.

In stage 1, a dark, image model is used as the background.

In stage 2, a colorful sky image model is used as the background. A Point light is assigned to this model to increase the model’s overall brightness.

In stage 3, lava blocks will be moving constantly to induce the effect that it is moving. Stage 3 does not have its own background model, its atmosphere is established through the falling lava, and camera fog.

* Sounds and Music -- Describe at least the general manner in which sound effects will be used in the game.

Sounds effects will be played with ATM’s several movements such as jumping, and moving. Different sound and speed are used for running, and dashing animations, as well as dashing while jumping and regular jumping animation.

Collectibles and power ups will have their own sound effects in use.

ATM’s dialogue between ATM and Pete will be voiced instead of displaying on screen texts.

When losing a battery, a random voice clip for ATM will be played.

A wind up sound effect will be played when activating checkpoints.

When time switches are activated, a linger ‘tick tock’ sound effect will be played. If remaining time for that time switch is less than 3, the sound will be played at an increased rate.

Menu buttons will have scroll-over sound effects, and clicking sound effects.

Background Music:

Menu – Streewise by Craig Dobbins

Stage 1 – Donkey Kong Country 2 Soundtrack: Bramble Blast

Stage 2 – Klonoa 2: Path of Goddess Claire

Stage 3 – Undertale – Another Medium

The Tower – Tales of Zestiria: Flaming Bonds are Being Tested

* License Exploitation –

MODELS:

ATM model – Robot by Howard Li

Pete model – Panda from Panda3D package example

Background Environment Models from <http://alice.org/pandagallery/>

Block models provided by course instructor & Panda3D package

Addition block models from http://spiralgraphics.biz/index.htm

SOUNDS:

Sound effects provided by <http://soundbible.com/>

Sound effects generated from <http://www.bfxr.net/>

ATM’s voice recorded with <http://www.oddcast.com/home/demos/tts/tts_example.php?sitepal>

Sega Rally – Game Over Yeah!

Background Musics:

Streewise by Craig Dobbins

Donkey Kong Country 2 Soundtrack: Bramble Blast

Klonoa 2: Path of Goddess Claire

Undertale – Another Medium

Tales of Zestiria: Flaming Bonds are Being Tested