

***Errant: <description>***

***An iOS Fitness RPG***

A Major Qualifying Project Report

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Worcester Polytechnic Institute

in partial fulfillment of the requirements of the

Degree of Bachelor of Science

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**Abstract**

For design and development of

Errant: <Description>

By

Maxwell Perlman and Stefan Alexander

This report is focus on.

This document discusses…

The game …

Through the use of the iPhone’s new M7 chip, in conjunction with iBeacon Bluetooth devices, we created an iPhone role-playing game that is meant to encourage players to have a healthier lifestyle. The player engages in a real world role-playing game experience where the way they exercise in reality impacts their digital avatar’s traits and abilities. The goal of this game is to encourage exercise through in-game benefits to the player’s character, with the hope of eventually changing the player’s lifestyle to incorporate more exercise.

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* Professors Lindeman:

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Through exercise

Through gameplay

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Very Low:

* Offset =
* Minimum =
* Maximum =

|  |  |  |  |
| --- | --- | --- | --- |
| Level | Offset | Minimum | Maximum |
| 1 | 0 | 0 | 1 |
| 2 | 1 | 1 | 2 |
| 3 | 1 | 2 | 3 |
| 4 | 2 | 3 | 4 |
| 5 | 2 | 4 | 5 |
| 6 | 3 | 5 | 6 |
| 7 | 3 | 6 | 7 |
| 8 | 4 | 7 | 8 |
| 9 | 4 | 8 | 9 |
| 10 | 5 | 9 | 10 |

Low:

* Offset =
* Minimum =
* Maximum =

|  |  |  |  |
| --- | --- | --- | --- |
| Level | Offset | Minimum | Maximum |
| 1 | 1 | 0 | 2 |
| 2 | 2 | 2 | 4 |
| 3 | 3 | 4 | 6 |
| 4 | 4 | 6 | 8 |
| 5 | 5 | 8 | 10 |
| 6 | 6 | 10 | 12 |
| 7 | 7 | 12 | 14 |
| 8 | 8 | 14 | 16 |
| 9 | 9 | 16 | 18 |
| 10 | 10 | 18 | 20 |

Medium:

* Offset =
* Minimum =
* Maximum =

|  |  |  |  |
| --- | --- | --- | --- |
| Level | Offset | Minimum | Maximum |
| 1 | 2 | 0 | 3 |
| 2 | 4 | 3 | 6 |
| 3 | 6 | 6 | 9 |
| 4 | 8 | 9 | 12 |
| 5 | 10 | 12 | 15 |
| 6 | 12 | 15 | 18 |
| 7 | 14 | 18 | 21 |
| 8 | 16 | 21 | 24 |
| 9 | 18 | 24 | 27 |
| 10 | 20 | 27 | 30 |

High:

* Offset =
* Minimum =
* Maximum =

|  |  |  |  |
| --- | --- | --- | --- |
| Level | Offset | Minimum | Maximum |
| 1 | 3 | 0 | 4 |
| 2 | 6 | 4 | 8 |
| 3 | 9 | 8 | 12 |
| 4 | 12 | 12 | 16 |
| 5 | 15 | 16 | 20 |
| 6 | 18 | 20 | 24 |
| 7 | 21 | 24 | 28 |
| 8 | 24 | 28 | 32 |
| 9 | 27 | 32 | 36 |
| 10 | 30 | 36 | 40 |

Very High:

* Offset =
* Minimum =
* Maximum =

|  |  |  |  |
| --- | --- | --- | --- |
| Level | Offset | Minimum | Maximum |
| 1 | 4 | 0 | 5 |
| 2 | 8 | 5 | 10 |
| 3 | 12 | 10 | 15 |
| 4 | 16 | 15 | 20 |
| 5 | 20 | 20 | 25 |
| 6 | 24 | 25 | 30 |
| 7 | 28 | 30 | 35 |
| 8 | 32 | 35 | 40 |
| 9 | 36 | 40 | 45 |
| 10 | 40 | 45 | 50 |

For the following equations, the value of “random” is a randomly generated random number between the minimum and maximum values (inclusive).

Logarithmic:

* Formula:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level | Very Low | Low | Medium | High | Very High |
| 1 | 2:3 | 3:5 | 4:7 | 5:9 | 6:11 |
| 2 | 4:5 | 6:8 | 9:12 | 12:16 | 15:20 |
| 3 | 6:7 | 10:12 | 15:18 | 20:24 | 25:30 |
| 4 | 8:9 | 13:15 | 20:23 | 27:31 | 34:39 |
| 5 | 8:9 | 15:17 | 24:27 | 33:37 | 42:47 |
| 6 | 10:11 | 18:20 | 29:32 | 40:44 | 51:56 |
| 7 | 11:12 | 21:23 | 34:37 | 47:51 | 60:65 |
| 8 | 12:13 | 23:25 | 38:41 | 53:57 | 68:73 |
| 9 | 13:14 | 26:28 | 43:46 | 60:64 | 77:82 |
| 10 | 14:15 | 28:30 | 47:50 | 66:70 | 85:90 |

Linear:

* Formula:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level | Very Low | Low | Medium | High | Very High |
| 1 | 1:2 | 2:4 | 3:6 | 4:8 | 5:10 |
| 2 | 4:5 | 6:8 | 9:12 | 12:16 | 15:20 |
| 3 | 6:7 | 10:12 | 15:18 | 20:24 | 25:30 |
| 4 | 9:10 | 14:16 | 21:24 | 28:32 | 35:40 |
| 5 | 11:12 | 18:20 | 27:30 | 36:40 | 45:50 |
| 6 | 14:15 | 22:24 | 33:36 | 44:48 | 55:60 |
| 7 | 16:17 | 26:28 | 39:42 | 52:56 | 65:70 |
| 8 | 19:20 | 30:32 | 45:48 | 60:64 | 75:80 |
| 9 | 21:22 | 34:36 | 51:54 | 62:72 | 85:90 |
| 10 | 24:25 | 38:40 | 57:60 | 76:80 | 95:100 |

Exponential:

* Formula:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Level | Very Low | Low | Medium | High | Very High |
| 1 | 0:1 | 1:3 | 2:5 | 3:7 | 4:9 |
| 2 | 3:4 | 5:7 | 8:11 | 11:15 | 14:19 |
| 3 | 5:6 | 9:11 | 14:17 | 19:23 | 24:29 |
| 4 | 9:10 | 14:16 | 21:24 | 28:32 | 35:40 |
| 5 | 12:13 | 19:21 | 28:31 | 37:41 | 46:51 |
| 6 | 17:18 | 25:27 | 36:39 | 47:51 | 58:63 |
| 7 | 21:22 | 31:33 | 44:47 | 57:61 | 70:75 |
| 8 | 27:28 | 38:40 | 53:56 | 68:72 | 83:88 |
| 9 | 32:33 | 45:47 | 62:65 | 79:83 | 96:101 |
| 10 | 39:40 | 53:55 | 72:75 | 91:95 | 110:115 |

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