

Testing Document  
TOWER OF ARKADY

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November 25, 2014

## **SECTION 1. INTRODUCTION**

Tower of Arkady is a top-down puzzle game with a focus on speed. The player arrives at the tower and learns of a hostage on the top floor in need of rescue. The game becomes progressively more difficult as the player travels from one floor to another, moving through mazes, extinguishing fires and dodging bullets before diffusing a bomb to rescue the hostage.

This game is for entertainment purposes only and is specifically designed for the Game Expo on December 11. We expect the audience to consist primarily of college-aged students with a small amount of time available to play the game. As such, Tower of Arkady was designed to be short, challenging and enjoyable.

## **SECTION 2. OVERVIEW OF THE GAME**

The game begins as the player arrives at the Tower of Arkady and learns of a hostage in need of rescue. Before entering the tower, the player is briefed on game movement and objectives, and a list displays high scores. The timer will begin counting down when the player enters the tower.

Tower of Arkady is a graphics game with dramatic music and varying sound effects as the player moves through the game and interacts with objects. A pause feature is excluded from the game as a deliberate design chose so players must move quickly through the game to earn a spot in the high scores. As an added incentive to avoid game hazards, including fire and bullets, additional time will be removed from the game clock each time the player collides with a game hazard. Additionally, time will be removed to the game clock each time an incorrect wire is cut while diffusing the bomb. The game ends, and the timer stops, only when the player diffuses the bomb at the top of the tower. High scores are earned by players who complete the game with the largest amount of time left on the play clock.

## **SECTION 3. TOP LEVEL FAILURE MODES**

Out of bounds errors, mechanics errors and item errors may cause the game to malfunction. Specific ways players may be able to cause the game to malfunction include:

- Bypassing room mechanics and running directly to the rooms' exits. The user should to be able to leave any room without first completing the room's objective.
- Attempting to pick up, use or otherwise interact with items they should not be able to interact with. Non-interactive objects, including walls, should remain in place and unchanged regardless of any interaction attempted by the player.

- Trapping the player character within a room. The possibility for a player to become trapped in the room does intentionally exist. If a player does become trapped, the game should run until the game clock runs out and declares the game lost.
- Attempting to return to previously completed rooms or moving past the wall boundaries. Players should be able to return to any previously completed room or be able to move past the wall boundaries. The only exception to this can occur in the room with cracked tiles. If a player steps on any of the cracked tiles, the player will be moved back to the previously completed room.
- Attempting to extinguish a fire that does not exist. The extinguish function should not work on any object that is on fire.

## SECTION 4. MODULES AND TESTING

Tower of Arkady will utilize the following widely used and well-tested modules:

Module	Source for Information
Pygame	<a href="http://www.pygame.org/news.html">http://www.pygame.org/news.html</a>
PyMap	<a href="https://code.google.com/p/pymap/">https://code.google.com/p/pymap/</a>
Sqlite3	<a href="http://www.sqlite.org/testing.html">http://www.sqlite.org/testing.html</a>

We will also create our own modules for character, gameplay, window, interactive objects, and so forth. Testing of these modules will include the following.

### Character:

- Attempting to walk through the walls.
- Using the W, A, S and D keys, as well as the arrow keys, to move into walls and other objects.
- Pressing multiple combinations of keyboard keys in an attempt to create errors.
- Attempting to move through objects from all directions.
- Ignoring objects in the rooms and running directly to the door for the next floor.

### Window:

- Attempt to resize the window.
- Pressing multiple combinations of keyboard keys in an attempt to create errors.

### Interactive Objects:

- Attempting to activate items onto the interior walls and other objects.
- Attempting to interact with multiple objects at once.
- Attempting to move multiple objects at once.
- Pressing multiple combinations of keyboard keys while standing next to and/or holding objects.
- Attempting to use the key for objects that are not locked doors.

- Attempting to open doors without using the appropriate key.
- Attempting to apply fire and/or bombs to other objects.
- Attempting to activate items on moveable objects.

#### **Gameplay:**

- Attempting to walk back to previously completed levels.
- Trapping character in moveable objects and obstacles.
- Attempting to play the game in a time that matches a time on the high score list.
- Stand in mechanics to force time clock down faster.
- Sit inactive and watch the clock tick down to zero.

### **SECTION 5. TOP LEVEL TESTING**

Testing to ensure that Tower of Arkady is working correctly will include:

- Checking to see if the player can walk through walls or objects in the rooms.
- Attempting to return to previously completed rooms or moving past the wall boundaries.
- Bypassing room mechanics and running directly to the rooms' exits.
- Attempting to pick up, use or otherwise interact with items they should not be able to interact with.
- Trapping the player character within a room.
- Attempting to extinguish a fire that does not exist.
- Attempting to apply a function, such as extinguish, to an object, such as a wall, that should not be affected by the function.
- Attempting to open a door without first obtaining and applying the key to the door.
- Attempting to move objects into exterior and interior walls, over other mechanics and onto other movable objects.
- Attempt to blow up one bomb with another bomb.
- Allowing a bomb to detonate with the player and/or the hostage directly beside it.
- Attempt to duplicate times on the high score list.
- Allowing the clock to run down without playing the game.
- Pressing multiple combinations of keys on the keyboard in attempt to make the game lag or pause.

Primary testing will be performed by the team's tester, Asher Yusim, with assistance from the graphics designer, Samantha Steinberg, and the documentalist, Sara Turner. Additionally, team members' friends, fellow gamers, some of whom have experience playing betas, and family members will be recruited to assist with game testing.

## SECTION 6. IMPLEMENTATION PLAN AND TIMELINE

We intend to follow the implementation plan and timeline outlined below:

Version to Test	Time Required	Completion Date
1	30 minutes	Dec. 2
2	30 minutes	Dec. 2
3	30 minutes	Dec. 2
4	30 minutes	Dec. 5
5	30 minutes	Dec. 5
6	30 minutes	Dec. 9
7	2 hours	Dec. 10

## SECTION 7. BIBLIOGRAPHY

Pygame. <<http://www.pygame.org/news.html>>.

Pymap. <<https://code.google.com/p/pymap/>>.

SQLite. "How SQLite Is Tested. Web. 26 Nov. 2014 <<http://www.sqlite.org/testing.html>>.

## SECTION 8. WORK ASSISTANCE STATEMENT

The testing document was assembled with assistance from members of Team 11: Scott Richards, David Warthen, Nic Ward, Asher Yusim, Samantha Steinberg and Sara Turner.