**Project Plan**

Kitty in the City:

A Lost Paws

Panic! At The Computer Inc.

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**Introduction**

This document outlines how our team plans to complete our platformer game, Kitty in the City: A Lost Paws. We will outline what tasks need to be completed in order to finish this project, the sequence in which these tasks must be completed, who will complete them, and by when they will be completed. We will also cover the resources we will require, our test plan, risk analysis for the project, and how we intend to stay organized and manage our code throughout the project.

**Task Sequence**

Listed below is the general sequence of tasks we plan to perform in creating our game. While this list order will not be followed exactly--some dependencies allow us to do later listed tasks before earlier ones--the tasks will generally be done in this order. Further detail as to who will do what and in what order can be found in the Deliverables section.

For the most part, the tasks will be performed in the following sequence:

1. Design/Sprite Creation
   * Level layout design
   * Character design
   * Basic object art
2. Object Creation
   * Add functionality/mechanics to objects
   * Animations
     + Depends on basic object art
     + Depends on character design
   * Code object interactions
     + Depends on added functionality/mechanics to objects
3. Gameplay Mechanics
   * Level room creation
     + Depends on level layout design
   * Objects inserted into levels
     + Depends on level layout design
     + Depends on level room creation
4. Testing Round 1 - Functionality
   * Object interactions
   * Movement
   * Character actions
5. Design Refinement
   * Advanced object art
     + Depends on character design
     + Depends on basic object art
   * Level visuals (backgrounds and platforms)
     + Depends on basic object art
   * In-level animations and text
     + Depends on level room creation
6. Game Flow
   * Main menu added
   * Cut scene transitions between levels
   * Level select
     + Depends on level room creation
   * Play/“paws” functionality
7. Testing Round 2 - Refinement/Gameplay
   * Game flow
   * Visuals
   * Difficulty level
   * Search for bugs

**Deliverables and Schedule**

We plan to have three deliverables turned in before the final game deliverable. What will be turned in for each deliverable, when said deliverable should be completed, and who will complete each task is listed below:

**Phase 4 (Design Document) - February 9**

Team - Finish Planning

* Design Document
  + Write final design document
* Project Plan
  + Edit schedule in project plan to fit class-given schedule

**Phase 5 (Milestone Delivery) - February 26th**

Tracy Karol - Level Design

* Level layout design
  + Five levels drawn
  + All platforms included (simple rectangle representation)
  + Enemy placements

Anna Nienhaus - Art Basics

* One animation frame complete for each character
  + Main character cat
  + Enemies for each of the five levels
  + Bulldog (first boss)
  + Animal control (final boss)
* Level art
  + Platform blocks
  + Ground blocks
  + Backgrounds
* Collectable art
  + One animation frame done for any involving animation
* Begin cutscene art
  + Opening scene art
  + Cutscene between levels 1 and 2
  + Cutscene between levels 2 and 3

Joel Walker - Object Creation and Basic Functionality

* Create all necessary objects correlated to sprites
  + Characters
  + Collectibles
  + Platforms
* Implement movement mechanics for cat
  + Basic WASD controls

Kolton Ponte - Object Movement Animations

* Transitions between the sprites of each object, depending on movement type
  + Walking
  + Sprinting
  + Jumping
  + Ducking
  + Attacking
  + Idle

**Phase 6 (Milestone Delivery) - March 12th**

Tracy Karol-Level Creation/Testing

* Levels
  + Levels created in GameMaker Studio 2
  + Placeholder platforms present (art will be added later)
  + Objects placed in levels

Anna Nienhaus - Animation Art and Menu Art

* Draw remaining animation frames
  + Jump, attack, stun, and walk frames for cat
  + Walk frames for enemies
  + Walk and jump frames for bosses
  + Any necessary animation frames for collectables
* Draw background art for main menu
* Finish cutscene art
  + Cutscene between levels 3 and 4
  + Cutscene between levels 4 and 5
  + End cutscene

Joel Walker - Advanced Object Mechanics and Initial Interactions

* Implement double tap A or D to run
* Implement collisions with platforms
* Declare hearts and stamina for cat (not yet connected to sprites)
* Characters and collectibles resting or floating on platforms

Kolton Ponte - Enemy movement

* NPC pathing
* Enemy attacks
  + Proximity attacks
  + Ranged attacks
  + Collision attacks

**Phase 7 (Alpha) - March 23rd**

Tracy Karol-Level Art/Testing/Sound

* Level Art
  + Backdrop art added to each level
  + Platform art added
* Testing
  + Testing Round 1 (refer to Test Plan)
* Sounds
  + Adding sound sprites
  + Add sound functionality to code corresponding with objects

Anna Nienhaus - Main Menu, Level Select, and Play/Pause

* Main Menu completed
  + Background art added
  + Button to begin story mode working
  + Button to go to level select working
* Level select completed
  + Level select screen allows you to choose which level to start on
* Play/Pause button completed
  + Game can be paused
  + Pause splashscreen allows you to continue playing or quit
  + Pause splashscreen effectively pauses the game

Joel Walker - Finalize Object Interactions

* Finish coding relationships between all objects
  + Character to character
    - Cat attacking enemies
    - Enemies attacking cats
  + Character to collectible
    - Cat picking up hearts, food, etc.
  + Character to platforms
* Ensure accurate changes to health/stamina during gameplay

Kolton Ponte - Some Game Specifics

* Level Transitions
* Camera view
  + Player keeps up with the camera
  + Camera centered on player

**Phase 8 (Beta) - April 11th**

Everyone - Polishing

* Testing Round 2 (refer to Test Plan)
  + Testing done
  + Test results recorded
  + List of bugs written
* Implement any extra features
* Implement details/small features not yet implemented

**Phase 9 (Final Delivery) - April 23rd**

Everyone - Game finalization

* Game complete and finalized
* All components tested
* Gameplay testing done (refer to Test Plan)
* Any bugs fixed

**Resources**

To complete this project, we will need several resources. Some of these resources are programs we will be using, while others are art and sounds that we will put into the game. The full list of needed resources is as follows:

Programs

* GameMaker Studio 2
* GIMP
* Microsoft Paint

Art

* Character sprites
* Level backdrops
* Collectible sprites
* Level object sprites

Sounds

* Royalty free sounds
* Royalty free music

Software Engineers

* Panic! At The Computer Inc.
  + Team of four
* Coding experience

Time

* Two and a half months (approximately)

**Test Plan**

Each testing round will include a set of test cases for the functionality and further aspects of the game. The Quality Assurance Manager will be in charge of all testing, and the Lead Developer will be responsible for fixing any issues that arise.

**Testing Round 1**

This will involve testing object movement and low level interactions (collectibles and characters placed on platforms and physics of game) within each level. We will test that collisions between the main character and collectibles will be reflected in the player object code. All testing results will be recorded in either a spreadsheet or note format.

**Testing Round 2**

This round will include complete object interaction testing. All character attacks, animations, and player stamina/health bar will reflect collisions. Difficulty of completing levels will be taken into consideration. The smoothness of the visuals and animations will be tested as well as the level transitions. Functionality of the menu, level select, and play/pause will be included. Overall gameplay will be examined in depth to find bugs that will need to be fixed in the final week.

**Final Testing Round**

Last minute kinks to fix will be seeked out in the final week. By this round, there isn’t expected to be any serious bugs, so we should be able to handle refinements needed for the final production of the game.

**Risk Analysis**

Throughout the production of our game, many risks may arise that we will have to address appropriately. In the case that we do not have enough time to fully complete the game, we will cut the level select, game pause mechanic, advanced art, idle object animations, extra sound effects, and then the in-level storytelling aspects. If, during production, a team member becomes unable to work on their portion of the game due to sickness, family emergencies, or personal matters, the team member’s workload will be split among the other members for the duration. If GameMaker Studio 2 is unable to provide a certain functionality, we will implement the functionality through external code (C++, Python, Java) that will then be imported.

**Configuration Management, Organization, and Requirements**

We plan to handle our version control through GitHub throughout the course of the project. In addition to providing us a means for version control, GitHub will also allow each of us to pull and push the project as needed so that each team member can have access to the full code. This will let us work on the project individually as needed. This version control will also help us to stay organized. Before deliverable due dates, we will have a meeting to go over individual deliverable progress in order to ensure production quality and design.

All of our code should be written with the class coding standards in mind. Variable, object, and constant names should all be uniform. We also expect that each team member will include descriptive, meaningful comments for their code that will make it understandable to each of the other team members, as well as anyone else who may look at the code.

**Conclusion**

In this document, we have laid out a structure that will keep us on track for the development of our game. We believe we have given ourselves reasonable goals to reach in the time frame we have designated. We recognize that our plan may change along the way and we may need to be flexible in our scheduling, but this plan lays out a firm foundation to organize this project.