Activity List Document

# GENERAL INFORMATION

Project Name: 2-D interactive game Project Number: PR232399

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## Work Breakdown Structure

Level 1

Main Game

Music and Effects

Double Buffered Graphics

Input Module

Main Game Module

Renderer

Game Model

Low-Level Plotting

Level 2

Input Functions

Develop the low-level plotting routines as needed

Double Buffer Synchronization

Renderer functions

Level 3

Test Driver

Test Driver

Test Driver

Main Game

Model Data Structures

Test Driver

Test Driver

Model Behavior Functions

Event Functions

Test Driver

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| WBS#: | Deliverable: | Work package: | Comments: | Date completed: |
| 1.1.1 | Develop the low-level plotting routines as needed | Clear screen and/or clear region | Clear region for size of bitmaps we are using | February 8th |
| 1.1.2 | Develop the low-level plotting routines as needed | Plot a single pixel | Plot no matter where on the screen | February 8th |
| 1.1.3 | Develop the low-level plotting routines as needed | Plot horizontal line | Make sure the alignment fits per shifting protocol | February 8th |
| 1.1.4 | Develop the low-level plotting routines as needed | plot vertical line | Make sure no taring | February 8th |
| 1.1.5 | Develop the low-level plotting routines as needed | plot line (generic) | Between any two pts | February 8th |
| 1.1.6 | Develop the low-level plotting routines as needed | plot bitmap (multiple variants, e.g., for different bitmap dimensions) | Plot each size we use in our model | February 8th |
| 1.1.7 | Develop the low-level plotting routines as needed | various plot “shape” routines (where shape is something like square, rectangle, polygon, etc.) | As needed | February 8th |
| 1.1.8 | Test Driver | Create a suitable test script for each function | As per spec | February 8th |
| 1.2.1 | Model Data Structures | Screen | Holds both the map and stat boxes | February 15th |
| 1.2.1.2 | Model Data Structures | Stat box | Displays the players statistics including power bar level | February 15th |
| 1.2.1.2.1 | Model Data Structures | Total Score Box/Hole Number Box/ Par Box/ Shot Box | Text and integer Statistics | February 15th |
| 1.2.1.2.2 | Model Data Structures | Power Bar Box | Displays the visual representation of the power level | February 15th |
| 1.2.1.2.2.1 | Model Data Structures | Power Segment | One segment of the power bar | February 15th |
| 1.2.1.3 | Model Data Structures | Map Box | Holds all objects that make up the map | February 15th |
| 1.2.1.3.1 | Model Data Structures | Ball | Player ball | February 15th |
| 1.2.1.3.1.1 | Model Data Structures | Ball Direction Pointer | Pointing arrow in direction of travel | February 15th |
| 1.2.1.3.2 | Model Data Structures | Hole | End goal for players ball | February 15th |
| 1.2.1.3.3 | Model Data Structures | Portal | Transporting tile | February 15th |
| 1.2.1.3.4 | Model Data Structures | Ground | Base tile state with standard friction | February 15th |
| 1.2.1.3.5 | Model Data Structures | Tile Grid | Whole gird of possible tile positions on map | February 15th |
| 1.2.1.3.6 | Model Data Structures | Wall | Edge of the holes play space | February 15th |
| 1.2.2.1 | Model Behavior Functions | setAngle | Sets the angel of the players ball | February 15th |
| 1.2.2.2 | Model Behavior Functions | setVelocity | Sets the velocity of the players ball | February 15th |
| 1.2.2.3 | Model Behavior Functions | setPower | Sets the power of the players ball | February 15th |
| 1.2.2.4 | Model Behavior Functions | increaseShots | increases number of shots played this hole | February 15th |
| 1.2.2.5 | Model Behavior Functions | increaseScore | increases the total score | February 15th |
| 1.2.2.6 | Model Behavior Functions | setPlayer | sets the players id number | February 15th |
| 1.2.2.7 | Model Behavior Functions | setPar | sets the par of the current course | February 15th |
| 1.2.2.8 | Model Behavior Functions | setHit | hole set if hit by ball | February 15th |
| 1.2.2.9 | Model Behavior Functions | decreaseBallVelocity | reduce the velocity of the ball | February 15th |
| 1.2.2.10 | Model Behavior Functions | increaseBallVelocity | increase the velocity of the ball | February 15th |
| 1.2.2.11 | Model Behavior Functions | setBallPos | sets the position for the ball object | February 15th |
| 1.2.2.12 | Model Behavior Functions | ballMoving | defines when the ball is still in motion | February 15th |
| 1.2.2.13 | Model Behavior Functions | setTile | sets the type of tile | February 15th |
| 1.2.2.14 | Model Behavior Functions | getTileObject | returns pointer to a tile | February 15th |
| 1.2.2.15 | Model Behavior Functions | checkTile | checks the object code of the tile | February 15th |
| 1.2.2.16 | Model Behavior Functions | ballAngleInvert | inverts the balls position | February 15th |
| 1.2.3.1.1 | Event Handler Functions [sync] | event\_ball\_rotate\_toRight | The ball rotates one postion to the right of its current state. | February 15th |
| 1.2.3.1.2 | Event Handler Functions [sync] | event\_ball\_rotate\_toLeft | The ball rotates one postion to the left of its current state. | February 15th |
| 1.2.3.1.3 | Event Handler Functions [sync] | event\_ball\_power\_Up | The ball's power modifier is increased by one from its current state. | February 15th |
| 1.2.3.1.4 | Event Handler Functions [sync] | event\_ball\_power\_Down | The ball's power modifier is decreased by one from its current state. | February 15th |
| 1.2.3.2.1 | Event Handler Functions [condition] | check\_collision | Checks two objects x, y, hight and width on the condition that they overlap. | February 15th |
| 1.2.3.2.2 | Event Handler Functions [condition] | is\_portal\_collision | Checks a ball object against a portal object on condition that they overlap. | February 15th |
| 1.2.3.2.3 | Event Handler Functions [condition] | is\_hole\_collision | Checks a ball object against a hole object on condition that they overlap. | February 15th |
| 1.2.3.2.4 | Event Handler Functions [condition] | check\_tile\_collision | Checks a ball object against the tile grid object to return the tile type. | February 15th |
| 1.2.3.2.5 | Event Handler Functions [condition] | event\_ground\_pass | The ball is crossing a ground tile. | February 15th |
| 1.2.3.2.6 | Event Handler Functions [condition] | event\_portal\_hit | The ball is crossing a portal tile. | February 15th |
| 1.2.3.2.7 | Event Handler Functions [condition] | event\_wall\_hit | The ball hits a wall tile. | February 15th |
| 1.2.3.2.8 | Event Handler Functions [condition] | event\_hole\_hit | The ball hits a hole tile. | February 15th |
| 1.2.3.2.9 | Event Handler Functions [condition] | event\_update\_ball\_power | From the screen object sets the power of the ball based on the screen power percent. | February 15th |
| 1.2.3.2.10 | Event Handler Functions [condition] | event\_ball\_collides | From the screen object checks if the ball hits a tile to change the game model. | February 15th |
| 1.2.3.2.11 | Event Handler Functions [condition] | event\_ball\_moving | From the screen object moves the ball based on current model. | February 15th |
| 1.2.3.2.12 | Event Handler Functions [condition] | event\_shot | The whole game implimenet a shot from the balls current postion. | February 15th |
| 1.2.3.2.13 | Event Handler Functions [condition] | event\_power\_Up | The ball is moved dependednt on the tile it crosses. | February 15th |
| 1.2.3.2.14 | Event Handler Functions [condition] | event\_power\_Down | The ball's power modifier is decreased by one from its current state. | February 15th |
| 1.2.3.2.15 | Event Handler Functions [condition] | event\_ball\_stops | The ball stops at its current postion. | February 15th |
| 1.2.4 | Test Driver | Create a suitable test script for each function | As per spec | February 15th |
| 1.3.1.1 | Renderer module | renderPlayerBox | From a given frame base pointer and a players stat text and number is rendered. | March 1st |
| 1.3.1.2 | Renderer module | renderTotalScoreNumber | From a given frame base pointer and a score stat number is cleared and re-rendered. | March 1st |
| 1.3.1.3 | Renderer module | renderTotalScoreBox | From a given frame base pointer and a players stat text rendered. | March 1st |
| 1.3.1.4 | Renderer module | renderMapNumberBox | From a given frame base pointer and a current map stat text and number is rendered. | March 1st |
| 1.3.1.5 | Renderer module | renderParBox | From a given frame base pointer and the current par stat text is rendered. | March 1st |
| 1.3.1.6 | Renderer module | renderShotsNumber | From a given frame base pointer and the current par stat number is cleared and re-rendered. | March 1st |
| 1.3.1.7 | Renderer module | renderShotBox | From a given frame base pointer and the current shot stat text rendered. | March 1st |
| 1.3.1.8 | Renderer module | renderPowerText | From a given frame base pointer and the current power text is rendered. | March 1st |
| 1.3.1.9 | Renderer module | renderPowerBarIndicator | From a given frame base pointer and the current power indicator stat power bar re-rendered. | March 1st |
| 1.3.1.10 | Renderer module | renderPowerPercentage | From a given frame base pointer and the current power stat text and number is rendered. | March 1st |
| 1.3.1.11 | Renderer module | renderPowerBarBox | From a given frame base pointer and the current power bar box re-renderes it. | March 1st |
| 1.3.1.12 | Renderer module | renderStatBox | From a given frame base pointer and the current stat box the whole statistics are rendered. | March 1st |
| 1.3.1.13 | Renderer module | clearBallDirectionPointer | From a given frame base pointer and the current direction pointer its area is cleared from the base. | March 1st |
| 1.3.1.14 | Renderer module | renderBallDirectionPointer | From a given frame base pointer and the current direction pointer with the balls new angle its pointer is replaced. | March 1st |
| 1.3.1.15 | Renderer module | clearBallsLastPos | From a given frame base pointer and the current ball its last position is removed from the buffer. | March 1st |
| 1.3.1.16 | Renderer module | renderBall | From a given frame base pointer and the current ball its current position is rendered. | March 1st |
| 1.3.1.17 | Renderer module | renderPortal | From a given frame base pointer and the current portal is rendered. | March 1st |
| 1.3.1.18 | Renderer module | renderHole | From a given frame base pointer and the hole is rendered on to the buffer. | March 1st |
| 1.3.1.19 | Renderer module | renderTile | From a given frame base pointer and the tile is rendered on to the buffer. | March 1st |
| 1.3.1.20 | Renderer module | renderTileGrid | From a given frame base pointer and the tile grid is rendered on to the buffer. | March 1st |
| 1.3.1.21 | Renderer module | updateTileGrid | From a given frame base pointer and screen struct the tile grid is re-rendered about the ball. | March 1st |
| 1.3.1.22 | Renderer module | renderMapBox | From a given frame base pointer and map struct the tile grid is re-rendered along with the ball. | March 1st |
| 1.3.1.23 | Renderer module | renderScreen | From a given frame base pointer and screen struct the whole screen re-rendered. | March 1st |
| 1.3.1.24 | Renderer module | updateBallDetails | From a given frame base pointer and screen struct the ball is re-rendered dependent on state. | March 1st |
| 1.3.1.25 | Renderer module | updateStagingDetails | From a given frame base pointer and screen struct the stats are stages for rendering. | March 1st |
| 1.3.1.26 | Renderer module | updateScreen | From a given frame base pointer and screen struct the game updates stats or plays the balls movement. | March 1st |
| 1.3.1.27 | Renderer module | clearScreen | From a given frame base pointer the screen is cleared completely. | March 1st |
| 1.3.1.28 | Renderer module | renderStatic | From a given frame base pointer and screen struct the static objects are rendered. | March 1st |
| 1.3.2 | Test Driver | Create a suitable test script for each function | As per spec | March 1st |
| 1.4.1 | Main Game Module | Main | Instantiate map and create screen buffers. Link with sync and async events till game over | March 8th |
| 1.4.2 | Input | get\_input | Return interrupt from user | Marth 8th |
| 1.4.3 | Test Driver | Create a suitable test script for each function | As per spec | March 8th |
| 1.5.1 | Double Buffering | Create multiple game buffers for smooth gameplay | Ensure alignment | March 16th |
| 1.5.2 | Test Driver | Create a suitable test script for each function | As per spec | March 16th |
| 1.6.1 | Music | Create a digital musical theme |  | March 22nd |
| 1.6.2 | Sound Effects | Create suitable sound bites |  | March 22nd |
| 1.6.3 | Test Driver | Create a suitable test script for each function | As per spec | March 22nd |