# **Developer Diary**

Mobile Applications Development 3 Project 2020 SpaceMan RUN (3D Endless Runner Game)

# Developer's Update

## Nov 3, 2020

Read the Design Document of SpaceMan Run, research on assets and 3D endless runner.

Made Repository on Git hub for Mobile Application Development 3.

By reading the design document that was provided by the Designer. Main concept idea is you move player run in Endless Environment. In endless environment player have no control on ground running other than to jump over obstacles, break obstacles and collect coins. Researched the expectation of designer and limitation of my expertise including improvement while learning and implementation of it.

Key points about the game:

- 1. Platformer
  - Endless environment (Space)
- 2. Objects
  - Coins
  - Jump over fire
  - Break wall
- 3. Character
  - Has lives
  - Score
- 4. Front End
  - Play Game
  - Statistics
  - Options
  - Help
  - Quit

#### Nov 25, 2020

Project setup as 3D Unity and initialise game production. Develop of the basic game on plane and 3D object cylinder and its movement on the plane which will be Caveman eventually.

#### Nov 29, 2020

Implementation of camera to follow the player.

## Dec 3, 2020

Add Jump and gravity on player. Now that the character is moving I wanted to get the character running on a platform. All I have done to do was add a 2D collider to one of the plane objects, change the characters physics and the character was then able to run forward and jump on the platform. By pressing the spacebar the character was able to jump

#### Dec 7, 2020

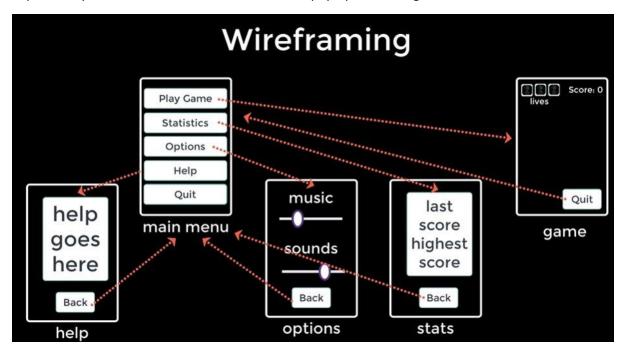
In the given design document, designer gave the 2d character prefabs references to develop game with. But to make a better 3D version of the game I need to use some good 3D models prefabs. For this with the permission of designer through Email I change the character from CaveMan to SpaceMan but the rest functionality and game target to achieve, kept intact.

#### Dec 9, 2020

Generated Endless world environment by using different prefab tiles used in pool arrays which can generate world according to given tiles in array including turning corners on T intersection Prefabs.

# Dec 11, 2020

Add obstacles like fire, build wall and wall breaker on the same tiles prefabs and added to generate in pool arrays. Create GUI menu and create menu pop ups according to it.



#### Dec 12, 2020

Add and generate Animating Coin on platform by adding animation on rotation by using unity animation feature, picking up coins and resetting it in to future tiles coming on platform.

### Dec 13, 2020

Adjust jumping and obstacles collider and picking up coins using box colliders and resetting in code.

#### Dec 14, 2020

Add GUI functionality like upon playing games max lives and replace the live icon of spaceman to dead icon. After colliding obstacles and regenerate page to give a go to player to max lives. Added the explosion to wall and fog using unity features.

#### Dec 15, 2020

Add sound and sound effect adding in Audio Source Array and calling in code accordingly to its sound feature like jump, shoot coin picking etc.

Add multiplayer functionality by letting one player first play the game and then letting second player play the game. So implemented this by creating two game scene platformMuti1 which is for first player and platformMulti2 is for second one by duplicating assets and required scripts calling their platform Multi references .

|              |        | Purpose:  | This set of tests<br>check main fund |                              |   |   |  |   |                      |       |  |
|--------------|--------|-----------|--------------------------------------|------------------------------|---|---|--|---|----------------------|-------|--|
|              |        |           |                                      | ctionality<br>e SpaceMan Run |   |   |  |   |                      |       |  |
| enu Page of  | Game   |           | E-disco Dominio                      | Test Run on Windo            | ws 10 and Unity 2019.1.14f  |   |  |   |                      |       |  |
| · ugo o      |        |           |                                      |                              |   |   |  |   |                      |       |  |
|              |        |           |                                      |                              |   |   |  |   |                      |       |  |
|              |        |           |                                      |                              |   |   |  |   |                      |       |  |
|              |        |           |                                      |                              |   |   |  |   |                      |       |  |
|              |        |           |                                      |                              |   |   |  |   |                      |       |  |
|              |        |           |                                      |                              |   |   |  |   |                      |       |  |
|              |        |           |                                      |                              |   |   |  |   |                      |       |  |
| quirement ID | Sprint | Test Case | Test Case Name                       | Descriptions                 | Search Parameters / Instructions  | Checks  | Expected Result  | Actual Result                                 | Results<br>Pass/Fail | Bug # | Comments   |
|              |        |           |                                      |                              |   |   |  |   | . 033/ . 0           |       |  |
| 1.00         | 1      | TC.001    | SpaceMan Logo                        | GUI                          | SpaceMan man logo on the main Gui Page                                    |   |  | Display Game name                             | Pass                 |       |  |
|              | 1      | 10.001    | Spacewall Logo                       | GOI                          | spacewait mail logo on the mail dui Page                                  |   | Display Game name logo on                                  | logo on the top of                            | Pass                 |       |  |
|              |        |           |                                      |                              |   | Display Game name logo on the top of menu screen  | the top of menu screen                                     | menu screen                                   |                      |       |  |
| 2.00<br>3.00 | 1      | TC.002    | Menu Buttons                         | GUI                          | menu buttons under name and SpaceMan pic                                  |   |  | show menu field                               | Pass                 |       |  |
|              |        |           |                                      |                              |   |   |  | under logo and                                |                      |       |  |
|              | 1      | l         |                                      | 1                            | 1   | show menu field under logo and Spaceman pic according   |  | Spaceman pic                                  |                      |       |  |
|              | 1      | l         |                                      | 1                            | 1   | show menu field under logo and Spaceman pic according<br>to wire frame picture                            | to wire frame picture                                      | frame picture                                 |                      |       |  |
|              | 1      | TC.003    | Play game button                     | GUI                          | On click give option of single player or multiplayer                      |   | and the present  | On click give option                          | Pass                 |       |  |
|              | 1      | 1         | 1                                    |                              | and back to menu button   |   | On click give option of single                             | of single player or                           |                      |       | 1  |
|              | 1      | l         |                                      | 1                            | 1   | On click give option of single player or multiplayer and  | player or multiplayer and                                  | multiplayer and back                          |                      |       |  |
|              | -      | L         | +                                    | L                            |   | back to menu button   | back to menu button  | to menu button                                |                      |       |  |
| 4.00         | 1      | TC.004    | Statistics Button                    | GUI                          | On click show Statistics of last score and high score<br>with back button | show Ststistics of last score and high score with back<br>button  | show Statistics of last score                              | show Statistics of last                       | Pass                 |       |  |
|              |        |           |                                      |                              | WICH DACK DUCCON  | button  | and high score with back                                   | score and high score                          |                      |       |  |
|              |        |           |                                      |                              |   |   | button   | with back button                              |                      |       |  |
| 5.00         | 1      | TC.005    | Options Button                       | GUI                          | On click show sound and music adjust slider with                          | show sound and music adjust slider with slider effects on   |  | show sound and                                | Pass                 |       |  |
|              |        |           |                                      |                              | slider effects on it with back button                                     | it with back button   | show sound and music adjust                                | music adjust slider                           |                      |       |  |
|              |        |           |                                      |                              |   |   | slider with slider effects on it<br>with back button       | with slider effects on<br>it with back button |                      |       |  |
|              | 1      | TC.006    | Help Button                          | GIII                         | On click show instructions how to play game with                          | show instructions how to play game with back button   | with back button   | show instructions                             | Pass                 |       |  |
|              | 1      | 10.000    | Help Button                          | GOI                          | back button   | snow instructions now to play game with back button   | show instructions how to                                   | how to play game                              | Pass                 |       |  |
|              |        |           |                                      |                              |   |   | play game with back button                                 | with back button                              |                      |       |  |
| 7.00         | 1      | TC.007    | Quit Button                          | GUI                          | On click Exit game  | Exit game   | Exit game  | same Screen                                   | Fail                 |       | will work outside                                |
| 8.00         | 1      | TC.008    | Single Player                        | GUI                          | on click Single pl ayer laod and begin with back<br>button                | Single player game begins with back button  | Single player game begins<br>with back button              | Single player game<br>begins with back        | Pass                 |       |  |
|              |        |           |                                      |                              | button  |   | with back button   | button  |                      |       |  |
| 9.00         | 1      | TC.009    | Game Screen                          | GUI                          | On Click Single player game begins with max lives                         | Single player game begins with max lives panel, score   |  | Single player game                            | Pass                 |       |  |
|              |        |           |                                      |                              | panel, score panel, running space on ground with                          | panel, running space on ground with zero score with   |  | begins with max lives                         |                      |       |  |
|              |        |           |                                      |                              | zero score with back button   | back button   | Single player game begins                                  | panel, score panel,                           |                      |       |  |
|              |        |           |                                      |                              |   |   | with max lives panel, score                                | running space on<br>ground with zero          |                      |       |  |
|              |        |           |                                      |                              |   |   | panel, running space on<br>ground with zero score with     |   |                      |       |  |
|              |        |           |                                      |                              |   |   | back button  | button  |                      |       |  |
|              | 1      | TC.010    | Game Screen                          | GUI                          | On click of arrow keys with A and D keys player                           |   |  | Arrow keys with A                             | Pass                 |       |  |
|              |        |           |                                      |                              | move or turn  |   | Arrow keys with A and D keys                               |   |                      |       |  |
|              | 1      | TC.011    | Game Screen                          | GUI                          | Upon passing on coins, coins dissappear and add 10                        | Arow keys with A and D keys player move or turn<br>passing on coins, coins dissappear and add 10 in score | player move or turn<br>passing on coins, coins             | move or turn<br>passing on coins,             | Pass                 |       |  |
| 10.01        |        | 10.011    | Gaine screen                         | GOI                          | in score for each coin  | for each coin   | dissappear and add 10 in                                   | coins dissappear and                          | Pass                 |       |  |
| 10.02        | 1      | TC.012    | Game Screen                          | GUI                          | Upon passing on Fire or wall player is dead and one                       | passing on Fire or wall player is dead and one deadlcon   | passing on Fire or wall player                             | passing on Fire or                            | Pass                 |       | İ  |
|              |        |           |                                      |                              | deadlcon appears instead alivelcon in reload scene                        | appears instead alivelcon in reload scene   | is dead and one deadlcon                                   | wall player is dead                           |                      |       |  |
| 10.03        | 1      | TC.013    | Game Screen                          | GUI                          | Upon coming of wall or fire escape obtacles by                            | coming of wall or fire escape obtacles by pressing space  | coming of wall or fire escape                              |   | Pass                 |       |  |
|              | 1      | I         |                                      | 1                            | pressing space to jump on fire and M key to break<br>wall                 | to jump on fire and M key to break wall   | obtacles by pressing space to<br>jump on fire and M key to | escape obtacles by<br>pressing space to       |                      |       |  |
|              | 1      | TC.14     | Game Screen                          | GUI                          | Achieve Max lives which is 3 in this game to game                         | Achieve Max lives which is 3 in this game to game over  | Jump on fire and M key to<br>Achieve Max lives which is 3  | Achieve Max lives                             | Pass                 |       | <b> </b>   |
|              | 1 -    | 1         |                                      | 1                            | over  | Suite of the  | in this game to game over                                  | which is 3 in this                            |                      |       | 1  |
|              |        |           |                                      |                              |   |   |  | game to game over                             |                      |       |  |
| 10.05        | 1      | TC.15     | Game Screen                          | GUI                          | Achieve 20 coins to change level up                                       | Achieve 20 coins to change level up   | Achieve 20 coins to change<br>level up                     | Achieve 20 coins to                           | Pass                 |       |  |
| 10.06        | 1      | TC.16     | Game Screen                          | GUI                          | Apply past five Test for multiplayer                                      | Apply past five Test for multiplayer  | Apply past five Test for                                   | change level up<br>Apply past five Test       | Pass                 |       | <del>                                     </del> |
|              | 1 *    |           | Guine Screen                         |                              |   | - pp.y parameter to manipuyer   | multiplayer  | for multiplayer                               |                      |       |  |
| 10.07        | 1      | TC.17     | Game Screen                          | GUI                          | Mutiplayer player 1 and player 2 names stored with                        | Mutiplayer player 1 and player 2 names stored with back   | Mutiplayer player 1 and                                    | Mutiplayer player 1                           | Pass                 |       |  |
|              | 1      | l         |                                      | 1                            | back button   | button  | player 2 names stored with                                 | and player 2 names                            |                      |       |  |
|              | 1      | I         |                                      | 1                            | 1   |   | back button  | stored with back                              |                      |       |  |
|              | 1      | TC.18     | Game Screen                          | GUI                          | In statistics last score and highest score saved and ap                   | In statistics last score and highest score saved and  | In statistics last score and                               | In statistics last score                      | Pass                 |       | -  |
|              | 1 *    | 10.10     | Gaine Screen                         | GOI                          | successes last score and nignest score saved and ap                       | appears   | highest score saved and                                    | and highest score                             | ress                 |       | 1  |
|              |        |           |                                      |                              |   |   | appears  | saved and appears                             |                      |       |  |
| 10.09        | 1      | TC.18     | Game Screen                          | GUI                          | After playing multiplaye winners name and score sho                       | After playing multiplaye winners name and score shows   |  | After playing                                 | Pass                 |       |  |
|              |        | 1         |                                      |                              |   |   | winners name and score                                     | multiplaye winners                            |                      |       |  |
|              | 1      | 1         |                                      | 1                            | 1   | 1   | shows  | name and score<br>shows                       |                      |       | 1  |
|              |        |           |                                      |                              |   |   |  |   |                      |       |  |

# References

Platformer Tutorials: <a href="https://www.youtube.com/playlist?list=PLX-uZVK">https://www.youtube.com/playlist?list=PLX-uZVK</a> OK 6VXcSajfFbXDXndb6AdBLO

Respawning - <a href="https://www.youtube.com/watch?v=udUNv5aEXIU&t=0s&list=PLad18qy5">https://www.youtube.com/watch?v=udUNv5aEXIU&t=0s&list=PLad18qy5</a> - <a href="https://www.youtube.com/watch?v=udUNv5aEXIU&t=0s&list=PLad18qy5">o5wiFDIyaHeQLYvi4oGKDCn&index=3</a>

 $\begin{tabular}{ll} \textbf{Unity Main Menu - $\underline{$https://unity3d.com/learn/tutorials/topics/user-interface-ui/creating-main-menu} \\ \end{tabular}$ 

Music: <a href="https://freesound.org/">https://freesound.org/</a>

Assets : https://holistic3d.com/resources/

Tips: <a href="https://www.gamasutra.com/">https://www.gamasutra.com/</a>