1. **Introduction:**

In this project, we are going to develop a game called “Run Dot Run”. There will be a dot as the main character of the game and the goal of the dot is to reach the end of a sentence by passing letters in a limited time.

The game will include different levels, which are to be locked as the previous levels are completed successfully. In each level, the length of the sentence to pass will increase. In addition to this, the levels will come with different kind of obstacles and/or bonuses.

The game will be a desktop application. The user will control the game with keyboard. The game is for any user at any age.

1. **Overview:**

Run Dot Run is a game in which the user controls a dot and tries to pass over letters of a sentence and reach to the end of that sentence in a short duration. Only the dot will be user-controlled. During the game, user will move the dot by pressing spacebar, right and left keys on the keyboard. S/he will press left key to move the dot left; right key to move right and spacebar key to jump. As the user press spacebar and one of the direction keys at the same time, the dot will make a projectile motion, regarding which direction key(left or right) is pressed with spacebar. Otherwise, the dot will stay at its current position.

The user will be able to pause the game. Because in the game there is limited time to complete the level, it might be necessary for the user to pause the game to be able to continue playing after a while. If the game is over, player will be provided with 2 options, restart same level or go to the main menu. If the level is completed successfully, player will choose whether to play the next level or go to the main menu.

* 1. **Levels:**

The game will include 4 different levels. In each level, there will be longer sentences than those in the previous level. However, the proportion of time over the length of the sentence will decrease, which will make it harder to reach the end in the given time and the user will need to make less mistakes.

If the dot cannot pass the obstacles or the letters before the time is up, the game will end. The dot will have 3 or 4 lives depending on the levels. Until the dot uses all of its lives, if it cannot pass an obstacle or a letter, it will go to the start position and try to finish the game in the remaining time. In other words, the time will not restart during the game.

* + 1. **Level 1:**

In the 1st level, the surface of the letters will be flat; so, the dot will not fall from the letter unless it falls to the ground while it is jumping. In other words, the dot will not slip over the letters. Because this will be the easiest level, it will be like a warm up level. Therefore, the only difficulty will be to pass the letters and user will try to reach the end only without falling between the letters. Dot will have 3 lives.

Rules for level 1:

* Do not drop the ball to the ground until the end of the sentence.
* Reach the end before time is up.

**Level 2:**In level 2, dot will have 3 lives. 2 different obstacles will appear in this level. Also, there will be lives bonus added to the game. The bonuses will be placed in different points, such as the sky in the game or on the letters. As the dot gets a life bonus, number of lives it has for the current play will be incremented by 1.

1. **Eraser Obstacle:**

During the game, there will be erasers coming from different directions. Some of them will be thrown from the right side, some of them will be falling from the sky and some of them will be moving upward from the space between the letters. So, all the erasers will have a direction that passes from the path of the dot. The user will try not to collide the dot with the erasers. Otherwise the dot will be erased and it will start from the beginning position. Same as if it falls to the ground, it will try to complete the level starting from the beginning but in the remaining time.

1. **Spike Ostacle:**

In addition to the eraser, there will be spikes on some letters in 3rd level. If the dot touches the spikes, it will be destroyed and go back to the start position and continue the level in the remaining time.

Rules for level 2:

* Do not collide with the erasers
* Do not touch the spikes
  + 1. **Level 3:**

In the 3rd level, dot will have 4 lives at the beginning. Some parts of some of the letters will scatter as the dot touches that point of the letter, but which letters have this property will be unknown by the player and those letters will look the same as the normal letters. There will be time bonuses, like 3 seconds bonus, 5 seconds bonus etc. and as the dot gets these bonuses, the remaining time for te current game will be increased depending on how much time that bonus have. There will be some check points added to the game. This means, if the dot cannot pass the obstacles or letters, it will restart from the position of the last check point it has passed instead if the beginning position, if it has life and time left. In other words, the start position will be set to the position of the last check point the dot has passed, if any.

Rules for level 3:

* Do not collide with the erasers
* Do not touch the spikes
* Be careful about the time in which the letters disappear as they are touched, in order not to fall to the ground.
  + 1. **Level 4:**

In this level, the font of the letters will vary, so that the user will need to be careful in order not to make the dot slip over the letters having round edges. There will be punishment circles in this level. If the dot touches those circles, which are to be placed in the sky or on the letters, remaining time will decrease depending on how much time that circle holds. Dot will have 4 lives. Bonuses and check points will be put also in this level.

Rules for level 4:

* All rules in the 3rd level are relevant for this level
* Be careful about the letters with round edges so as not to slip over them and fall
* Avoid touching the punishment circles