Product Brief

Working Title
Maze runner

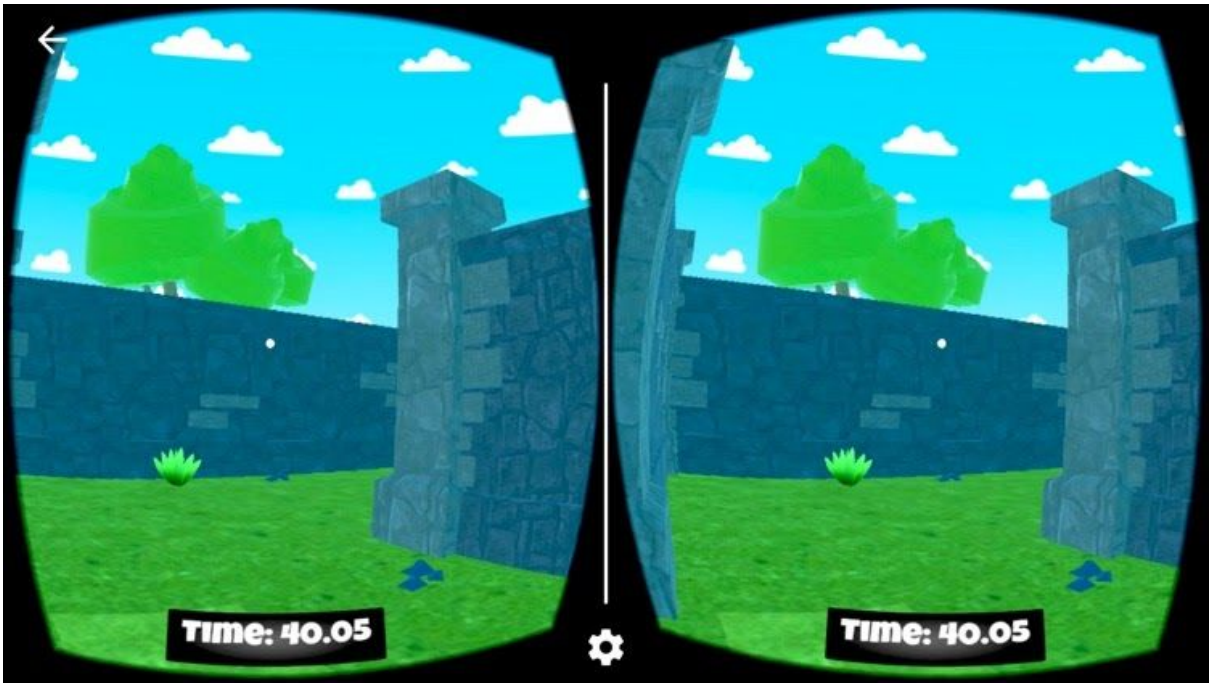
Type of XR and Target Platform
Virtual Reality
Google cardboard

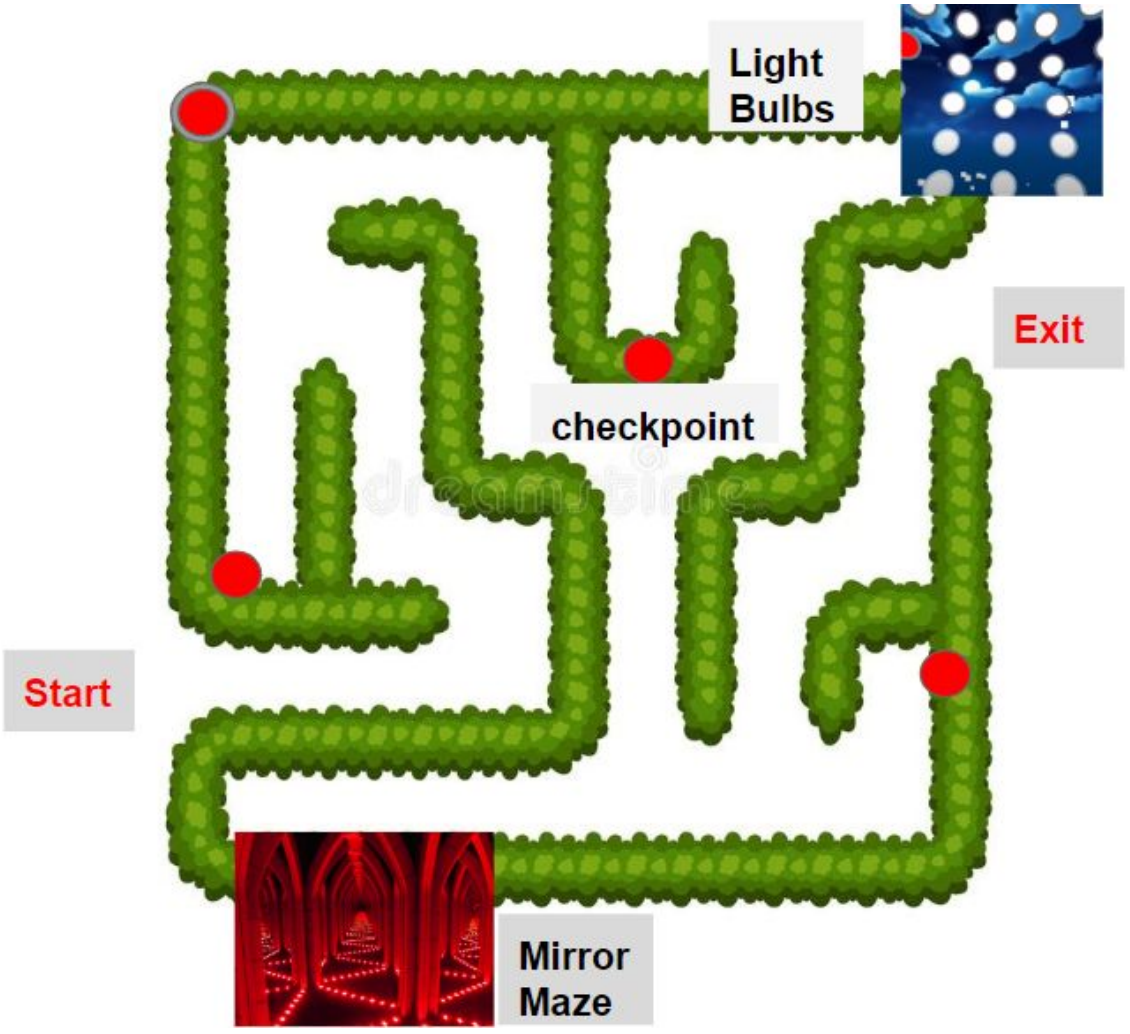
Elevator Pitch
A single player game that generates a maze which the user has to pass through within a given time limit. In addition to being a simple maze, there are various checkpoints hidden in the maze. So the motive of the game is to score as many points as possible from various checkposts within the time limit and exit. Some checkposts are simply hidden on walls while others present the user with a challenge which user has to complete to get the points. Example challenges :

1. Light Bulbs : Users will be surrounded by light bulbs from all sides. WIthin the duration of 1min, different light bulbs will glow with different colors. User has to hit the correct light bulb (red color)

2. Mirror Maze : Users need to pass through a mirror maze i.e. maze walls are made of mirrors. Some checkpoints are hidden within the maze. User can collect points from them.

Visual Reference





Target Audience

Demography :

Age : 16-44

Greater than 70% of people who are aware of VR fall in the age group (16-44). The percentage drops in further age groups 56% for 45-54 and 44% for 55-64 year of age. Also 55% of millenials feel VR gaming related apps should be increased.

Gender : All

Women like gaming, but not necessarily VR fans (44.6% of mobile, PC, console games owners are women) but majorly men are the owners of VR headset. Only 14% of women have bought a VR headset online. Maze runner game doesn't target any gender in particular but for advertising it may be advisable to show male appealing ads.

Location : North America, Europe, China

90% of people in the UK and US are aware of VR. China recently invested $593 million in VR technology resulting in Xiaomi MI VR. VR technology is budding in the region.

Income Level : Maze runner requires the user's phone to have android phone with gyroscope. Even medium range mobile phones come with gyroscopes these days. The user should also have google cardboard which is an affordable product. More than the income level, user awareness and interest matters.

Market : Mobile based VR game industry (Single player game)

Mobile-based VR is gaining popularity because of portability and affordability. According to 2016 statistics, 87% of VR headsets sold worldwide were mobile phone based.

Interest : Puzzle/maze solving, forward-thinking, technologically inclined individuals

Market Sizing and Sales Channels

Global VR market size is expected to reach $22.9 billion by the end of 2020. VR gaming specifically worth $3.6 billion in 2016 and is expected to reach $22.9 billion by 2021. Gaming market accounts for 50% of total VR Software sales.

Google cardboard app has 10M+ downloads on Google play store. Many popular VR games like Hardcore has 500,000+ downloads.

Sales Channels

To increase the reach of *maze runner*, it is targeted for google cardboard users which is an affordable VR headset. The app will be released on Google Play Store for easy download and update. All the levels will be free for users and some small amount of fee (<$2) for without ads experiences. Social media is a great channel to introduce an app. Platforms like youtube and LinkedIn provide a great place to share new ideas.

Who is it Not For

ios and windows based phone
Devices without Gyroscope
Multi player gaming is not supported. Users can compare score playing separately.
Game is built specifically for Google cardboard type VR headsets and requires the phone to be compatible with Google cardboard app.

XR Implementation

VR (3DOF)
Phone based VR : In order to make the app usable by maximum people, **android** platform is chosen with google cardboard support. Implementation outline:
Scenes : Stone wall maze scene, mirror wall maze scene, light bulbs challenge scene. First person perspective is used for Maze Runner.
Textures : Stone wall, grass ground, mirror texture
Google Reticle : Reticle helps in incorporating gaze based input. In maze runner it is used for:

1. View and walk support : If the player's angle of vision is greater than 20 degrees below horizon then the player will move forward.
2. Gaze based selection : Players can select a checkpoint by hovering over it for sometime or by clicking the button on Google cardboard.

This feature can be imported from Google VR SDK for unity.

Maze runner game gives an exciting experience to the players as it incorporates different VR experiences in the form of challenges into one game. Also the user can enjoy the game with bare minimum requirements. Mirror maze, escape rooms etc are getting popular these days but their availability is low. Maze runner tries to cater to this demand.

Supporting Technologies

3D Modeling : Create a 3D model of user avatar using Blender because the player’s character will be reflected in the mirror maze section.
Gyroscope : Helps in detecting head motion when a mobile based headset is used. It helps in adjusting the scene according to the player's sight of vision. It is essential for gaze based functionalities as well.

Key Features

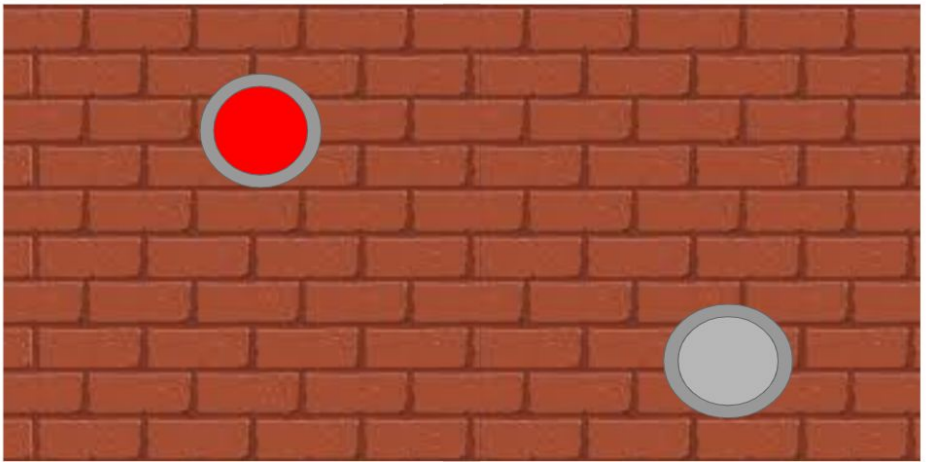
Overall Game

As a user I want to choose game level so that I can decide the difficulty level of the maze I want to play

As a user I want to move within the maze so that I can look for checkpoints and find exit route

As a user I want to interact with red wall posts so that I can collect points

As a user I want the color of wall posts change to grey so that I can recognise active wall posts

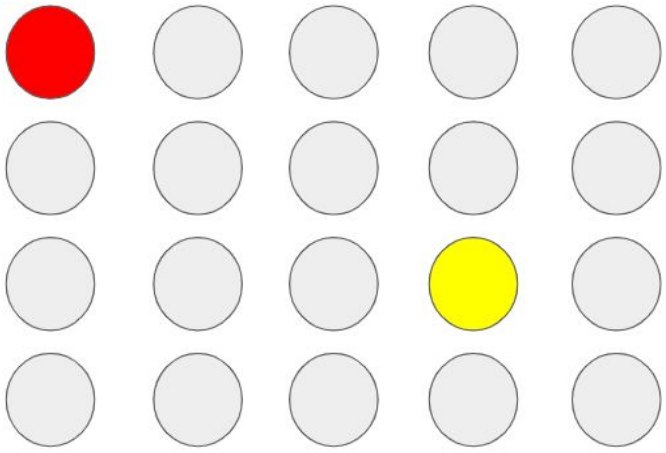


Wall posts : Red means contains points, grey means points retrieved

Challenges

As a user playing lightbulb challenge I want to select a red light bulb so that my points increments by 1

As a user playing lightbulb challenge I want to select any other (non red) light bulb so that my points decrement by 1

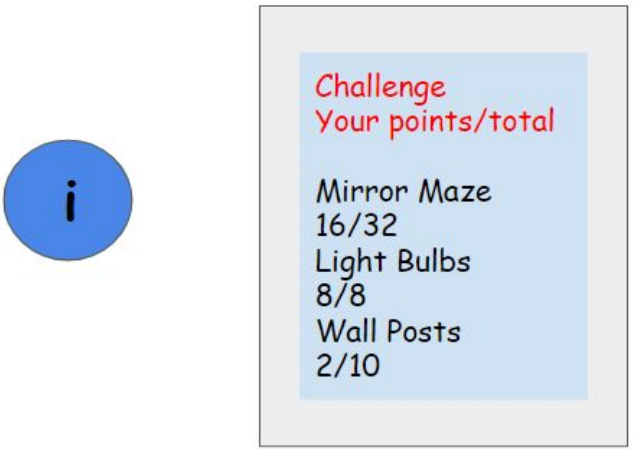


Challenge Light Bulbs : Choose the correct light bulb

As a user I want to move around the mirror maze so that I can navigate and collect points from check posts inside the mirror maze

Information

As a user I want to interact with information button so that I can check the current status of points



Player's status

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2. https://www.emarketer.com/content/virtual-and-augmented-reality-users-2019
3. https://www.dreamstime.com/education-logic-game-bush-labyrinth-kids-find-right-way-isolated-simple-square-maze-white-background-education-logic-game-image155871801