Cluster Innovation Centre
University of Delhi

Designing of Mobile app based mathematical games

oblivion

Introduction

Oblivion is app where we have intergrated three small app in it.

The first one is the **Memory Game**, the objective of this game is to make player memory more stronger.

The second one is **Random Animation**, the objective of this one is to generate an animation from its library which creates a sense of satisfaction in user's mind.

The third one is **Physics Visualize**, the objective of this game is to make the students visualize about the concept of motion, (a part of physics) where a user can change the velocity and acceleration and the ball will move accordingly.

Concepts and Formula

Memory Game :- The principle of resolution is mathematical, by modeling the grid by a matrix $[a_i]$ of size nxm and p≥2 possible states.

By pressing a box, some other cells have their state changed or reversed (if p = 2)

The next state is then determined, for each box i, by the number of times the boxes are pressed (modulo p)

This state can be represented with m calculations $(a_{i1}\, x_1 + \ldots + a_{in}\, x_n) \bmod p = 0$ for which the value of x_i is the solution sought.

Random Animation :- We have used some of the animations to create a sense of satisfaction video with the use of 3 dimensions and fractals.

Physics Visualize :- This is a physics visualization tool for motion dynamics. In this one can visualize how velocity depends on magintude and direction of accelerarion.

Future Plans

→ Make the User Interface more appealing for the app so that more number of people will be attracted towards it.
→ Add randomization for the animation part of the application.
→ Add the timer section and leaderboard for the game.
→ Add more concepts for visualization.

References

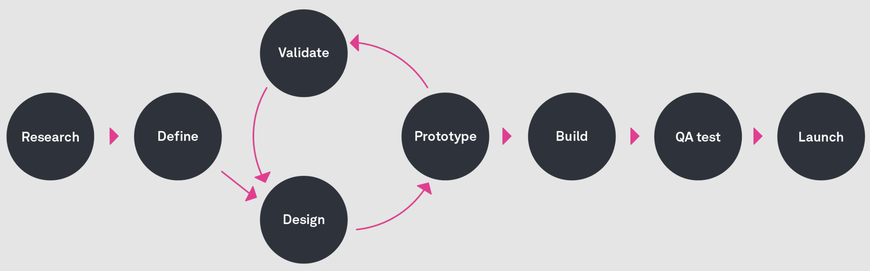
https://docs.flutter.dev/reference/tutorials
https://www.geeksforgeeks.org/flutter-tutorial/

Scan this QR

to download the app

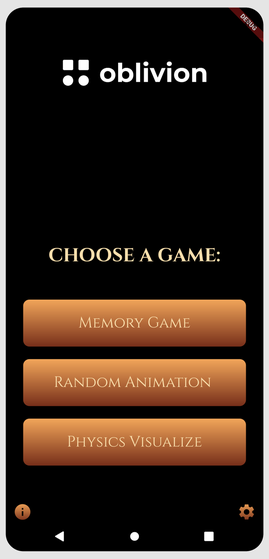
How to Download ?
Step 1 :- Scan this QR Code.
Step 2:- Download the APK file from Google Drive.
Step 3:- Install the APK.
Step 4: Play game and Enjoy **:D**

Research Process

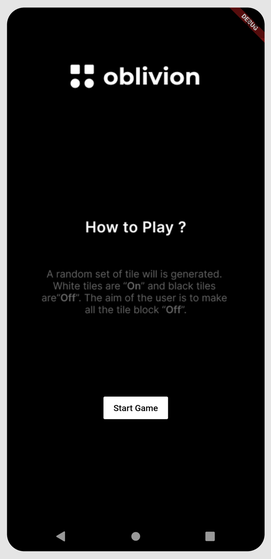


Research :- What to build, how to build, UX.
Define :- Defined the games objective and what we want to achieve from the app.
Design :- Designed the UI for the different screen shown in App.
Prototyped :- We prototyped all screens which we had designed.
Validate :- Validated that our product is working fine through various stakeholders and updated it as requested in the feedbacks.
Build :- Wrote codes for the app in Android Studio.
QA Test :- Rigorously tested our app on real devices to get the satisfactory results related to its quality, working and UI.
Launch :- We finally launched the app and release its APK file.

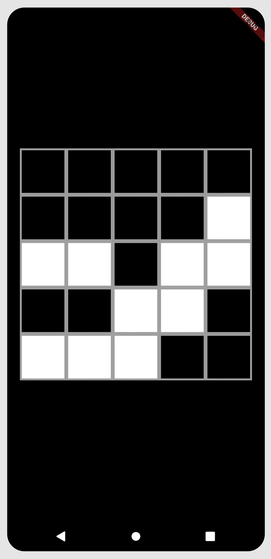
UI Screen Mockups

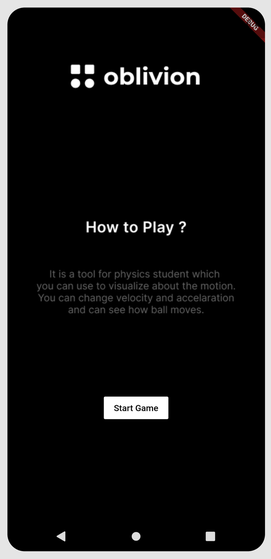


Main Menu

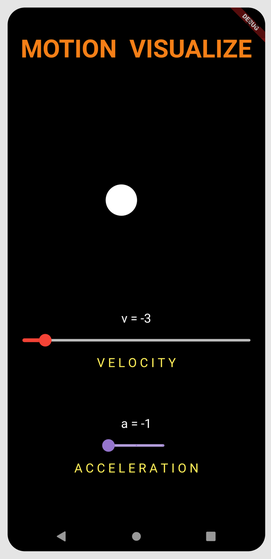


Memory game - How to play

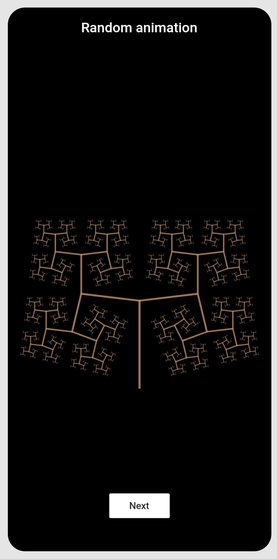

Memory Game



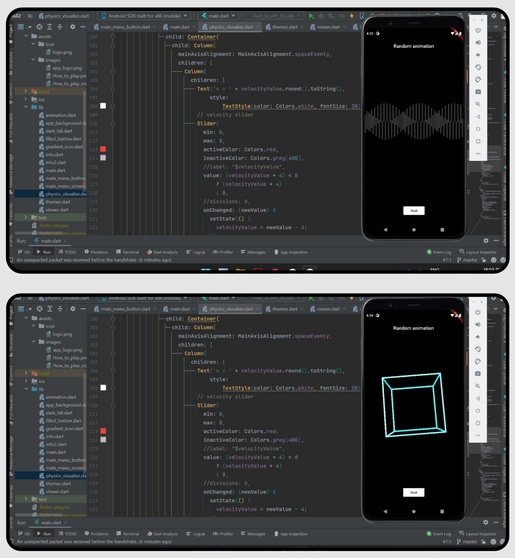
Physics Visualize - How to play



Physics Visualize



Random Animation


Programming Screenshots

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