VR Project Design Document

Authors:
Tomáš Iványi
Veronika Bendíková

1 App Info

Title:	AR for climbing wall routes

	Education & Training	✔	Mental Health & Fitness
	Travel & Discovery		Media & Entertainment
	Productivity & Collaboration		Gaming
	Art & Creativity		Other: _____

2 Pitch

The goal is for users to [learn | experience | practice | review | design | play | other]:

Use application to create routes and visualize routes already created.

This will be especially [educational | memorable | effective | fun | other] in VR/AR b/c:

Wall where the routes takes place has complicated structure, there for it would help the users to correctly identify holds needed for climbing

At a high level, during the app, users will:

Users will come to the climbing wall, open the app, and point their phone camera at the wall. The AR system will recognize the holds and display them digitally.

- Users can create a new route by selecting specific holds directly in AR view.
- The app will save the route and make it available to others.
- Other users can view existing routes, which will be visualized by highlighting the correct holds in AR.

The app will take place in:

Augmented reality using phone camera directly in front of the wall, and a 3d model of the wall inside the app

Describe target audience of the app:

Climbers using the schools gym, who want to learn to create new routes or to climb route different than the intuitive ones.

Target platform of the app is [CardboardVR | VuforiaAR | other]:

VuforiaAR

3 Core Mechanics

Describe the main gameplay mechanics:

Using the AR the users will be able to locate the holds on the walls, select them and add them to the route. When selecting created route, the holds that the users should “Light up” - become visible.

Users will be able to interact with:

The holds on the wall

Main menu will consist of options:

Create route, View Routes, 3d model of the wall

[Optional] There will be additional UI elements for:

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4 Optimization & Publishing

To make the user experience more accessible / comfortable:

- We will ensure that AR tracking works reliably under different lighting conditions.
- We will ensure a simple and intuitive user interface for quick interaction while standing near the wall.
- We will ensure stable performance even on mid-range devices.

Given that this app is targeting the [headset model], target metrics are:

Frames per second:	>= 30_____	FPS
Triangles per frame:	_____ - _____	tris

8 Timeline

	Milestone	Date
1	- Wall 3D model preparation	October 2025

2	- Initial AR marker recognition (Vuforia setup)	Early November 2025
3	- Demo version ready (basic AR functionality + simple route creation)	23 November 2025
4	- Implement full route creation & visualization features	December 2025
5	- Final version completed and submitted	January 2026

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Other features (Optional)

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Sketch (Optional)