



Carla



Carmen



Eliott

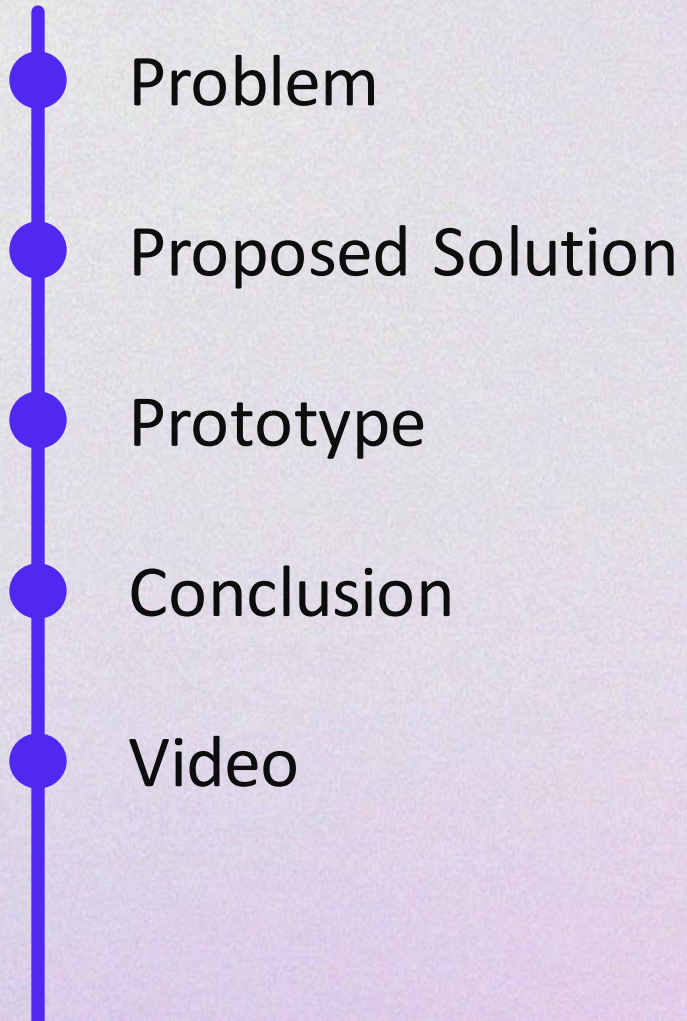


Jan



Julia

Syllabus



Problem Statement

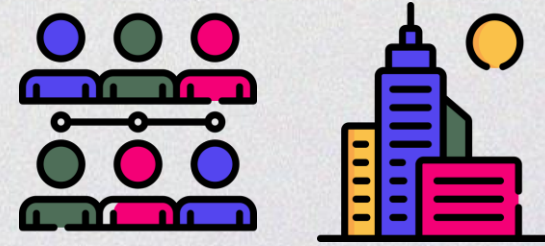


“What is the city but the people?”

– William Shakespeare
(Coriolanus, Act 3, Scene 1)

“While planners bring technical skills and knowledge, citizens provide community history, local knowledge, and an understanding of cultural values.”

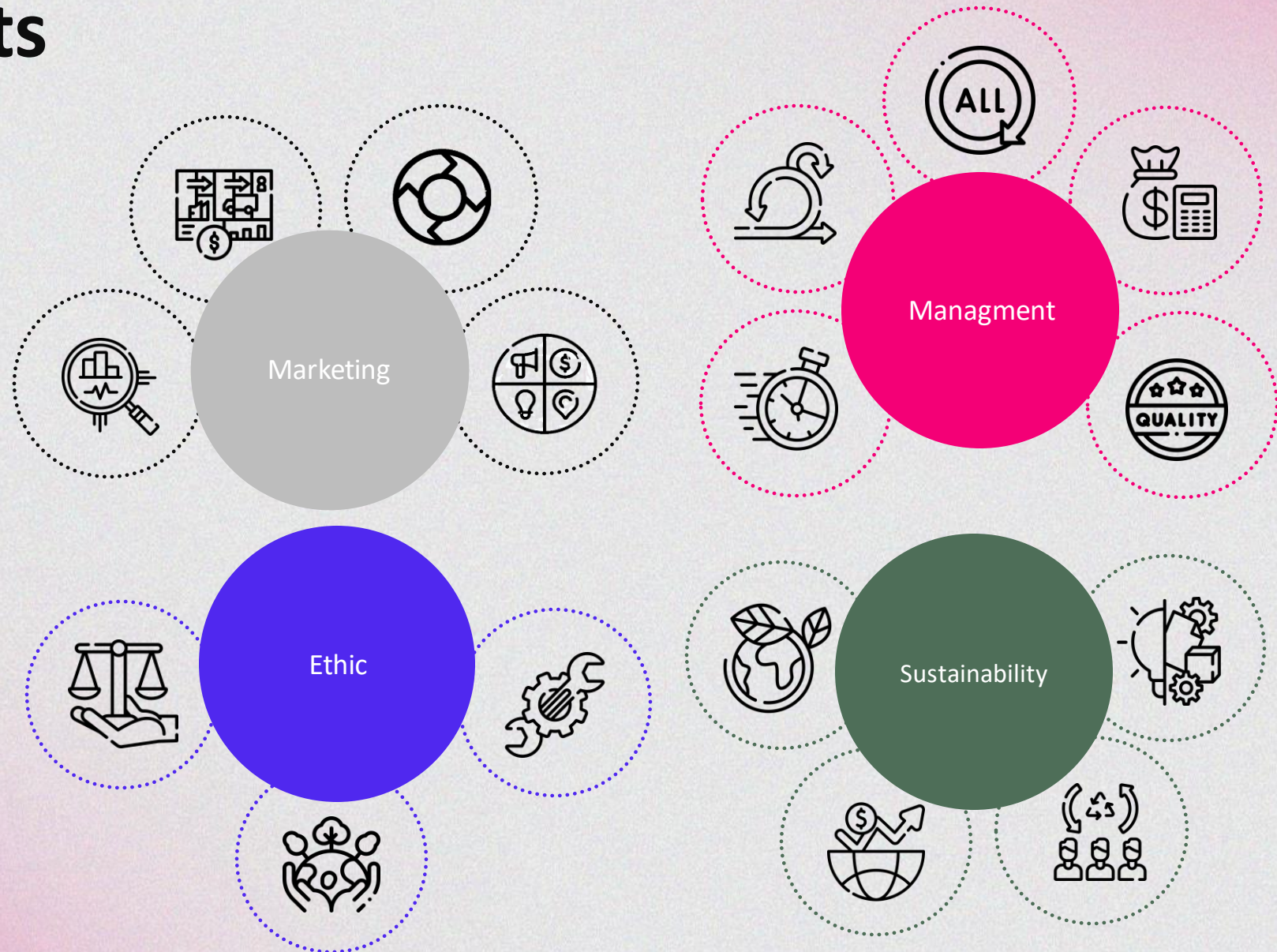
– Innes 1996



People have a **high barrier** when it comes to participation in urban planning, for this reason, only a small population group takes advantage of participation opportunities.

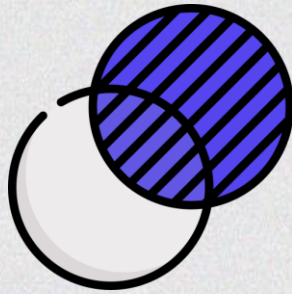
Requirements

Initial

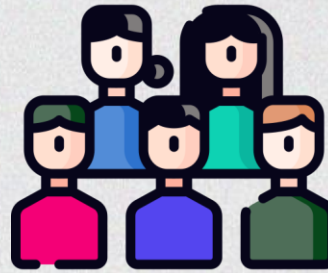


Requirements

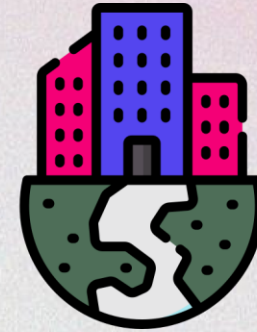
Derived



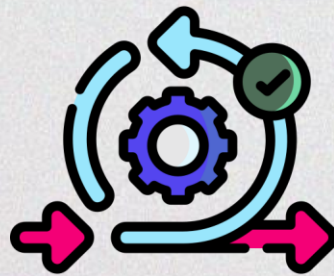
Transparency



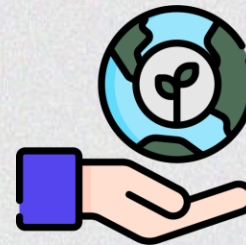
Citizens



Inclusion

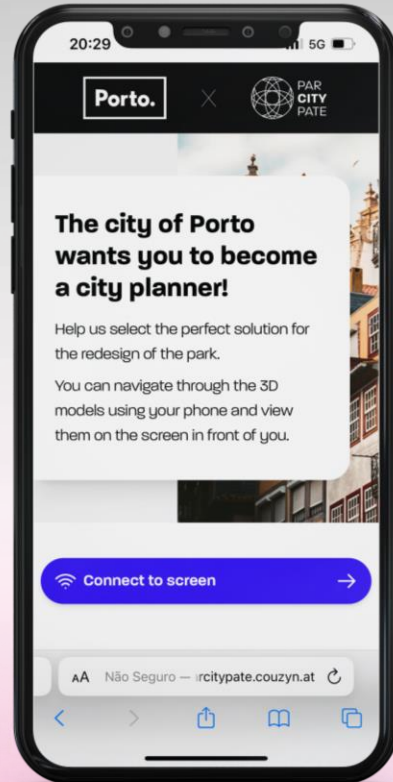


Flow



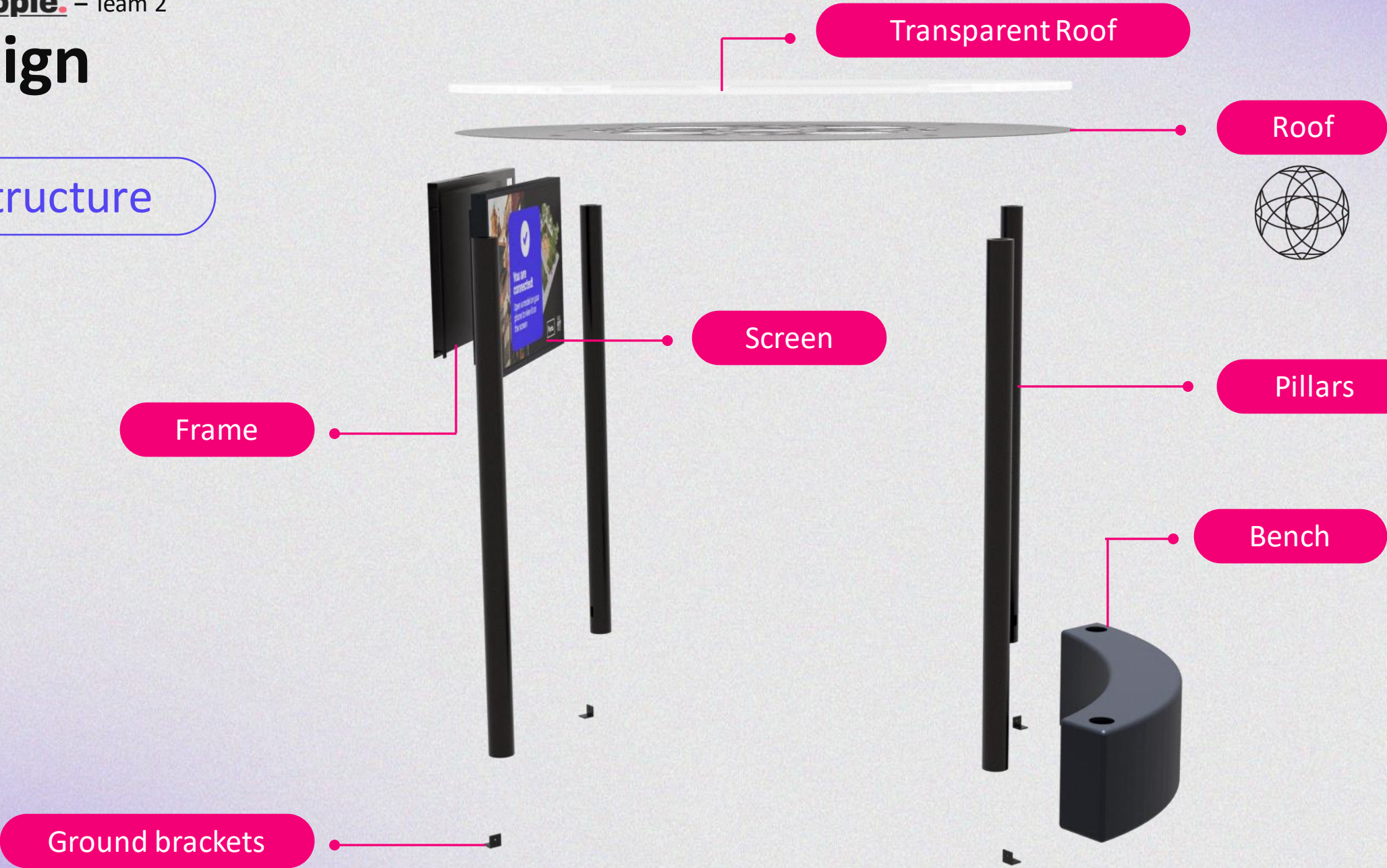
Sustainable

Proposed Solution



Design

Structure



Design

Control

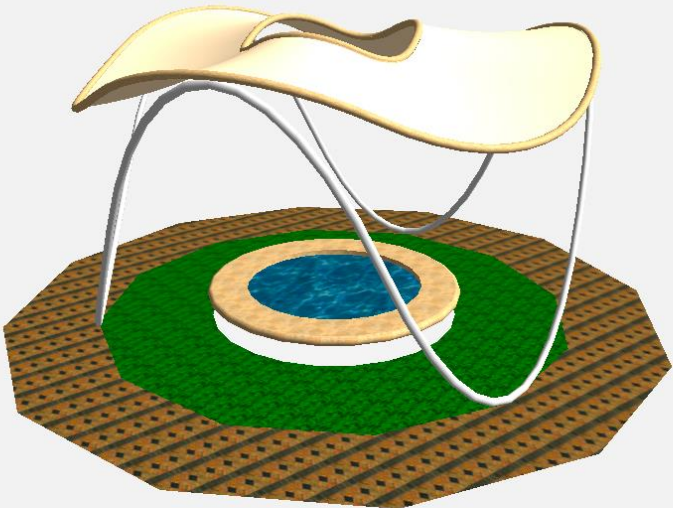


Mobile phone

+

Screen

2 Water Park

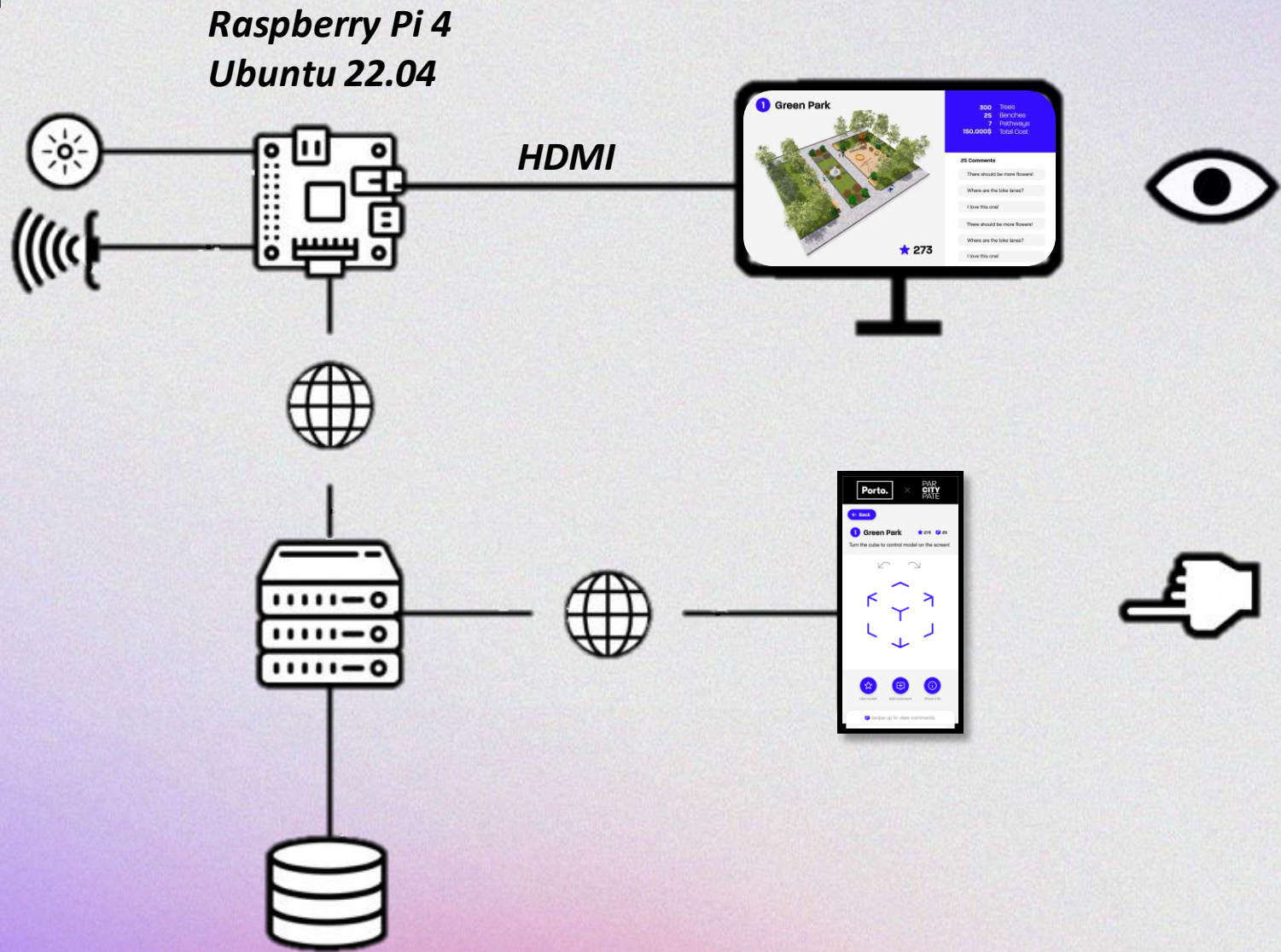


15	Trees
7	Benches
3	Pathways
170000	Total Cost

4 Comments

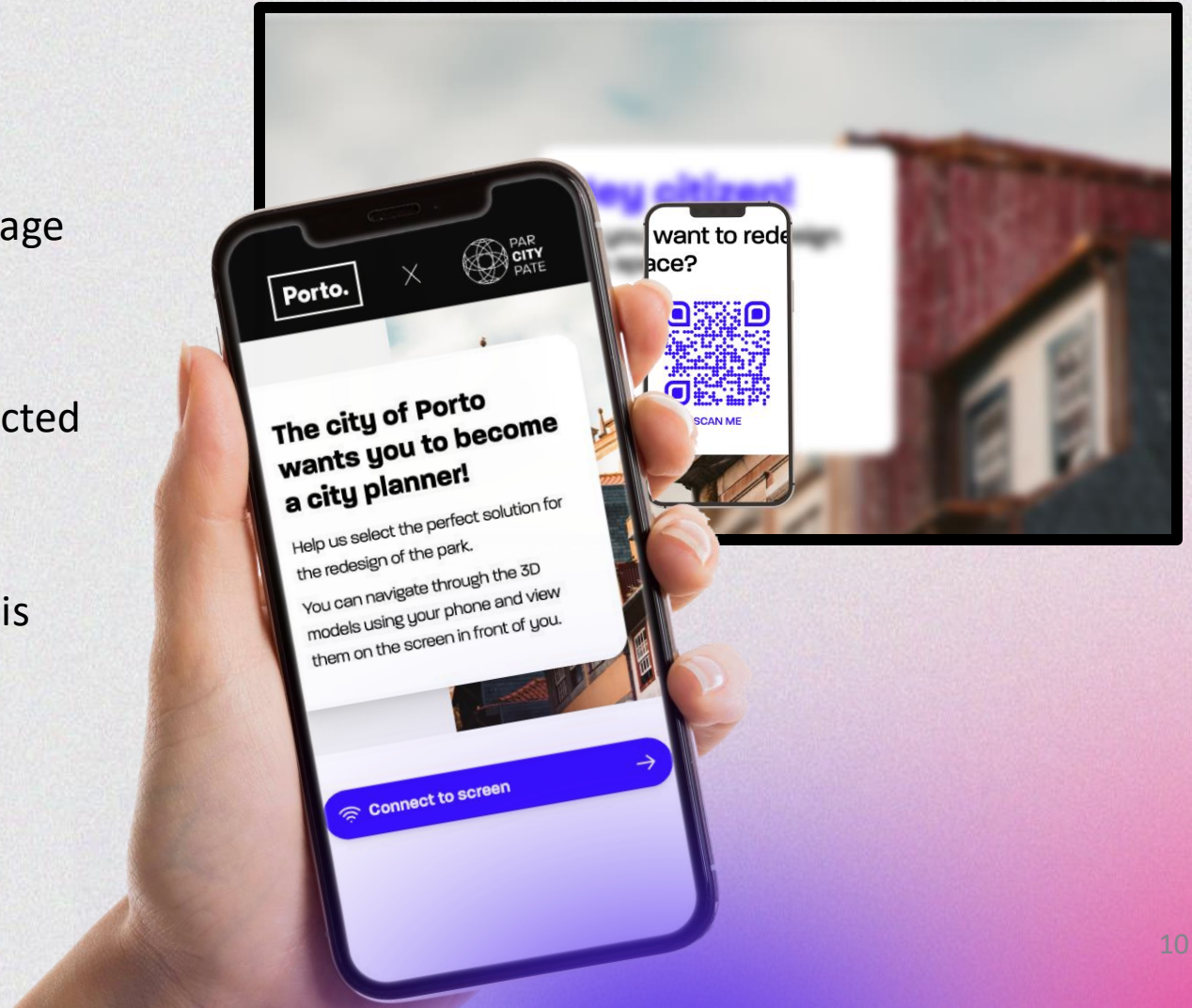
- This is looking like the future!
- My kids would love this <3
- Why does it have to be so expensive ?
- Isn't it dangerous ?

Prototype



Prototype Implementation – Software Frontend

- 2 separate Vue.js web-applications
- QR Code on the screen leads to web-application
- Smartphone web-app automatically connects on page load
- Error information if someone else is already connected with the option to manually reconnect
- Screen automatically reconnects if the connection is lost
- Idle users are disconnected after 2 minutes



Prototype Implementation – Software Backend

- 2 Node.js server applications+ 1 MongoDB database
- Separate deployment to take advantage of free server options instead of different ports
- Server 1 handles connection and communication between screen and smartphone using web-sockets
- Server 2 handles communication with database to store information on models and interactions

```
// incoming messages
ws.on("message", data => {
  const message = JSON.parse(data);

  // handle connection requests
  if (message.type === "connection") {
    ws.userId = message.id

    let USERS = CLIENTS.filter(client => client.userId !== 'screen')
    let refuseReason = null

    // refuse connection if someone is already connected or screen is not connected
    if (ws.userId !== "screen") {
      if (USERS.length) {
        let refuseReason = "other_connection"
        ws.send(JSON.stringify({ type: "connection", response: "refused", reason: refuseReason }))
        console.log("Connection refused", refuseReason)
        ws.close()
      }
      if (!screen) {
        let refuseReason = "screen_not_connected"
        ws.send(JSON.stringify({ type: "connection", response: "refused", reason: refuseReason }));
        console.log("Connection refused", refuseReason)
        ws.close()
      }
    }

    // add client to clients list
    if (!refuseReason) {
      CLIENTS.push(ws);
      let clientString = `Connection accepted - CONNECTED CLIENTS (${CLIENTS.length}): `
      CLIENTS.forEach((client) => {
        clientString += `${client.userId} `
      });
      console.log(clientString)
      screen?.send(JSON.stringify({ type: "connection", status: "client_connected" }));
    }
  }

  // forward user messages to screen
  else if (ws.userId !== 'screen' && CLIENTS.includes(ws)) {
    console.log(`A user has sent us: `, message)
    screen?.send(JSON.stringify(message));
  }
});
```

Tests and Results

1. Interface Test



Automated interface test in a Virtual Machine

Pixel recognition and text recognition algorithms

Tests availability and reachability of expected and required interface elements



All interactions involved in a full user flow are working as intended and expected across browsers

Tests and Results

1. Performance Test



Page Speed Insights

Sends request to test content load times

Measures indicators for user experience based
on page performance



Both frontend apps have performance scores over 90%. There are only slight delays caused by the performance-intense 3D models.

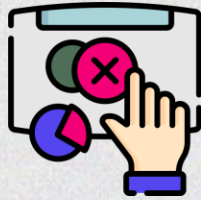
Conclusion

After analyzing **traditional concepts** of citizen participation and considering **modern approaches**, it was possible to **identify existing problems** and solve them with the **Parcitypate**.

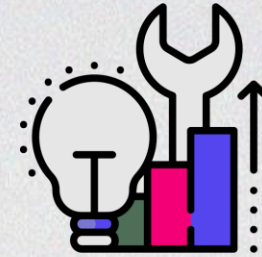
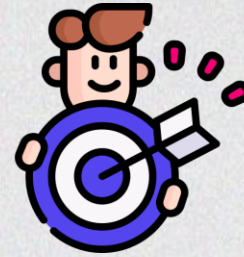


Achievement

Solution



Personal



Future Development

- Perfection of parts, 3D models and simulations
- Real size/material prototype
- Expansion of the software
- Etc.





thePeople.

