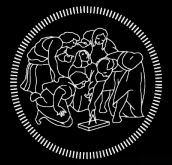


POLITECNICO
MILANO 1863

Advance Coding Tools And Methodologies
29 june 2023

FACETUNE

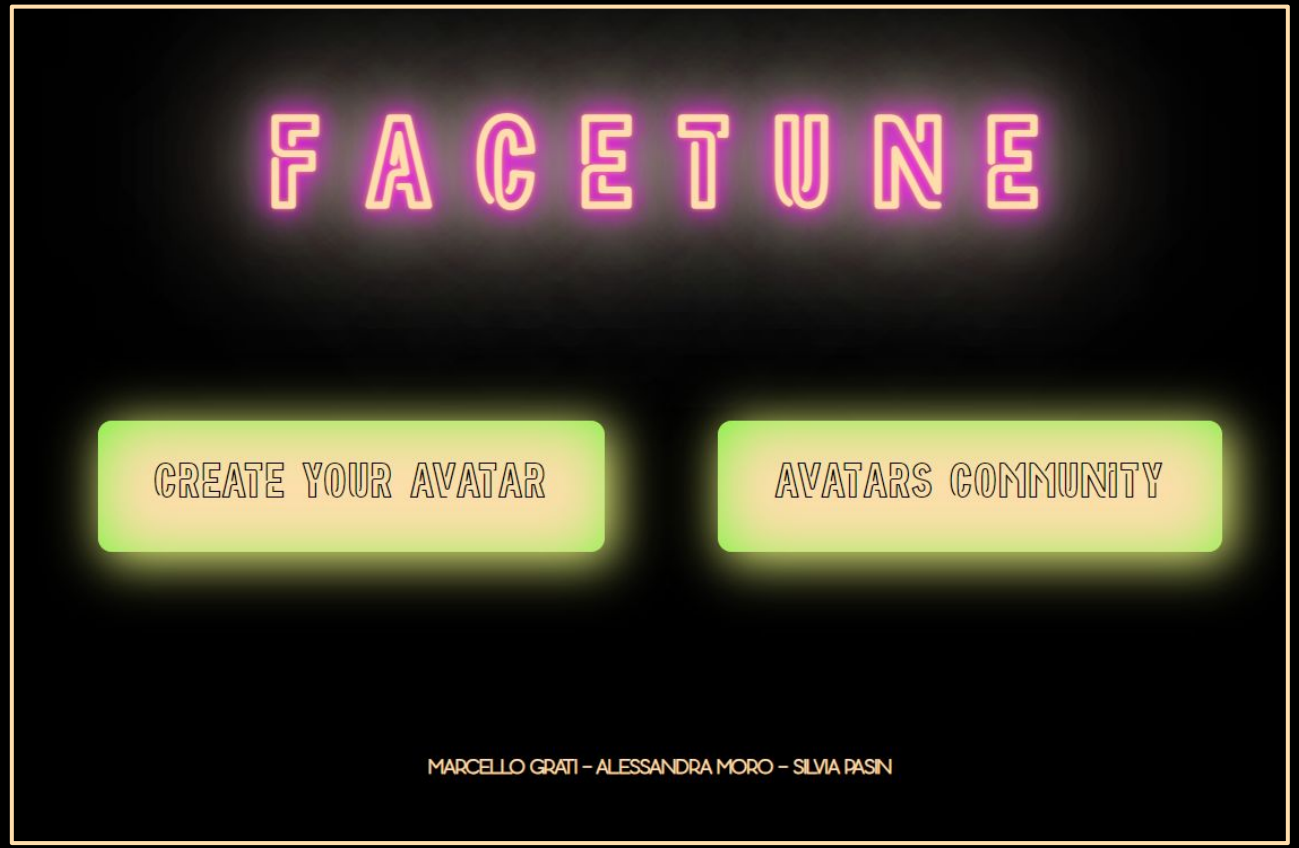
Marcello Grati
Alessandra Moro
Silvia Pasin

- **Graphical User Interface**

Homepage

index.html

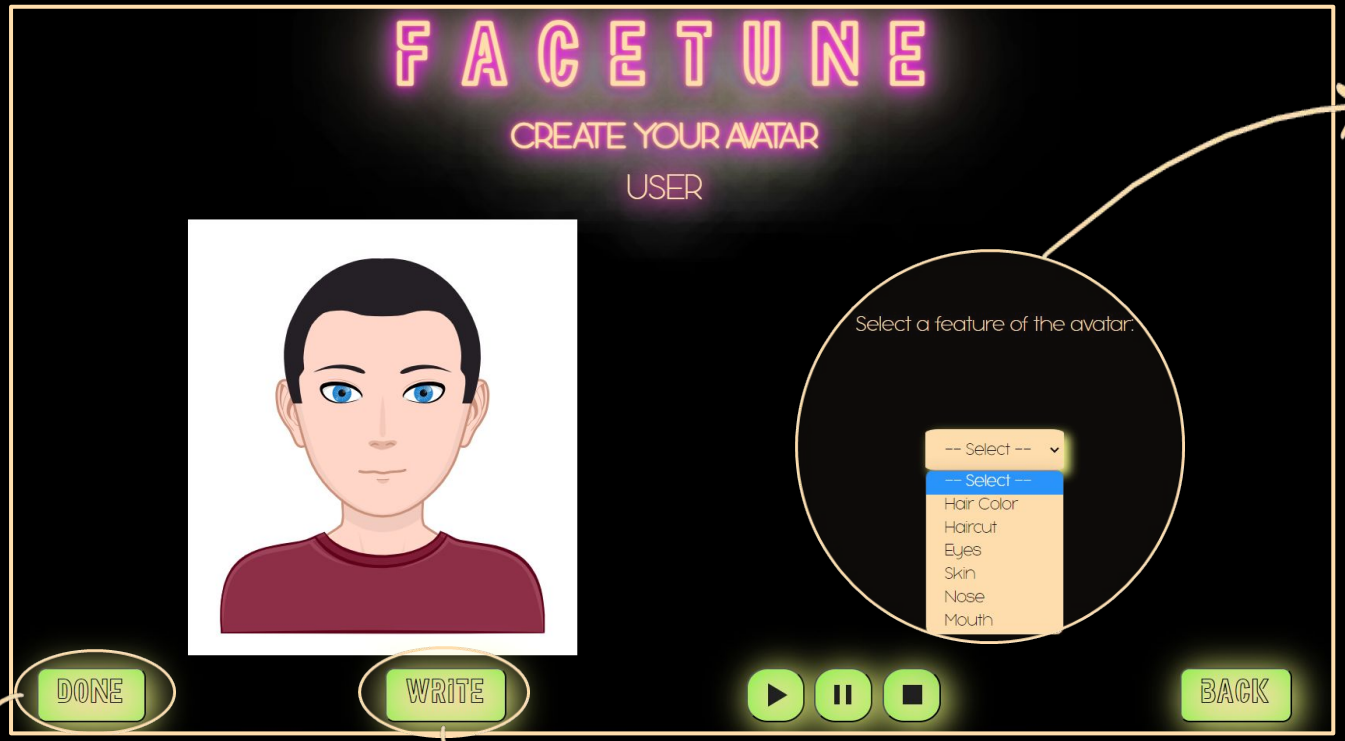
style.css



Create your avatar

- avatar_page.html
- avatarpage_style.css
- avatarpage_app.js

Avatar creation:



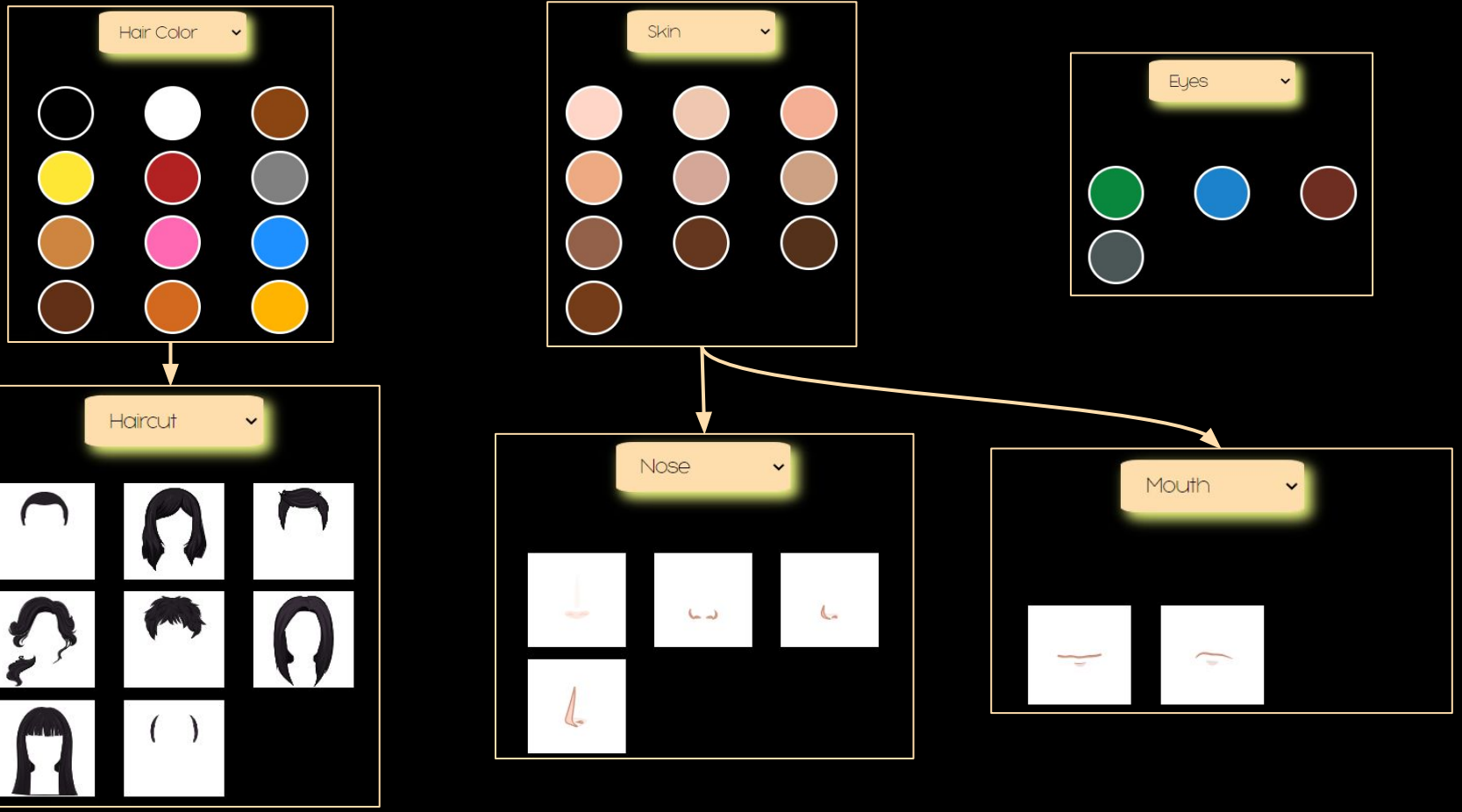
Selection of features:

- Hair color
- Haircut
- Eyes color
- Skin color
- Nose shape
- Mouth shape

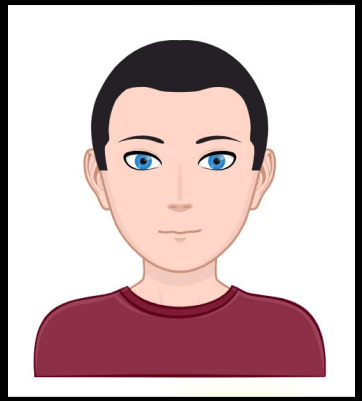
Creation completed and avatar saved in the “Avatars community”

According to the chosen characteristics, a tune is generated and played.
It’s still possible to modify the avatar.

Selection of features:



body.svg



The image of the avatar is created using Scalable Graphics Vector format. Each shape is created through the tag <path> and then, using the tag <g>, grouped together to form the various part of the body.

The elements whose color can be changed from the user, are assigned to a class defined in the .css according to the color chosen.

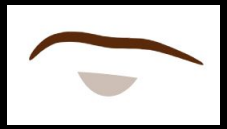
```
<g id="eyebrows_right" class="red_hair">
   <path id="SvgjsPath5354-5-0" d="[...]" stroke-width="0"
         opacity="1"/>
</g>
```

For what concerns haircut, nose and mouth, SVG images of the features are used inside of the main SVG (body.svg).

```
<use id="haircut" href="1h.svg#1h" class="brown_hair"/>
```

```
<use id="nose" href="type4n.svg#type4n" class="skin81"/>
```

```
<use id="mouth" href="type2m.svg#type2m" class="skin81"/>
```



FACETUNE

CREATE YOUR AVATAR

NICO

DOWNLOAD

BACK

Download of the tune created

Avatars Community

- community_page.html
- community_style.css
- community_app.js

Avatars community:

• Database management

app.js

facetune.db

Creation of table genoma:

```
const db = require('better-sqlite3')('facetune.db');

db.prepare(
 `CREATE TABLE IF NOT EXISTS genoma (
   haircolor TEXT NOT NULL,
   haircut TEXT NOT NULL,
   eyes TEXT NOT NULL,
   skin TEXT NOT NULL,
   nose TEXT NOT NULL,
   mouth TEXT NOT NULL,
   username TEXT NOT NULL,
   score REAL DEFAULT 0,
   votes INTEGER DEFAULT 0,
   id INTEGER DEFAULT 0
);`,
).run();
```

Insertion of new avatar:

```
db.prepare(
  `INSERT INTO genoma (haircolor, haircut, eyes, skin, nose, mouth, username, id)
VALUES (?, ?, ?, ?, ?, ?, ?, ?)`,).run(...avatar_da_salvare);
```

Filtering of avatars:

Example of ‘filters’: filters = [hair_color, red_hair]

```
const query = `SELECT * FROM genoma WHERE ${filters[0]} LIKE ?;`;
const filtered_avatars = db.prepare(query).all(filters[1]);
```

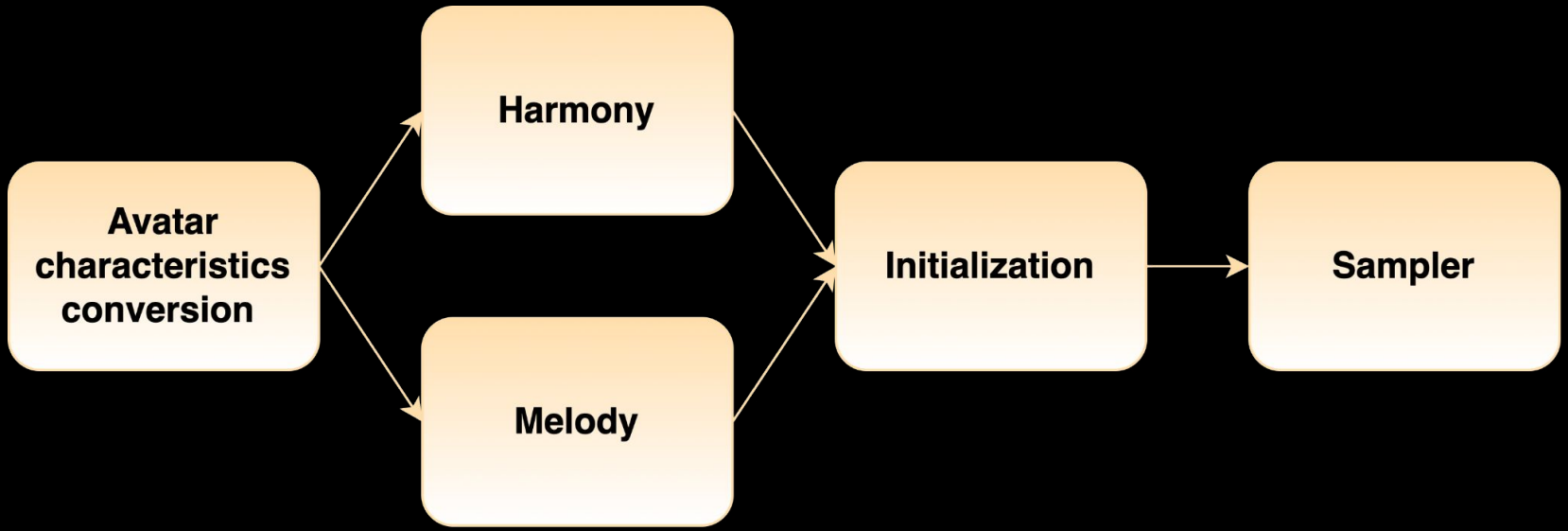
Updating the score:

```
const existingAvatars = db.prepare('SELECT * FROM genoma WHERE id = ?').all(id);

db.transaction(() => {
 if (existingAvatars.length > 0) {
   const updateStmt = db.prepare('UPDATE genoma SET score = ?, votes = ? WHERE id = ?');
   existingAvatars.forEach(existingAvatar => {
     updateStmt.run(score, votes,id);
   }); }})();
```

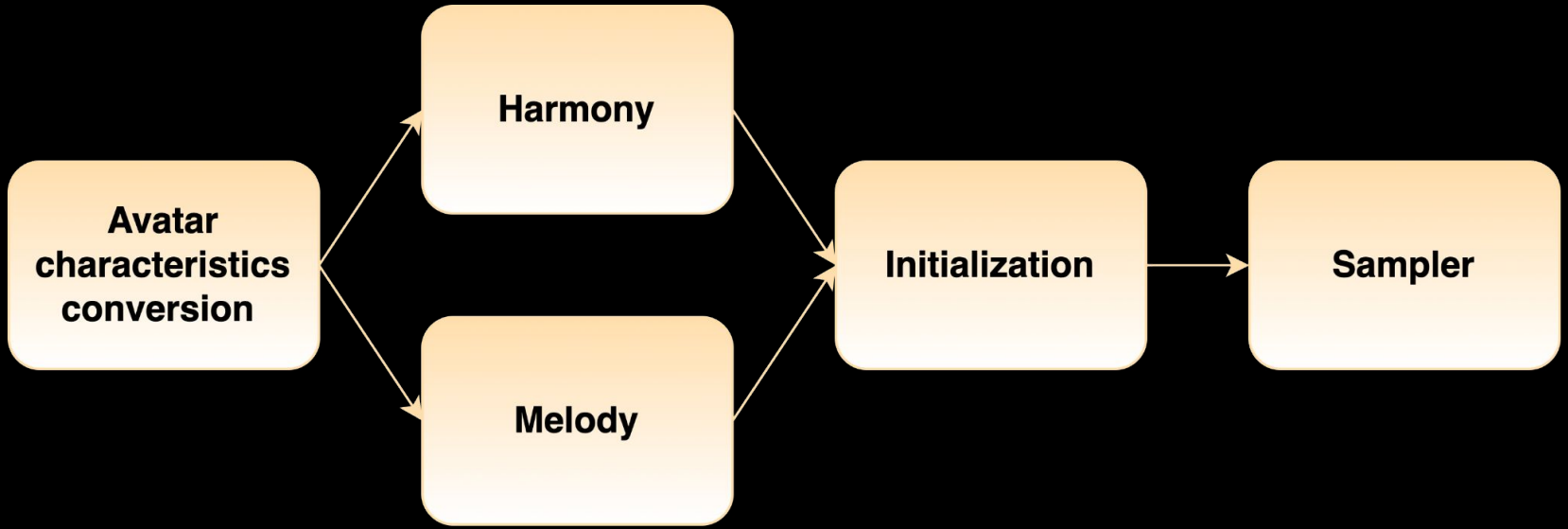
• Music generation

music.js

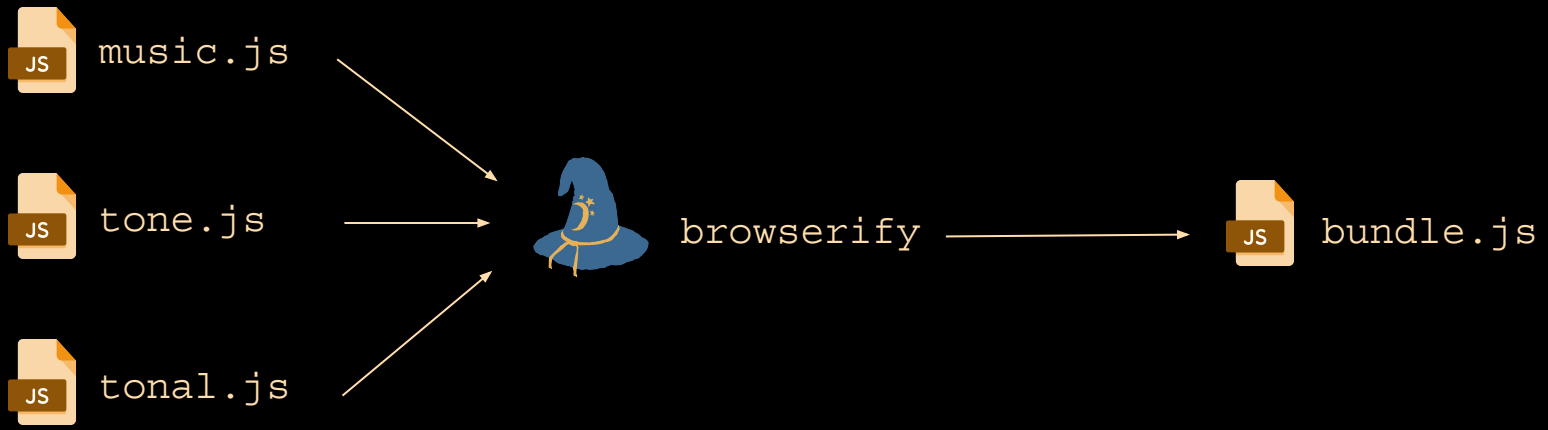


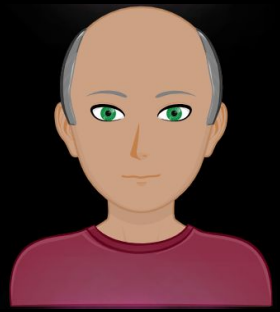

Hair Color
Key
C
C#
D
D#
E
F
F#
G
G#
A
A#
B
Eyes Color
Number of measures
4
5
6
7
Skin Color
BPM
100
102
104
106
108
110
112
114
116
118
All features
Seed for random generation
Chord progression, melody notes and durations

music.js


Avatar characteristics conversion
Harmony
Melody
Initialization
Sampler

- **Libraries**




Thank you for the attention!