

Project Pitch

Team 16 - Drum Machine

Team Members

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Overview

Our chosen track of the project is Drum Machine “BA DUM TSSS”.

- Main types of user that our application stands for is people interested in music and creative people that want to design their own background of a music clearly and in a fast, simple and practical way.
- Our project will have 2 main interfaces: first interface is the sequencer interface in which a beat designed by the user by pressing sound buttons will be played in a sequence loop; the second interface is the real time playback interface in which the user will be able to play sounds by pressing on to the designated buttons manually. User can switch between these two interfaces.
- There are buttons placed in a rectangle area, every line of buttons have the same sound. Every sound's velocity can be changed manually. This offers a range of different combinations.

Overview continued

- In the sequencer mode, the beats can be recorded, played, stopped, and cleared, the tempo of the beats can be set, time signatures can be selected from provided time signatures such as 4/4, 3/4...
- In the sequencer mode, the user can also choose between preset beats provided or can choose the random beat option.
- Moreover, sounds can be changed by the user for the beats with the help of extendible sound library feature .
- Properties of sounds (predetermined by the program or added by the user) can be changed (velocity, duration, etc.).

Feature 1

Name: Sequencer Mode

Description:

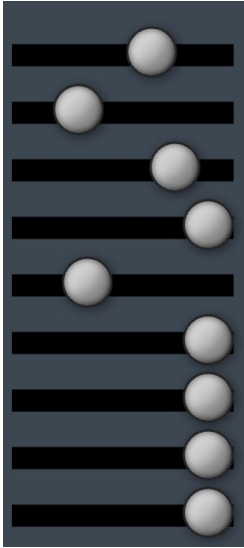
What our Sequencer Has:

- Ability to **save** designed sequences of drum hits with a user entered name to “User Presets”
- Ability to **record** a sequence
- Ability to **navigate** through and play pre-existed sequences
- Ability to **start/stop** sequences
- Support for setting note **velocity** (how hard a component is hit) and **duration** (how long the sound lasts)
- Options to define **time signatures** (i.e. 4/4, 8/16,)
- Ability to choose **tempo**. The tempo of the sequence can be changed while it is playing.
- Ability to clear the whole sequence by pressing the “**Clear**” button

Champion: Sena Deniz Avukat- Ceren Duru Çınar - Kerem Boncuk

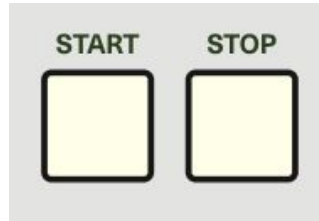
Feature 1 continued

-Example buttons to change velocity, duration and echo amount of each component.



<https://www.onemotion.com/drum-machine/>

-Example buttons for tempo, start, stop, clear and record attributes.



-These button example images are from : <https://roland50.studio/>

Feature 2

Name: Sound Control

Description:

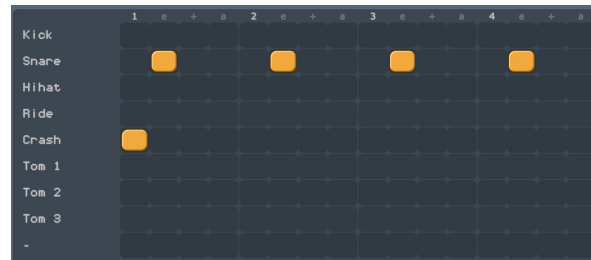
The users can form a pattern either by **pressing the sound buttons** by themselves or can use the defined **preset sound combinations**. The sound combinations can be designed via pressing buttons. Buttons that are on the **same line** have **the same sounds**, and the result of the sound sequence can be heard with the **play attribute of the sequencer in the default sequence mode**.

Some default sounds are:

- Kick, snare, hihat, ride, toms,...

User can also select from one of the **preset sound combinations**. These preset sounds can be chosen from a spinner. The chosen preset sounds will **automatically trigger specific buttons** and can be played with the **play attribute of the sequencer in the default sequence mode**.

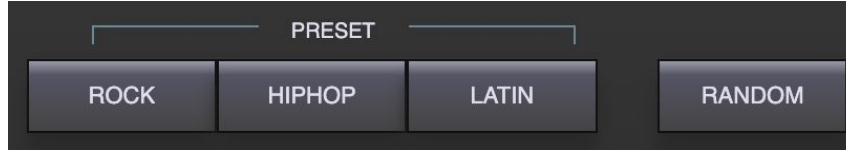
Planned preset combinations: Rock, Hip-hop, Latin, Pop,...



Sound buttons example from
<https://www.onemotion.com/drum-machine/>

Feature 2 continued

Moreover, random sound combinations can be created with a random button. The button will automatically trigger random buttons and can be played with the play attribute of the sequencer in the default sequence mode.



An example of preset sounds and random button from <https://www.virtualdrumming.com/drums/virtual-drum-machine-online/drum-machine-online-free.html> (Our plan of preset sounds include spinner instead of buttons)

Champion: Ceren Duru Çınar

Feature 3

Name: Real Time Playback Interface / Soundboard

Description:

- Users will be able to **switch** between **real time playback interface** and **sequencer interface** through help of a button.
- This way “**Real Time Playback**” mode will **act as a soundboard** which is independent from the sequencer.
- Buttons of the soundboard interface will be **empty** at first. The user can **assign sounds** to the button from **provided sound options**.
- Apart from the predetermined sounds the user will be able assign his/her own sounds to any button set.
- **Properties of sounds** (predetermined by the program or added by the user) can be **changed** (velocity, duration, etc.) with the help of right click button.
- When **clicked** to a button the **sound** that is assigned to that particular button will be **played** and a **visual feedback** (i.e. light) will be shown around the border of the pressed button for **visual effects**.

Champion: Sena Deniz Avukat

Feature 3 continued

- Example soundboard interface



<https://voicemeeter.com/user-guide-create-a-soundboard-with-voicemeeters-macro-buttons/>

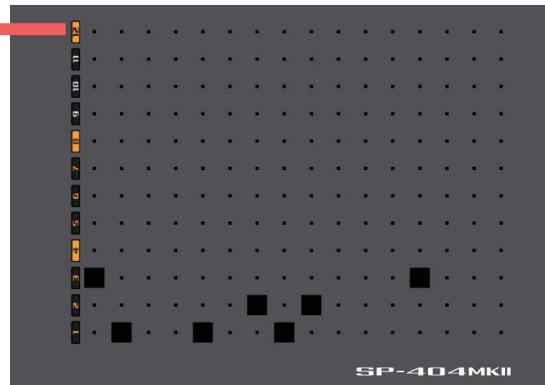
Feature 4

Name: Expandible Sound Library

Description:

- In addition to predetermined sounds that are hardcoded in the application, user will be able to **import his/her own sounds** to the sound library with the help of this feature.
- By this feature, sounds of the buttons can be selected from the library and used for beat construction both in sequencer mode and real time playback mode..
- Properties of the new sounds that are added by the users also will be able to be adjusted with the **sound control panel**.
- In the Sequencer Mode there will be determined number of sounds (i.e. 12) that are available for the user. These sounds can be changed with the ones that are in the Sound Library. Also, in the Real Time Playback Mode there will be predetermined number of buttons (i.e. 16), these buttons will also can be changed with the sounds that are present in the Sound Library.
- In conclusion, purpose of the extendible sound library is to let user import desired sounds to the drum machine and let users be more creative.

Each sound can
be changed



Example of sound buttons from: <https://roland50.studio>

Time log

1	Team number	16		
2				
3	Member	Activity	Week number	Hours
4	Ceren Duru Çınar	Created Github repository	1	0.5
5	Ceren Duru Çınar	Created google slides, decided properties of sound control and wrote it as feature 4, created team contract	2	5
6	Sena Deniz Avukat	Decided properties of sequencer, wrote it as feature 1, decided properties of feature 3 and wrote it	2	5
7	Kerem Boncuk	Wrote the overview, decided properties of expandible sound library and wrote it as feature 4, created time log	2	5
8				
9				
10				
11			TOTAL	15.5
12				

Signed contract

The signed team contract:

https://docs.google.com/document/d/1Glhno--f5LVNTDnN-3zCjWYHVowp_iIKX6tB_kV2Ukg/edit?usp=sharing