Metronome

Feasibility

Web based metronome.

I know this problem is solvable as it is possible to do in a finite number of steps as metronomes already exist.

The main calculation is working out the millisecionds per tick.

Analysis

Foreign copany manager stakeholder known as Mr Dees Nuts will use the app to improve his golf swing.

[insert metronome research here]

Design

Features

Flahes/pulses the correct bpm with a tick each time the light turns on.

Helps the deaf stay in time using brightness of the flash rather than ticks.

Limitations might be appstores.

Harware requirement would be 1.8 GHz or faster processor. 2 GB of RAM and 130 GB of availiboe space.

Will also need a HTML5 browser. Mr Dees Nuts has all of this technology.

|  |  |  |
| --- | --- | --- |
| Number | Criteria | Justification |
| 1 | Pulses between ticks. | Acessibility for deaf people increased. |
| 2 | User can set BPM | All people can then use it regardless of skill and muscular controll |
| 3 | User can use a bar or buttons to assign BPM | Anyone can change the beats per minute. |
| 4 | All code is loaded when website is loaded | Will not requiore an active internet connection to use. |

Implementation

Algorithms

BPM = user input

Interval = 1 \* 60 \* 1000BPM

User should be able to enter the beats per minute and the maths converts it to milluiseconds between beats.

Usability features:

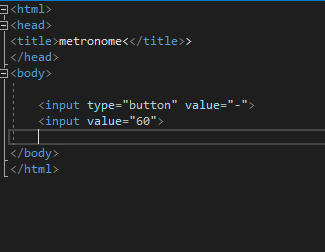
Current BPM

Testing

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Number | Description | Success criteria | Test data | Expected result |
| 1a | Basic web page | User input field that allows you to type in a number. Two buttons on either side. | Page load | A basic web page with a software version of the diagram pictured above. |
| 1b | BPM | Enter invalid input | 0, a, “” | Error message displayed to the user |
| 1c | BPM | Low valid input | 1 | User allowed to continue |
| 1d | BPM | High valid input | 199 | User allowed to continue |
| 1e | BPM | User attempts to increase beyond possible | 199 plus +5 button press. | BPM increased to 200 plus error message to the user. |
| 1f | BPM | User attempts to decrease beyond possible | 01 plus -5 button press. | BPM decreased to 0 plus error message to the user. |
| 1g | BPM | BPM matches the user input | User changes input mid-way through | Metronome restarts when math is completed. Pulsing should stop whenever the user input changes. |
| 2 | Graphics | Pulse flashes sync | Flash stays in time with the sink after being run for a while. | Every so often reset it maybe? |

Variable and validation

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Data type | Validation | Justification |
| BPM | Int | Range check | Makes sure user can use it. |
| Input | int | Integer check, use TryParse | Words wont be mathed. |
| Interval | Float | Will never be used by user so wont need validation other than a positive check | The computer cant wait -3 seconds for example. |
| Button click | Boolean | True or false |  |
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Installation

The first thing I did was to create abutton with an assignd value. Here is a screenshot.

Evaluation

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Maintenance

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