Proj

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Contents

1 LED Groupings:

1.1 Group 0:

1.1.1 LED 1-2 (Pins 2-3)

Control function for these pins should do following:

- Called by heartrate sensor

- activate first pins
- call subsequent group functions to start looping

1.2 Group 1: Signal speed scale $\frac{16}{22} \times \frac{1}{7}$

1.2.1 LED 3-7 (Pins 4-8)

Bach Bundel

1.2.2 LED 8-13 (Pins 9-14)

IN Path 1

1.2.3 LED 14-15 (Pins 15-16)

IN Path 2 - Completion triggers LEDs 16-17 before group 2 start

1.3 Group 2:

1.3.1 LED 16-17 (Pins 17-18)

AV Node, Hold for scale of $\frac{10}{22}$

1.4 Group 3:

1.4.1 LED 18-26 (Pins 19-27)

Bundle of sexism, signal speed scale: $\frac{2}{22} \times \frac{1}{9}$

1.5 Group 4: Signal speed scale $\frac{4}{22} \times \frac{1}{8}$)

1.5.1 LED 33-40 (Pins 34-41)

LV Purkinje fiber

1.5.2 LED 27-32 (Pins 28-33)

RV Purkinje fiber

2 Sudo code

strandActive[8] = [True, False, False. . .] *tracks which strands should be running* strandLastUpdate[8] = [0, 0, 0, . . .] *tracks time between last update for each strand (Need to reset when complete?)* strandRates[8] = [x, y, z, . . .] *update rates for each strand* strandLastPin[8] = [1, 3, 8, . . .] *tracks last pin update for each strand. In compination with* strandMaxPin *can be used to check for strand termination* strandMaxPin[8] = [7, 13, 15, . . .] $\text{num}_{\text{strands}}$ = 8

while (looping condition) { for strand in range($\text{num}_{\text{strands}}$): $\text{current}_{\text{time}}$= millis() elapsed = $\text{current}_{\text{time}}$ - strandLastUpdata[strand] if elapsed >= strandRates[strand] & stransActive[strand] update(strand) if strandLastPin[strand] = strandMaxPin[strand]: strandActive[strand] = false }

3 Assumptions made:

- time for each group represents time for longest path to complete and therefore each led will activate
- arduino led activation time is instantanious
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