

# FightML\_HitsLandedByArse\_all\_fields

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## This machine learning program examines the Arse May 2019 UFC fight

[https://www.espn.com/mma/fightcenter/\\_/id/401107798/league/ufc](https://www.espn.com/mma/fightcenter/_/id/401107798/league/ufc) has access to the 3 rounds of 5 minutes fight 5/18/2019 The csv file is found at:

<https://github.com/JanJanJan2018/FightML/blob/master/ArseErosaFightAudit.csv>

Predict the number of hits Arse lands based on the seconds into the round, elapsed since last action, cumulative number of hits received/landed/missed and number of hits received total for that round This data is split into a training set of 70% and a testing set of 30% based only on those instances action other than circling/standing/stepping away/toward/to the side occurs There are 224 instances of 156 training set samples of each second of action, and the remaining 68 are testing samples of each second of action

```
ArseErosa <- read.csv('ArseErosaFightAudit.csv',
                      sep=',', header=TRUE,
                      na.strings=c('','NA'))#224X18

#ArseErosa <- ArseErosa[,1:8]

ArseErosa

##      Round SecondsIntoRound SecondsLastRoundAction cmTotHitsR.A
## 1         1             6              6              0
## 2         1            19             13              0
## 3         1            21              2              0
## 4         1            24              3              1
## 5         1            36             12              1
## 6         1            39              3              2
## 7         1            46              7              2
## 8         1            49              3              2
## 9         1            51              2              2
## 10        1            57              6              2
## 11        1            61              4              2
## 12        1            76             15              2
## 13        1            80              4              2
```

|       |   |     |    |    |
|-------|---|-----|----|----|
| ## 14 | 1 | 88  | 8  | 2  |
| ## 15 | 1 | 89  | 1  | 2  |
| ## 16 | 1 | 103 | 14 | 2  |
| ## 17 | 1 | 104 | 1  | 2  |
| ## 18 | 1 | 106 | 2  | 3  |
| ## 19 | 1 | 107 | 1  | 4  |
| ## 20 | 1 | 121 | 14 | 4  |
| ## 21 | 1 | 127 | 6  | 4  |
| ## 22 | 1 | 132 | 5  | 4  |
| ## 23 | 1 | 145 | 13 | 4  |
| ## 24 | 1 | 152 | 7  | 4  |
| ## 25 | 1 | 153 | 1  | 4  |
| ## 26 | 1 | 161 | 8  | 5  |
| ## 27 | 1 | 177 | 16 | 5  |
| ## 28 | 1 | 179 | 2  | 6  |
| ## 29 | 1 | 181 | 2  | 7  |
| ## 30 | 1 | 184 | 3  | 7  |
| ## 31 | 1 | 185 | 1  | 7  |
| ## 32 | 1 | 189 | 4  | 7  |
| ## 33 | 1 | 190 | 1  | 7  |
| ## 34 | 1 | 195 | 5  | 7  |
| ## 35 | 1 | 205 | 10 | 7  |
| ## 36 | 1 | 206 | 1  | 7  |
| ## 37 | 1 | 212 | 6  | 8  |
| ## 38 | 1 | 214 | 2  | 8  |
| ## 39 | 1 | 218 | 4  | 9  |
| ## 40 | 1 | 226 | 8  | 9  |
| ## 41 | 1 | 227 | 1  | 10 |
| ## 42 | 1 | 234 | 7  | 10 |
| ## 43 | 1 | 239 | 5  | 10 |
| ## 44 | 1 | 241 | 2  | 10 |
| ## 45 | 1 | 242 | 1  | 10 |
| ## 46 | 1 | 243 | 1  | 10 |
| ## 47 | 1 | 244 | 1  | 10 |
| ## 48 | 1 | 254 | 10 | 10 |
| ## 49 | 1 | 255 | 1  | 10 |
| ## 50 | 1 | 256 | 1  | 11 |

|       |   |     |    |    |
|-------|---|-----|----|----|
| ## 51 | 1 | 259 | 3  | 11 |
| ## 52 | 1 | 262 | 3  | 12 |
| ## 53 | 1 | 263 | 1  | 12 |
| ## 54 | 1 | 264 | 1  | 12 |
| ## 55 | 1 | 265 | 1  | 12 |
| ## 56 | 1 | 266 | 1  | 12 |
| ## 57 | 1 | 267 | 1  | 12 |
| ## 58 | 1 | 273 | 6  | 12 |
| ## 59 | 1 | 274 | 1  | 12 |
| ## 60 | 1 | 275 | 1  | 12 |
| ## 61 | 1 | 276 | 1  | 12 |
| ## 62 | 1 | 284 | 8  | 12 |
| ## 63 | 1 | 287 | 3  | 12 |
| ## 64 | 1 | 288 | 1  | 12 |
| ## 65 | 1 | 294 | 6  | 13 |
| ## 66 | 1 | 295 | 1  | 13 |
| ## 67 | 1 | 297 | 2  | 14 |
| ## 68 | 1 | 302 | 5  | 14 |
| ## 69 | 2 | 1   | 0  | 0  |
| ## 70 | 2 | 2   | 1  | 0  |
| ## 71 | 2 | 3   | 1  | 0  |
| ## 72 | 2 | 4   | 1  | 0  |
| ## 73 | 2 | 6   | 2  | 0  |
| ## 74 | 2 | 8   | 2  | 1  |
| ## 75 | 2 | 9   | 1  | 2  |
| ## 76 | 2 | 16  | 7  | 2  |
| ## 77 | 2 | 18  | 2  | 2  |
| ## 78 | 2 | 23  | 5  | 2  |
| ## 79 | 2 | 24  | 1  | 2  |
| ## 80 | 2 | 25  | 1  | 2  |
| ## 81 | 2 | 43  | 18 | 2  |
| ## 82 | 2 | 47  | 4  | 2  |
| ## 83 | 2 | 49  | 2  | 2  |
| ## 84 | 2 | 52  | 3  | 2  |
| ## 85 | 2 | 66  | 14 | 2  |
| ## 86 | 2 | 67  | 1  | 2  |
| ## 87 | 2 | 68  | 1  | 2  |

|        |   |     |    |   |
|--------|---|-----|----|---|
| ## 88  | 2 | 73  | 5  | 2 |
| ## 89  | 2 | 74  | 1  | 2 |
| ## 90  | 2 | 75  | 1  | 2 |
| ## 91  | 2 | 76  | 1  | 2 |
| ## 92  | 2 | 96  | 20 | 2 |
| ## 93  | 2 | 102 | 6  | 2 |
| ## 94  | 2 | 103 | 1  | 2 |
| ## 95  | 2 | 105 | 2  | 2 |
| ## 96  | 2 | 106 | 1  | 2 |
| ## 97  | 2 | 108 | 2  | 2 |
| ## 98  | 2 | 115 | 7  | 2 |
| ## 99  | 2 | 119 | 4  | 2 |
| ## 100 | 2 | 121 | 2  | 2 |
| ## 101 | 2 | 127 | 6  | 2 |
| ## 102 | 2 | 129 | 2  | 3 |
| ## 103 | 2 | 131 | 2  | 3 |
| ## 104 | 2 | 132 | 1  | 3 |
| ## 105 | 2 | 133 | 1  | 3 |
| ## 106 | 2 | 135 | 2  | 3 |
| ## 107 | 2 | 138 | 3  | 3 |
| ## 108 | 2 | 139 | 1  | 4 |
| ## 109 | 2 | 140 | 1  | 4 |
| ## 110 | 2 | 148 | 8  | 4 |
| ## 111 | 2 | 150 | 2  | 4 |
| ## 112 | 2 | 153 | 3  | 4 |
| ## 113 | 2 | 155 | 2  | 4 |
| ## 114 | 2 | 166 | 11 | 4 |
| ## 115 | 2 | 167 | 1  | 4 |
| ## 116 | 2 | 169 | 2  | 4 |
| ## 117 | 2 | 170 | 1  | 4 |
| ## 118 | 2 | 171 | 1  | 4 |
| ## 119 | 2 | 173 | 2  | 4 |
| ## 120 | 2 | 174 | 1  | 4 |
| ## 121 | 2 | 175 | 1  | 4 |
| ## 122 | 2 | 178 | 3  | 4 |
| ## 123 | 2 | 179 | 1  | 4 |
| ## 124 | 2 | 186 | 7  | 5 |

|        |   |     |   |   |
|--------|---|-----|---|---|
| ## 125 | 2 | 187 | 1 | 5 |
| ## 126 | 2 | 189 | 2 | 5 |
| ## 127 | 2 | 190 | 1 | 5 |
| ## 128 | 2 | 197 | 7 | 5 |
| ## 129 | 2 | 200 | 3 | 5 |
| ## 130 | 2 | 202 | 2 | 5 |
| ## 131 | 2 | 207 | 5 | 5 |
| ## 132 | 2 | 211 | 4 | 5 |
| ## 133 | 2 | 213 | 2 | 5 |
| ## 134 | 2 | 214 | 1 | 5 |
| ## 135 | 2 | 219 | 5 | 5 |
| ## 136 | 2 | 221 | 2 | 5 |
| ## 137 | 2 | 223 | 2 | 5 |
| ## 138 | 2 | 224 | 1 | 5 |
| ## 139 | 2 | 225 | 1 | 5 |
| ## 140 | 2 | 227 | 2 | 5 |
| ## 141 | 2 | 229 | 2 | 5 |
| ## 142 | 2 | 231 | 2 | 5 |
| ## 143 | 2 | 232 | 1 | 5 |
| ## 144 | 2 | 233 | 1 | 5 |
| ## 145 | 2 | 235 | 2 | 5 |
| ## 146 | 2 | 236 | 1 | 5 |
| ## 147 | 2 | 239 | 3 | 5 |
| ## 148 | 2 | 241 | 2 | 5 |
| ## 149 | 2 | 245 | 4 | 5 |
| ## 150 | 2 | 247 | 2 | 5 |
| ## 151 | 2 | 255 | 8 | 5 |
| ## 152 | 2 | 257 | 2 | 5 |
| ## 153 | 2 | 258 | 1 | 5 |
| ## 154 | 2 | 259 | 1 | 5 |
| ## 155 | 2 | 260 | 1 | 5 |
| ## 156 | 2 | 264 | 4 | 5 |
| ## 157 | 2 | 267 | 3 | 5 |
| ## 158 | 2 | 272 | 5 | 6 |
| ## 159 | 2 | 275 | 3 | 6 |
| ## 160 | 2 | 276 | 1 | 7 |
| ## 161 | 2 | 277 | 1 | 7 |

|        |   |     |    |   |
|--------|---|-----|----|---|
| ## 162 | 2 | 280 | 3  | 7 |
| ## 163 | 2 | 297 | 17 | 7 |
| ## 164 | 2 | 302 | 5  | 7 |
| ## 165 | 3 | 1   | 0  | 0 |
| ## 166 | 3 | 2   | 1  | 0 |
| ## 167 | 3 | 3   | 1  | 0 |
| ## 168 | 3 | 5   | 2  | 0 |
| ## 169 | 3 | 6   | 1  | 0 |
| ## 170 | 3 | 7   | 1  | 0 |
| ## 171 | 3 | 10  | 3  | 0 |
| ## 172 | 3 | 11  | 1  | 0 |
| ## 173 | 3 | 13  | 2  | 0 |
| ## 174 | 3 | 14  | 1  | 0 |
| ## 175 | 3 | 15  | 1  | 0 |
| ## 176 | 3 | 16  | 1  | 0 |
| ## 177 | 3 | 17  | 1  | 0 |
| ## 178 | 3 | 19  | 2  | 0 |
| ## 179 | 3 | 21  | 2  | 0 |
| ## 180 | 3 | 24  | 3  | 0 |
| ## 181 | 3 | 27  | 3  | 0 |
| ## 182 | 3 | 29  | 2  | 0 |
| ## 183 | 3 | 32  | 3  | 0 |
| ## 184 | 3 | 35  | 3  | 0 |
| ## 185 | 3 | 36  | 1  | 0 |
| ## 186 | 3 | 38  | 2  | 0 |
| ## 187 | 3 | 41  | 3  | 0 |
| ## 188 | 3 | 43  | 2  | 0 |
| ## 189 | 3 | 50  | 7  | 0 |
| ## 190 | 3 | 51  | 1  | 1 |
| ## 191 | 3 | 52  | 1  | 1 |
| ## 192 | 3 | 56  | 4  | 2 |
| ## 193 | 3 | 57  | 1  | 2 |
| ## 194 | 3 | 58  | 1  | 2 |
| ## 195 | 3 | 59  | 1  | 2 |
| ## 196 | 3 | 60  | 1  | 2 |
| ## 197 | 3 | 65  | 5  | 3 |
| ## 198 | 3 | 66  | 1  | 3 |

|        |              |              |              |            |             |
|--------|--------------|--------------|--------------|------------|-------------|
| ## 199 | 3            | 67           | 1            | 4          |             |
| ## 200 | 3            | 68           | 1            | 4          |             |
| ## 201 | 3            | 69           | 1            | 4          |             |
| ## 202 | 3            | 71           | 2            | 4          |             |
| ## 203 | 3            | 73           | 2            | 4          |             |
| ## 204 | 3            | 74           | 1            | 4          |             |
| ## 205 | 3            | 76           | 2            | 4          |             |
| ## 206 | 3            | 77           | 1            | 4          |             |
| ## 207 | 3            | 78           | 1            | 4          |             |
| ## 208 | 3            | 79           | 1            | 4          |             |
| ## 209 | 3            | 81           | 2            | 4          |             |
| ## 210 | 3            | 82           | 1            | 4          |             |
| ## 211 | 3            | 83           | 1            | 4          |             |
| ## 212 | 3            | 87           | 4            | 4          |             |
| ## 213 | 3            | 88           | 1            | 4          |             |
| ## 214 | 3            | 89           | 1            | 4          |             |
| ## 215 | 3            | 90           | 1            | 5          |             |
| ## 216 | 3            | 91           | 1            | 5          |             |
| ## 217 | 3            | 93           | 2            | 5          |             |
| ## 218 | 3            | 94           | 1            | 5          |             |
| ## 219 | 3            | 103          | 9            | 5          |             |
| ## 220 | 3            | 104          | 1            | 6          |             |
| ## 221 | 3            | 105          | 1            | 6          |             |
| ## 222 | 3            | 106          | 1            | 6          |             |
| ## 223 | 3            | 107          | 1            | 6          |             |
| ## 224 | 3            | 111          | 4            | 6          |             |
| ##     | cmTotHitsL.A | cmTotHitsM.A | Hits.Recvd.A | Hits.Lnd.A | Hits.Mssd.A |
| ## 1   | 0            | 0            | 0            | 0          | 0           |
| ## 2   | 0            | 0            | 0            | 0          | 0           |
| ## 3   | 0            | 0            | 0            | 0          | 0           |
| ## 4   | 0            | 0            | 1            | 0          | 0           |
| ## 5   | 0            | 1            | 0            | 0          | 1           |
| ## 6   | 0            | 1            | 1            | 0          | 0           |
| ## 7   | 0            | 2            | 0            | 0          | 1           |
| ## 8   | 0            | 2            | 0            | 0          | 0           |
| ## 9   | 0            | 2            | 0            | 0          | 0           |
| ## 10  | 0            | 3            | 0            | 0          | 1           |

|       |   |    |   |   |   |
|-------|---|----|---|---|---|
| ## 11 | 0 | 3  | 0 | 0 | 0 |
| ## 12 | 0 | 3  | 0 | 0 | 0 |
| ## 13 | 0 | 3  | 0 | 0 | 0 |
| ## 14 | 0 | 3  | 0 | 0 | 0 |
| ## 15 | 0 | 3  | 0 | 0 | 0 |
| ## 16 | 0 | 3  | 0 | 0 | 0 |
| ## 17 | 0 | 3  | 0 | 0 | 0 |
| ## 18 | 0 | 4  | 1 | 0 | 1 |
| ## 19 | 0 | 4  | 1 | 0 | 0 |
| ## 20 | 0 | 4  | 0 | 0 | 0 |
| ## 21 | 0 | 5  | 0 | 0 | 1 |
| ## 22 | 0 | 6  | 0 | 0 | 1 |
| ## 23 | 0 | 8  | 0 | 0 | 2 |
| ## 24 | 0 | 9  | 0 | 0 | 1 |
| ## 25 | 0 | 10 | 0 | 0 | 1 |
| ## 26 | 0 | 10 | 1 | 0 | 0 |
| ## 27 | 2 | 10 | 0 | 2 | 0 |
| ## 28 | 2 | 10 | 1 | 0 | 0 |
| ## 29 | 2 | 10 | 1 | 0 | 0 |
| ## 30 | 3 | 10 | 0 | 1 | 0 |
| ## 31 | 3 | 11 | 0 | 0 | 1 |
| ## 32 | 3 | 11 | 0 | 0 | 0 |
| ## 33 | 4 | 12 | 0 | 1 | 1 |
| ## 34 | 5 | 12 | 0 | 1 | 0 |
| ## 35 | 5 | 12 | 0 | 0 | 0 |
| ## 36 | 5 | 14 | 0 | 0 | 2 |
| ## 37 | 5 | 14 | 1 | 0 | 0 |
| ## 38 | 6 | 14 | 0 | 1 | 0 |
| ## 39 | 6 | 14 | 1 | 0 | 0 |
| ## 40 | 6 | 15 | 0 | 0 | 1 |
| ## 41 | 6 | 15 | 1 | 0 | 0 |
| ## 42 | 7 | 15 | 0 | 1 | 0 |
| ## 43 | 8 | 15 | 0 | 1 | 0 |
| ## 44 | 8 | 15 | 0 | 0 | 0 |
| ## 45 | 9 | 15 | 0 | 1 | 0 |
| ## 46 | 9 | 15 | 0 | 0 | 0 |
| ## 47 | 9 | 16 | 0 | 0 | 1 |



|       |    |    |   |   |   |
|-------|----|----|---|---|---|
| ## 48 | 9  | 17 | 0 | 0 | 1 |
| ## 49 | 10 | 17 | 0 | 1 | 0 |
| ## 50 | 10 | 17 | 1 | 0 | 0 |
| ## 51 | 10 | 17 | 0 | 0 | 0 |
| ## 52 | 10 | 17 | 1 | 0 | 0 |
| ## 53 | 10 | 17 | 0 | 0 | 0 |
| ## 54 | 10 | 17 | 0 | 0 | 0 |
| ## 55 | 11 | 17 | 0 | 1 | 0 |
| ## 56 | 12 | 18 | 0 | 1 | 1 |
| ## 57 | 12 | 19 | 0 | 0 | 1 |
| ## 58 | 13 | 19 | 0 | 1 | 0 |
| ## 59 | 13 | 20 | 0 | 0 | 1 |
| ## 60 | 13 | 21 | 0 | 0 | 1 |
| ## 61 | 13 | 21 | 0 | 0 | 0 |
| ## 62 | 13 | 21 | 0 | 0 | 0 |
| ## 63 | 13 | 21 | 0 | 0 | 0 |
| ## 64 | 14 | 21 | 0 | 1 | 0 |
| ## 65 | 14 | 21 | 1 | 0 | 0 |
| ## 66 | 14 | 21 | 0 | 0 | 0 |
| ## 67 | 14 | 21 | 1 | 0 | 0 |
| ## 68 | 14 | 21 | 0 | 0 | 0 |
| ## 69 | 0  | 0  | 0 | 0 | 0 |
| ## 70 | 0  | 1  | 0 | 0 | 1 |
| ## 71 | 1  | 1  | 0 | 1 | 0 |
| ## 72 | 1  | 1  | 0 | 0 | 0 |
| ## 73 | 2  | 1  | 0 | 1 | 0 |
| ## 74 | 2  | 1  | 1 | 0 | 0 |
| ## 75 | 2  | 2  | 1 | 0 | 1 |
| ## 76 | 2  | 2  | 0 | 0 | 0 |
| ## 77 | 2  | 3  | 0 | 0 | 1 |
| ## 78 | 2  | 4  | 0 | 0 | 1 |
| ## 79 | 2  | 5  | 0 | 0 | 1 |
| ## 80 | 3  | 5  | 0 | 1 | 0 |
| ## 81 | 3  | 5  | 0 | 0 | 0 |
| ## 82 | 3  | 5  | 0 | 0 | 0 |
| ## 83 | 4  | 5  | 0 | 1 | 0 |
| ## 84 | 4  | 6  | 0 | 0 | 1 |

|        |    |    |   |   |   |
|--------|----|----|---|---|---|
| ## 85  | 4  | 6  | 0 | 0 | 0 |
| ## 86  | 4  | 6  | 0 | 0 | 0 |
| ## 87  | 4  | 7  | 0 | 0 | 1 |
| ## 88  | 4  | 8  | 0 | 0 | 1 |
| ## 89  | 4  | 8  | 0 | 0 | 0 |
| ## 90  | 4  | 8  | 0 | 0 | 0 |
| ## 91  | 4  | 9  | 0 | 0 | 1 |
| ## 92  | 4  | 10 | 0 | 0 | 1 |
| ## 93  | 4  | 10 | 0 | 0 | 0 |
| ## 94  | 4  | 10 | 0 | 0 | 0 |
| ## 95  | 4  | 11 | 0 | 0 | 1 |
| ## 96  | 4  | 11 | 0 | 0 | 0 |
| ## 97  | 5  | 11 | 0 | 1 | 0 |
| ## 98  | 6  | 11 | 0 | 1 | 0 |
| ## 99  | 6  | 11 | 0 | 0 | 0 |
| ## 100 | 6  | 11 | 0 | 0 | 0 |
| ## 101 | 6  | 11 | 0 | 0 | 0 |
| ## 102 | 6  | 11 | 1 | 0 | 0 |
| ## 103 | 6  | 11 | 0 | 0 | 0 |
| ## 104 | 6  | 11 | 0 | 0 | 0 |
| ## 105 | 7  | 11 | 0 | 1 | 0 |
| ## 106 | 7  | 12 | 0 | 0 | 1 |
| ## 107 | 7  | 12 | 0 | 0 | 0 |
| ## 108 | 7  | 12 | 1 | 0 | 0 |
| ## 109 | 7  | 12 | 0 | 0 | 0 |
| ## 110 | 7  | 14 | 0 | 0 | 2 |
| ## 111 | 8  | 14 | 0 | 1 | 0 |
| ## 112 | 9  | 14 | 0 | 1 | 0 |
| ## 113 | 9  | 14 | 0 | 0 | 0 |
| ## 114 | 9  | 14 | 0 | 0 | 0 |
| ## 115 | 9  | 14 | 0 | 0 | 0 |
| ## 116 | 9  | 15 | 0 | 0 | 1 |
| ## 117 | 10 | 15 | 0 | 1 | 0 |
| ## 118 | 11 | 15 | 0 | 1 | 0 |
| ## 119 | 11 | 15 | 0 | 0 | 0 |
| ## 120 | 11 | 15 | 0 | 0 | 0 |
| ## 121 | 11 | 17 | 0 | 0 | 2 |

|        |    |    |   |   |   |
|--------|----|----|---|---|---|
| ## 122 | 11 | 17 | 0 | 0 | 0 |
| ## 123 | 11 | 18 | 0 | 0 | 1 |
| ## 124 | 11 | 19 | 1 | 0 | 1 |
| ## 125 | 11 | 19 | 0 | 0 | 0 |
| ## 126 | 11 | 19 | 0 | 0 | 0 |
| ## 127 | 12 | 19 | 0 | 1 | 0 |
| ## 128 | 12 | 20 | 0 | 0 | 1 |
| ## 129 | 12 | 20 | 0 | 0 | 0 |
| ## 130 | 12 | 21 | 0 | 0 | 1 |
| ## 131 | 12 | 21 | 0 | 0 | 0 |
| ## 132 | 12 | 21 | 0 | 0 | 0 |
| ## 133 | 12 | 22 | 0 | 0 | 1 |
| ## 134 | 12 | 23 | 0 | 0 | 1 |
| ## 135 | 12 | 24 | 0 | 0 | 1 |
| ## 136 | 12 | 25 | 0 | 0 | 1 |
| ## 137 | 12 | 26 | 0 | 0 | 1 |
| ## 138 | 12 | 27 | 0 | 0 | 1 |
| ## 139 | 12 | 27 | 0 | 0 | 0 |
| ## 140 | 12 | 27 | 0 | 0 | 0 |
| ## 141 | 12 | 28 | 0 | 0 | 1 |
| ## 142 | 12 | 28 | 0 | 0 | 0 |
| ## 143 | 12 | 28 | 0 | 0 | 0 |
| ## 144 | 13 | 28 | 0 | 1 | 0 |
| ## 145 | 13 | 28 | 0 | 0 | 0 |
| ## 146 | 13 | 29 | 0 | 0 | 1 |
| ## 147 | 13 | 30 | 0 | 0 | 1 |
| ## 148 | 14 | 30 | 0 | 1 | 0 |
| ## 149 | 15 | 30 | 0 | 1 | 0 |
| ## 150 | 15 | 31 | 0 | 0 | 1 |
| ## 151 | 16 | 31 | 0 | 1 | 0 |
| ## 152 | 16 | 32 | 0 | 0 | 1 |
| ## 153 | 16 | 32 | 0 | 0 | 0 |
| ## 154 | 16 | 33 | 0 | 0 | 1 |
| ## 155 | 16 | 33 | 0 | 0 | 0 |
| ## 156 | 16 | 33 | 0 | 0 | 0 |
| ## 157 | 16 | 33 | 0 | 0 | 0 |
| ## 158 | 16 | 33 | 1 | 0 | 0 |

|        |    |    |   |   |   |
|--------|----|----|---|---|---|
| ## 159 | 16 | 34 | 0 | 0 | 1 |
| ## 160 | 16 | 35 | 1 | 0 | 1 |
| ## 161 | 16 | 35 | 0 | 0 | 0 |
| ## 162 | 16 | 35 | 0 | 0 | 0 |
| ## 163 | 16 | 35 | 0 | 0 | 0 |
| ## 164 | 16 | 35 | 0 | 0 | 0 |
| ## 165 | 0  | 0  | 0 | 0 | 0 |
| ## 166 | 1  | 1  | 0 | 1 | 1 |
| ## 167 | 1  | 1  | 0 | 0 | 0 |
| ## 168 | 1  | 2  | 0 | 0 | 1 |
| ## 169 | 1  | 3  | 0 | 0 | 1 |
| ## 170 | 2  | 3  | 0 | 1 | 0 |
| ## 171 | 2  | 4  | 0 | 0 | 1 |
| ## 172 | 3  | 4  | 0 | 1 | 0 |
| ## 173 | 3  | 5  | 0 | 0 | 1 |
| ## 174 | 3  | 5  | 0 | 0 | 0 |
| ## 175 | 4  | 5  | 0 | 1 | 0 |
| ## 176 | 5  | 5  | 0 | 1 | 0 |
| ## 177 | 5  | 5  | 0 | 0 | 0 |
| ## 178 | 5  | 6  | 0 | 0 | 1 |
| ## 179 | 5  | 7  | 0 | 0 | 1 |
| ## 180 | 5  | 9  | 0 | 0 | 2 |
| ## 181 | 5  | 10 | 0 | 0 | 1 |
| ## 182 | 5  | 11 | 0 | 0 | 1 |
| ## 183 | 5  | 12 | 0 | 0 | 1 |
| ## 184 | 6  | 12 | 0 | 1 | 0 |
| ## 185 | 6  | 12 | 0 | 0 | 0 |
| ## 186 | 6  | 12 | 0 | 0 | 0 |
| ## 187 | 6  | 12 | 0 | 0 | 0 |
| ## 188 | 6  | 13 | 0 | 0 | 1 |
| ## 189 | 7  | 13 | 0 | 1 | 0 |
| ## 190 | 7  | 13 | 1 | 0 | 0 |
| ## 191 | 8  | 13 | 0 | 1 | 0 |
| ## 192 | 8  | 13 | 1 | 0 | 0 |
| ## 193 | 8  | 14 | 0 | 0 | 1 |
| ## 194 | 9  | 14 | 0 | 1 | 0 |
| ## 195 | 10 | 14 | 0 | 1 | 0 |

|        |              |              |              |              |            |
|--------|--------------|--------------|--------------|--------------|------------|
| ## 196 | 10           | 14           | 0            | 0            | 0          |
| ## 197 | 11           | 14           | 1            | 1            | 0          |
| ## 198 | 11           | 14           | 0            | 0            | 0          |
| ## 199 | 12           | 14           | 1            | 1            | 0          |
| ## 200 | 13           | 14           | 0            | 1            | 0          |
| ## 201 | 13           | 15           | 0            | 0            | 1          |
| ## 202 | 13           | 15           | 0            | 0            | 0          |
| ## 203 | 13           | 15           | 0            | 0            | 0          |
| ## 204 | 13           | 16           | 0            | 0            | 1          |
| ## 205 | 14           | 16           | 0            | 1            | 0          |
| ## 206 | 14           | 17           | 0            | 0            | 1          |
| ## 207 | 14           | 18           | 0            | 0            | 1          |
| ## 208 | 14           | 19           | 0            | 0            | 1          |
| ## 209 | 14           | 19           | 0            | 0            | 0          |
| ## 210 | 14           | 20           | 0            | 0            | 1          |
| ## 211 | 14           | 21           | 0            | 0            | 1          |
| ## 212 | 14           | 21           | 0            | 0            | 0          |
| ## 213 | 14           | 22           | 0            | 0            | 1          |
| ## 214 | 14           | 22           | 0            | 0            | 0          |
| ## 215 | 14           | 22           | 1            | 0            | 0          |
| ## 216 | 14           | 23           | 0            | 0            | 1          |
| ## 217 | 14           | 23           | 0            | 0            | 0          |
| ## 218 | 15           | 23           | 0            | 1            | 0          |
| ## 219 | 15           | 24           | 0            | 0            | 1          |
| ## 220 | 15           | 25           | 1            | 0            | 1          |
| ## 221 | 16           | 26           | 0            | 1            | 1          |
| ## 222 | 17           | 26           | 0            | 1            | 0          |
| ## 223 | 17           | 26           | 0            | 0            | 0          |
| ## 224 | 17           | 26           | 0            | 0            | 0          |
| ##     | cmTotHitsR.E | cmTotHitsL.E | cmTotHitsM.E | Hits.Recvd.E | Hits.Lnd.E |
| ## 1   | 0            | 0            | 1            | 0            | 0          |
| ## 2   | 0            | 0            | 2            | 0            | 0          |
| ## 3   | 0            | 0            | 3            | 0            | 0          |
| ## 4   | 0            | 1            | 3            | 0            | 1          |
| ## 5   | 0            | 1            | 4            | 0            | 0          |
| ## 6   | 0            | 2            | 4            | 0            | 1          |
| ## 7   | 0            | 2            | 4            | 0            | 0          |

|       |   |    |    |   |   |
|-------|---|----|----|---|---|
| ## 8  | 0 | 2  | 5  | 0 | 0 |
| ## 9  | 0 | 2  | 6  | 0 | 0 |
| ## 10 | 0 | 2  | 6  | 0 | 0 |
| ## 11 | 0 | 2  | 7  | 0 | 0 |
| ## 12 | 0 | 2  | 8  | 0 | 0 |
| ## 13 | 0 | 2  | 9  | 0 | 0 |
| ## 14 | 0 | 2  | 10 | 0 | 0 |
| ## 15 | 0 | 2  | 11 | 0 | 0 |
| ## 16 | 0 | 2  | 12 | 0 | 0 |
| ## 17 | 0 | 2  | 13 | 0 | 0 |
| ## 18 | 0 | 3  | 13 | 0 | 1 |
| ## 19 | 0 | 4  | 13 | 0 | 1 |
| ## 20 | 0 | 4  | 14 | 0 | 0 |
| ## 21 | 0 | 4  | 14 | 0 | 0 |
| ## 22 | 0 | 4  | 15 | 0 | 0 |
| ## 23 | 0 | 4  | 15 | 0 | 0 |
| ## 24 | 0 | 4  | 16 | 0 | 0 |
| ## 25 | 0 | 4  | 17 | 0 | 0 |
| ## 26 | 0 | 5  | 17 | 0 | 1 |
| ## 27 | 2 | 5  | 17 | 2 | 0 |
| ## 28 | 2 | 6  | 17 | 0 | 1 |
| ## 29 | 2 | 7  | 17 | 0 | 1 |
| ## 30 | 3 | 7  | 17 | 1 | 0 |
| ## 31 | 3 | 7  | 17 | 0 | 0 |
| ## 32 | 3 | 7  | 18 | 0 | 0 |
| ## 33 | 3 | 7  | 18 | 0 | 0 |
| ## 34 | 4 | 7  | 18 | 1 | 0 |
| ## 35 | 4 | 7  | 19 | 0 | 0 |
| ## 36 | 4 | 7  | 20 | 0 | 0 |
| ## 37 | 4 | 8  | 20 | 0 | 1 |
| ## 38 | 5 | 8  | 20 | 1 | 0 |
| ## 39 | 5 | 9  | 20 | 0 | 1 |
| ## 40 | 5 | 9  | 20 | 0 | 0 |
| ## 41 | 5 | 10 | 20 | 0 | 1 |
| ## 42 | 6 | 10 | 20 | 1 | 0 |
| ## 43 | 7 | 10 | 20 | 1 | 0 |
| ## 44 | 7 | 10 | 21 | 0 | 0 |

|       |    |    |    |   |   |
|-------|----|----|----|---|---|
| ## 45 | 8  | 10 | 21 | 1 | 0 |
| ## 46 | 8  | 10 | 22 | 0 | 0 |
| ## 47 | 8  | 10 | 22 | 0 | 0 |
| ## 48 | 8  | 10 | 23 | 0 | 0 |
| ## 49 | 9  | 10 | 23 | 1 | 0 |
| ## 50 | 9  | 11 | 23 | 0 | 1 |
| ## 51 | 9  | 11 | 25 | 0 | 0 |
| ## 52 | 9  | 12 | 25 | 0 | 1 |
| ## 53 | 9  | 12 | 26 | 0 | 0 |
| ## 54 | 9  | 12 | 27 | 0 | 0 |
| ## 55 | 10 | 12 | 27 | 1 | 0 |
| ## 56 | 10 | 12 | 28 | 0 | 0 |
| ## 57 | 10 | 12 | 28 | 0 | 0 |
| ## 58 | 11 | 12 | 29 | 1 | 0 |
| ## 59 | 11 | 12 | 29 | 0 | 0 |
| ## 60 | 11 | 12 | 30 | 0 | 0 |
| ## 61 | 11 | 12 | 31 | 0 | 0 |
| ## 62 | 11 | 12 | 32 | 0 | 0 |
| ## 63 | 11 | 12 | 33 | 0 | 0 |
| ## 64 | 11 | 12 | 33 | 0 | 0 |
| ## 65 | 11 | 13 | 33 | 0 | 1 |
| ## 66 | 11 | 13 | 34 | 0 | 0 |
| ## 67 | 11 | 14 | 34 | 0 | 1 |
| ## 68 | 11 | 14 | 34 | 0 | 0 |
| ## 69 | 0  | 0  | 0  | 0 | 0 |
| ## 70 | 0  | 0  | 1  | 0 | 0 |
| ## 71 | 1  | 0  | 1  | 1 | 0 |
| ## 72 | 1  | 0  | 2  | 0 | 0 |
| ## 73 | 2  | 0  | 2  | 1 | 0 |
| ## 74 | 2  | 1  | 2  | 0 | 1 |
| ## 75 | 2  | 2  | 2  | 0 | 1 |
| ## 76 | 2  | 2  | 3  | 0 | 0 |
| ## 77 | 2  | 2  | 3  | 0 | 0 |
| ## 78 | 2  | 2  | 3  | 0 | 0 |
| ## 79 | 2  | 2  | 3  | 0 | 0 |
| ## 80 | 3  | 2  | 4  | 1 | 0 |
| ## 81 | 3  | 2  | 5  | 0 | 0 |

|        |    |   |    |   |   |
|--------|----|---|----|---|---|
| ## 82  | 3  | 2 | 6  | 0 | 0 |
| ## 83  | 4  | 2 | 7  | 1 | 0 |
| ## 84  | 4  | 2 | 7  | 0 | 0 |
| ## 85  | 4  | 2 | 8  | 0 | 0 |
| ## 86  | 4  | 2 | 9  | 0 | 0 |
| ## 87  | 4  | 2 | 9  | 0 | 0 |
| ## 88  | 4  | 2 | 9  | 0 | 0 |
| ## 89  | 4  | 2 | 10 | 0 | 0 |
| ## 90  | 4  | 2 | 11 | 0 | 0 |
| ## 91  | 4  | 2 | 11 | 0 | 0 |
| ## 92  | 4  | 2 | 11 | 0 | 0 |
| ## 93  | 4  | 2 | 12 | 0 | 0 |
| ## 94  | 4  | 2 | 13 | 0 | 0 |
| ## 95  | 4  | 2 | 14 | 0 | 0 |
| ## 96  | 4  | 2 | 15 | 0 | 0 |
| ## 97  | 5  | 2 | 15 | 1 | 0 |
| ## 98  | 6  | 2 | 15 | 1 | 0 |
| ## 99  | 6  | 2 | 16 | 0 | 0 |
| ## 100 | 6  | 2 | 17 | 0 | 0 |
| ## 101 | 6  | 2 | 18 | 0 | 0 |
| ## 102 | 6  | 3 | 18 | 0 | 1 |
| ## 103 | 6  | 3 | 19 | 0 | 0 |
| ## 104 | 6  | 3 | 20 | 0 | 0 |
| ## 105 | 7  | 3 | 20 | 1 | 0 |
| ## 106 | 7  | 3 | 20 | 0 | 0 |
| ## 107 | 7  | 3 | 21 | 0 | 0 |
| ## 108 | 7  | 4 | 21 | 0 | 1 |
| ## 109 | 7  | 4 | 21 | 0 | 0 |
| ## 110 | 7  | 4 | 22 | 0 | 0 |
| ## 111 | 8  | 4 | 22 | 1 | 0 |
| ## 112 | 9  | 4 | 22 | 1 | 0 |
| ## 113 | 9  | 4 | 23 | 0 | 0 |
| ## 114 | 9  | 4 | 24 | 0 | 0 |
| ## 115 | 9  | 4 | 25 | 0 | 0 |
| ## 116 | 9  | 4 | 26 | 0 | 0 |
| ## 117 | 10 | 4 | 26 | 1 | 0 |
| ## 118 | 11 | 4 | 26 | 1 | 0 |



|        |    |   |    |   |   |
|--------|----|---|----|---|---|
| ## 119 | 11 | 4 | 27 | 0 | 0 |
| ## 120 | 11 | 4 | 28 | 0 | 0 |
| ## 121 | 11 | 4 | 28 | 0 | 0 |
| ## 122 | 11 | 4 | 29 | 0 | 0 |
| ## 123 | 11 | 4 | 30 | 0 | 0 |
| ## 124 | 11 | 5 | 30 | 0 | 1 |
| ## 125 | 11 | 5 | 31 | 0 | 0 |
| ## 126 | 11 | 5 | 32 | 0 | 0 |
| ## 127 | 12 | 5 | 32 | 1 | 0 |
| ## 128 | 12 | 5 | 32 | 0 | 0 |
| ## 129 | 12 | 5 | 33 | 0 | 0 |
| ## 130 | 12 | 5 | 33 | 0 | 0 |
| ## 131 | 12 | 5 | 34 | 0 | 0 |
| ## 132 | 12 | 5 | 36 | 0 | 0 |
| ## 133 | 12 | 5 | 36 | 0 | 0 |
| ## 134 | 12 | 5 | 36 | 0 | 0 |
| ## 135 | 12 | 5 | 37 | 0 | 0 |
| ## 136 | 12 | 5 | 37 | 0 | 0 |
| ## 137 | 12 | 5 | 37 | 0 | 0 |
| ## 138 | 12 | 5 | 37 | 0 | 0 |
| ## 139 | 12 | 5 | 38 | 0 | 0 |
| ## 140 | 12 | 5 | 39 | 0 | 0 |
| ## 141 | 12 | 5 | 40 | 0 | 0 |
| ## 142 | 12 | 5 | 41 | 0 | 0 |
| ## 143 | 12 | 5 | 42 | 0 | 0 |
| ## 144 | 13 | 5 | 43 | 1 | 0 |
| ## 145 | 13 | 5 | 44 | 0 | 0 |
| ## 146 | 13 | 5 | 44 | 0 | 0 |
| ## 147 | 13 | 5 | 44 | 0 | 0 |
| ## 148 | 14 | 5 | 44 | 1 | 0 |
| ## 149 | 15 | 5 | 45 | 1 | 0 |
| ## 150 | 15 | 5 | 46 | 0 | 0 |
| ## 151 | 16 | 5 | 46 | 1 | 0 |
| ## 152 | 16 | 5 | 46 | 0 | 0 |
| ## 153 | 16 | 5 | 47 | 0 | 0 |
| ## 154 | 16 | 5 | 48 | 0 | 0 |
| ## 155 | 16 | 5 | 49 | 0 | 0 |

|        |    |   |    |   |   |
|--------|----|---|----|---|---|
| ## 156 | 16 | 5 | 50 | 0 | 0 |
| ## 157 | 16 | 5 | 50 | 0 | 0 |
| ## 158 | 16 | 6 | 50 | 0 | 1 |
| ## 159 | 16 | 6 | 51 | 0 | 0 |
| ## 160 | 16 | 7 | 51 | 0 | 1 |
| ## 161 | 16 | 7 | 52 | 0 | 0 |
| ## 162 | 16 | 7 | 53 | 0 | 0 |
| ## 163 | 16 | 7 | 54 | 0 | 0 |
| ## 164 | 16 | 7 | 54 | 0 | 0 |
| ## 165 | 0  | 0 | 0  | 0 | 0 |
| ## 166 | 0  | 0 | 1  | 0 | 0 |
| ## 167 | 0  | 0 | 2  | 0 | 0 |
| ## 168 | 0  | 0 | 2  | 0 | 0 |
| ## 169 | 0  | 0 | 2  | 0 | 0 |
| ## 170 | 1  | 0 | 4  | 1 | 0 |
| ## 171 | 1  | 0 | 5  | 0 | 0 |
| ## 172 | 2  | 0 | 5  | 1 | 0 |
| ## 173 | 2  | 0 | 6  | 0 | 0 |
| ## 174 | 2  | 0 | 7  | 0 | 0 |
| ## 175 | 3  | 0 | 9  | 1 | 0 |
| ## 176 | 4  | 0 | 9  | 1 | 0 |
| ## 177 | 4  | 0 | 10 | 0 | 0 |
| ## 178 | 4  | 0 | 10 | 0 | 0 |
| ## 179 | 4  | 0 | 10 | 0 | 0 |
| ## 180 | 4  | 0 | 11 | 0 | 0 |
| ## 181 | 4  | 0 | 11 | 0 | 0 |
| ## 182 | 4  | 0 | 11 | 0 | 0 |
| ## 183 | 4  | 0 | 11 | 0 | 0 |
| ## 184 | 5  | 0 | 12 | 1 | 0 |
| ## 185 | 5  | 0 | 12 | 0 | 0 |
| ## 186 | 5  | 0 | 13 | 0 | 0 |
| ## 187 | 5  | 0 | 14 | 0 | 0 |
| ## 188 | 5  | 0 | 14 | 0 | 0 |
| ## 189 | 6  | 0 | 14 | 1 | 0 |
| ## 190 | 6  | 1 | 14 | 0 | 1 |
| ## 191 | 7  | 1 | 15 | 1 | 0 |
| ## 192 | 7  | 2 | 15 | 0 | 1 |

|        |             |      |    |   |   |
|--------|-------------|------|----|---|---|
| ## 193 | 7           | 2    | 17 | 0 | 0 |
| ## 194 | 8           | 2    | 17 | 1 | 0 |
| ## 195 | 9           | 2    | 17 | 1 | 0 |
| ## 196 | 9           | 2    | 18 | 0 | 0 |
| ## 197 | 10          | 4    | 18 | 1 | 2 |
| ## 198 | 10          | 4    | 19 | 0 | 0 |
| ## 199 | 11          | 5    | 19 | 1 | 1 |
| ## 200 | 12          | 5    | 20 | 1 | 0 |
| ## 201 | 12          | 5    | 20 | 0 | 0 |
| ## 202 | 12          | 5    | 21 | 0 | 0 |
| ## 203 | 12          | 5    | 22 | 0 | 0 |
| ## 204 | 12          | 5    | 23 | 0 | 0 |
| ## 205 | 13          | 5    | 23 | 1 | 0 |
| ## 206 | 13          | 5    | 24 | 0 | 0 |
| ## 207 | 13          | 5    | 25 | 0 | 0 |
| ## 208 | 13          | 5    | 25 | 0 | 0 |
| ## 209 | 13          | 5    | 26 | 0 | 0 |
| ## 210 | 13          | 5    | 27 | 0 | 0 |
| ## 211 | 13          | 5    | 27 | 0 | 0 |
| ## 212 | 13          | 5    | 28 | 0 | 0 |
| ## 213 | 13          | 5    | 28 | 0 | 0 |
| ## 214 | 13          | 6    | 29 | 0 | 1 |
| ## 215 | 13          | 7    | 29 | 0 | 1 |
| ## 216 | 13          | 7    | 30 | 0 | 0 |
| ## 217 | 13          | 7    | 31 | 0 | 0 |
| ## 218 | 14          | 7    | 31 | 1 | 0 |
| ## 219 | 14          | 7    | 32 | 0 | 0 |
| ## 220 | 14          | 8    | 32 | 0 | 1 |
| ## 221 | 15          | 8    | 32 | 1 | 0 |
| ## 222 | 16          | 8    | 32 | 1 | 0 |
| ## 223 | 16          | 8    | 32 | 0 | 0 |
| ## 224 | 16          | 8    | 32 | 0 | 0 |
| ##     | Hits.Mssd.E | Time |    |   |   |
| ## 1   | 1           | 9:41 |    |   |   |
| ## 2   | 1           | 9:54 |    |   |   |
| ## 3   | 1           | 9:56 |    |   |   |
| ## 4   | 0           | 9:59 |    |   |   |

|       |         |
|-------|---------|
| ## 5  | 1 10:11 |
| ## 6  | 0 10:14 |
| ## 7  | 0 10:21 |
| ## 8  | 1 10:24 |
| ## 9  | 1 10:26 |
| ## 10 | 0 10:32 |
| ## 11 | 1 10:36 |
| ## 12 | 1 10:51 |
| ## 13 | 1 10:55 |
| ## 14 | 1 11:03 |
| ## 15 | 1 11:04 |
| ## 16 | 1 11:18 |
| ## 17 | 1 11:19 |
| ## 18 | 0 11:21 |
| ## 19 | 0 11:22 |
| ## 20 | 1 11:36 |
| ## 21 | 0 11:42 |
| ## 22 | 1 11:47 |
| ## 23 | 0 12:00 |
| ## 24 | 1 12:07 |
| ## 25 | 1 12:08 |
| ## 26 | 0 12:16 |
| ## 27 | 0 12:32 |
| ## 28 | 0 12:34 |
| ## 29 | 0 12:36 |
| ## 30 | 0 12:39 |
| ## 31 | 0 12:40 |
| ## 32 | 1 12:44 |
| ## 33 | 0 12:45 |
| ## 34 | 0 12:50 |
| ## 35 | 1 13:00 |
| ## 36 | 1 13:01 |
| ## 37 | 0 13:07 |
| ## 38 | 0 13:09 |
| ## 39 | 0 13:13 |
| ## 40 | 0 13:21 |
| ## 41 | 0 13:22 |

|       |         |
|-------|---------|
| ## 42 | 0 13:29 |
| ## 43 | 0 13:34 |
| ## 44 | 1 13:36 |
| ## 45 | 0 13:37 |
| ## 46 | 1 13:38 |
| ## 47 | 0 13:39 |
| ## 48 | 1 13:49 |
| ## 49 | 0 13:50 |
| ## 50 | 0 13:51 |
| ## 51 | 2 13:54 |
| ## 52 | 0 13:57 |
| ## 53 | 1 13:58 |
| ## 54 | 1 13:59 |
| ## 55 | 0 14:00 |
| ## 56 | 1 14:01 |
| ## 57 | 0 14:02 |
| ## 58 | 1 14:08 |
| ## 59 | 0 14:09 |
| ## 60 | 1 14:10 |
| ## 61 | 1 14:11 |
| ## 62 | 1 14:19 |
| ## 63 | 1 14:22 |
| ## 64 | 0 14:23 |
| ## 65 | 0 14:29 |
| ## 66 | 1 14:30 |
| ## 67 | 0 14:32 |
| ## 68 | 0 14:37 |
| ## 69 | 0 15:49 |
| ## 70 | 1 15:50 |
| ## 71 | 0 15:51 |
| ## 72 | 1 15:52 |
| ## 73 | 0 15:54 |
| ## 74 | 0 15:56 |
| ## 75 | 0 15:57 |
| ## 76 | 1 16:04 |
| ## 77 | 0 16:06 |
| ## 78 | 0 16:11 |

|        |         |
|--------|---------|
| ## 79  | 0 16:12 |
| ## 80  | 1 16:13 |
| ## 81  | 1 16:31 |
| ## 82  | 1 16:35 |
| ## 83  | 1 16:37 |
| ## 84  | 0 16:40 |
| ## 85  | 1 16:54 |
| ## 86  | 1 16:55 |
| ## 87  | 0 16:56 |
| ## 88  | 0 17:01 |
| ## 89  | 1 17:02 |
| ## 90  | 1 17:03 |
| ## 91  | 0 17:04 |
| ## 92  | 0 17:24 |
| ## 93  | 1 17:30 |
| ## 94  | 1 17:31 |
| ## 95  | 1 17:33 |
| ## 96  | 1 17:34 |
| ## 97  | 0 17:36 |
| ## 98  | 0 17:43 |
| ## 99  | 1 17:47 |
| ## 100 | 1 17:49 |
| ## 101 | 1 17:55 |
| ## 102 | 0 17:57 |
| ## 103 | 1 17:59 |
| ## 104 | 1 18:00 |
| ## 105 | 0 18:01 |
| ## 106 | 0 18:03 |
| ## 107 | 1 18:06 |
| ## 108 | 0 18:07 |
| ## 109 | 0 18:08 |
| ## 110 | 1 18:16 |
| ## 111 | 0 18:18 |
| ## 112 | 0 18:21 |
| ## 113 | 1 18:23 |
| ## 114 | 1 18:34 |
| ## 115 | 1 18:35 |

|        |         |
|--------|---------|
| ## 116 | 1 18:37 |
| ## 117 | 0 18:38 |
| ## 118 | 0 18:39 |
| ## 119 | 1 18:41 |
| ## 120 | 1 18:42 |
| ## 121 | 0 18:43 |
| ## 122 | 1 18:46 |
| ## 123 | 1 18:47 |
| ## 124 | 0 18:54 |
| ## 125 | 1 18:55 |
| ## 126 | 1 18:57 |
| ## 127 | 0 18:58 |
| ## 128 | 0 19:05 |
| ## 129 | 1 19:08 |
| ## 130 | 0 19:10 |
| ## 131 | 1 19:15 |
| ## 132 | 2 19:19 |
| ## 133 | 0 19:21 |
| ## 134 | 0 19:22 |
| ## 135 | 1 19:27 |
| ## 136 | 0 19:29 |
| ## 137 | 0 19:31 |
| ## 138 | 0 19:32 |
| ## 139 | 1 19:33 |
| ## 140 | 1 19:35 |
| ## 141 | 1 19:37 |
| ## 142 | 1 19:39 |
| ## 143 | 1 19:40 |
| ## 144 | 1 19:41 |
| ## 145 | 1 19:43 |
| ## 146 | 0 19:44 |
| ## 147 | 0 19:47 |
| ## 148 | 0 19:49 |
| ## 149 | 1 19:53 |
| ## 150 | 1 19:55 |
| ## 151 | 0 20:03 |
| ## 152 | 0 20:05 |

|        |         |
|--------|---------|
| ## 153 | 1 20:06 |
| ## 154 | 1 20:07 |
| ## 155 | 1 20:08 |
| ## 156 | 1 20:12 |
| ## 157 | 0 20:15 |
| ## 158 | 0 20:20 |
| ## 159 | 1 20:23 |
| ## 160 | 0 20:24 |
| ## 161 | 1 20:25 |
| ## 162 | 1 20:28 |
| ## 163 | 1 20:45 |
| ## 164 | 0 20:50 |
| ## 165 | 0 22:04 |
| ## 166 | 1 22:05 |
| ## 167 | 1 22:06 |
| ## 168 | 0 22:08 |
| ## 169 | 0 22:09 |
| ## 170 | 2 22:10 |
| ## 171 | 1 22:13 |
| ## 172 | 0 22:14 |
| ## 173 | 1 22:16 |
| ## 174 | 1 22:17 |
| ## 175 | 2 22:18 |
| ## 176 | 0 22:19 |
| ## 177 | 1 22:20 |
| ## 178 | 0 22:22 |
| ## 179 | 0 22:24 |
| ## 180 | 1 22:27 |
| ## 181 | 0 22:30 |
| ## 182 | 0 22:32 |
| ## 183 | 0 22:35 |
| ## 184 | 1 22:38 |
| ## 185 | 0 22:39 |
| ## 186 | 1 22:41 |
| ## 187 | 1 22:44 |
| ## 188 | 0 22:46 |
| ## 189 | 0 22:53 |



## 190 0 22:54  
## 191 1 22:55  
## 192 0 22:59  
## 193 2 23:00  
## 194 0 23:01  
## 195 0 23:02  
## 196 1 23:03  
## 197 0 23:08  
## 198 1 23:09  
## 199 0 23:10  
## 200 1 23:11  
## 201 0 23:12  
## 202 1 23:14  
## 203 1 23:16  
## 204 1 23:17  
## 205 0 23:19  
## 206 1 23:20  
## 207 1 23:21  
## 208 0 23:22  
## 209 1 23:24  
## 210 1 23:25  
## 211 0 23:26  
## 212 1 23:30  
## 213 0 23:31  
## 214 1 23:32  
## 215 0 23:33  
## 216 1 23:34  
## 217 1 23:36  
## 218 0 23:37  
## 219 1 23:46  
## 220 0 23:47  
## 221 0 23:48  
## 222 0 23:49  
## 223 0 23:50  
## 224 0 23:54

##

ArseFighterActionReactions

## 1

0

|       |   |
|-------|---|
| ## 2  | 0   |
| ## 3  | 0   |
| ## 4  | 0   |
| ## 5  | misses R jab                                    |
| ## 6  | 0   |
| ## 7  | misses R jab                                    |
| ## 8  | 0   |
| ## 9  | 0   |
| ## 10 | misses standing head kick                       |
| ## 11 | 0   |
| ## 12 | 0   |
| ## 13 | 0   |
| ## 14 | 0   |
| ## 15 | blocks head strike-power shot                   |
| ## 16 | 0   |
| ## 17 | ducks other fighter                             |
| ## 18 | misses L power shot                             |
| ## 19 | 0   |
| ## 20 | grabs R hand the R leg low shot                 |
| ## 21 | misses R jab                                    |
| ## 22 | misses R jab                                    |
| ## 23 | misses R jab, misses L head power shot          |
| ## 24 | misses L head power shot                        |
| ## 25 | misses R hook to head                           |
| ## 26 | 0   |
| ## 27 | lands R jab to head, lands L power shot to head |
| ## 28 | 0   |
| ## 29 | 0   |
| ## 30 | lands R jab to head                             |
| ## 31 | misses L power shot to chin                     |
| ## 32 | 0   |
| ## 33 | misses R hook to head, lands L cross            |
| ## 34 | lands L power shot to body                      |
| ## 35 | 0   |
| ## 36 | misses R jab, misses L power shot to chin       |
| ## 37 | 0   |
| ## 38 | lands clinche R arm of opponent and body        |

|       |  |   |
|-------|--|---|
| ## 39 |  | 0 |
| ## 40 | misses clinch                              |   |
| ## 41 |  | 0 |
| ## 42 | lands R front kick to body                 |   |
| ## 43 | lands R jab to head                        |   |
| ## 44 | ducks other fighter                        |   |
| ## 45 | lands R jab to head                        |   |
| ## 46 |  | 0 |
| ## 47 | misses R jab to head                       |   |
| ## 48 | misses R jab to head                       |   |
| ## 49 | lands L power shot to head                 |   |
| ## 50 |  | 0 |
| ## 51 |  | 0 |
| ## 52 |  | 0 |
| ## 53 | blocks head strike-R muay thai kick        |   |
| ## 54 |  | 0 |
| ## 55 | lands R jab to chin                        |   |
| ## 56 | misses L hook to head, lands R jab to head |   |
| ## 57 | misses L hook to head                      |   |
| ## 58 | lands R jab to head                        |   |
| ## 59 | misses R jab                               |   |
| ## 60 | misses L front kick                        |   |
| ## 61 |  | 0 |
| ## 62 |  | 0 |
| ## 63 | blocks L front kick body shot              |   |
| ## 64 | delivers take down                         |   |
| ## 65 |  | 0 |
| ## 66 |  | 0 |
| ## 67 |  | 0 |
| ## 68 | tap gloves round ends                      |   |
| ## 69 | tap gloves round begins                    |   |
| ## 70 | misses R jab                               |   |
| ## 71 | lands L power shot                         |   |
| ## 72 | ducks other fighter                        |   |
| ## 73 | lands body shot R jab                      |   |
| ## 74 |  | 0 |
| ## 75 | misses R hook to head                      |   |

|        |  |   |
|--------|--|---|
| ## 76  |  | 0 |
| ## 77  | misses low muay thai kick L leg            |   |
| ## 78  | misses R jab to head                       |   |
| ## 79  | misses R hook to head                      |   |
| ## 80  | lands R upper cut to head                  |   |
| ## 81  | blocks L body shot muay thai kick          |   |
| ## 82  |  | 0 |
| ## 83  | lands R jab to body, ducks other fighter   |   |
| ## 84  | misses L kick to head                      |   |
| ## 85  | ducks other fighter                        |   |
| ## 86  | ducks other fighter                        |   |
| ## 87  | misses clinch                              |   |
| ## 88  | misses R jab to head                       |   |
| ## 89  | blocks body shot front kick                |   |
| ## 90  | ducks other fighter                        |   |
| ## 91  | misses body clinch                         |   |
| ## 92  | misses R hook to head                      |   |
| ## 93  | blocks R jab to head                       |   |
| ## 94  | ducks other fighter                        |   |
| ## 95  | misses R hook to head                      |   |
| ## 96  | blocks L hook to head                      |   |
| ## 97  | lands low front L kick                     |   |
| ## 98  | lands low left front kick                  |   |
| ## 99  | blocks R hook to head                      |   |
| ## 100 |  | 0 |
| ## 101 | ducks other fighter                        |   |
| ## 102 |  | 0 |
| ## 103 | ducks other fighter                        |   |
| ## 104 | ducks other fighter                        |   |
| ## 105 | lands R jab to head                        |   |
| ## 106 | misses R jab to head                       |   |
| ## 107 | ducks other fighter                        |   |
| ## 108 |  | 0 |
| ## 109 | clinch attempted take down                 |   |
| ## 110 | misses R jab to head, misses R jab to head |   |
| ## 111 | lands L power shot to chin                 |   |
| ## 112 | lands L body shot front kick               |   |

|        |   |   |
|--------|---|---|
| ## 113 |   | 0 |
| ## 114 |   | 0 |
| ## 115 |   | 0 |
| ## 116 | misses R jab to head                              |   |
| ## 117 | lands L power shot to head                        |   |
| ## 118 | lands R front kick to body                        |   |
| ## 119 | ducks other fighter                               |   |
| ## 120 | ducks other fighter                               |   |
| ## 121 | misses R jab to head, misses L cross to head      |   |
| ## 122 | blocks head shot R muay thai kick                 |   |
| ## 123 | misses R jab to head                              |   |
| ## 124 | misses R jab to head                              |   |
| ## 125 | blocks body shot R muay thai kick                 |   |
| ## 126 | ducks other fighter                               |   |
| ## 127 | lands body shot L power shot                      |   |
| ## 128 | misses low R front kick                           |   |
| ## 129 | blocks L head shot muay thai kick                 |   |
| ## 130 | misses low L inner leg kick with L muay thai kick |   |
| ## 131 |   | 0 |
| ## 132 | ducks other fighter                               |   |
| ## 133 | misses R jab to head                              |   |
| ## 134 | misses L power shot to chin                       |   |
| ## 135 | misses L body shot front kick with L kick         |   |
| ## 136 | misses R jab to head                              |   |
| ## 137 | misses R jab to head                              |   |
| ## 138 | misses L power shot to chin                       |   |
| ## 139 |   | 0 |
| ## 140 |   | 0 |
| ## 141 | ducks other fighter, misses R cross to head       |   |
| ## 142 | blocks attempted take down                        |   |
| ## 143 |   | 0 |
| ## 144 | lands R jab, ducks other fighter                  |   |
| ## 145 | ducks other fighter                               |   |
| ## 146 | misses R jab to head                              |   |
| ## 147 | misses R jab to head                              |   |
| ## 148 | lands R jab to head                               |   |
| ## 149 | lands R body shot front kick                      |   |

|        |   |   |
|--------|---|---|
| ## 150 | ducks other fighter, misses R jab to head                 |   |
| ## 151 | lands R body shot front kick                              |   |
| ## 152 | misses R jab  |   |
| ## 153 | ducks other fighter                                       |   |
| ## 154 | ducks other fighter, misses R jab                         |   |
| ## 155 | blocks clinch knee body shot                              |   |
| ## 156 |   | 0 |
| ## 157 | misses body clinch  |   |
| ## 158 |   | 0 |
| ## 159 | misses R jab to head                                      |   |
| ## 160 | misses R jab to chin                                      |   |
| ## 161 | ducks other fighter                                       |   |
| ## 162 | clinch avoids body shot knee                              |   |
| ## 163 | ducks other fighter, gets out of clinch                   |   |
| ## 164 | tap gloves end of round                                   |   |
| ## 165 | tap glove beginning of round                              |   |
| ## 166 | misses R jab, lands L power shot to head                  |   |
| ## 167 |   | 0 |
| ## 168 | misses R jab to head                                      |   |
| ## 169 | misses R jab to head                                      |   |
| ## 170 | lands R jab to body, ducks other fighter                  |   |
| ## 171 | misses head shot L muay thai kick, ducks other fighter    |   |
| ## 172 | lands R jab to head                                       |   |
| ## 173 | blocks L head shot muay thai kick, misses L cross to head |   |
| ## 174 | ducks other fighter                                       |   |
| ## 175 | lands L jab, ducks other fighter                          |   |
| ## 176 | lands L hook to body                                      |   |
| ## 177 | blocks clinch   |   |
| ## 178 | misses R jab to head                                      |   |
| ## 179 | misses R jab to head                                      |   |
| ## 180 | misses R jab to head, misses body shot L front kick       |   |
| ## 181 | misses L power shot to head                               |   |
| ## 182 | misses R jab to head                                      |   |
| ## 183 | misses R front kick to body                               |   |
| ## 184 | lands L muay thai kick to body                            |   |
| ## 185 |   | 0 |
| ## 186 |   | 0 |

## 187 ducks other fighter  
## 188 misses R jab to head  
## 189 lands L power shot to chin  
## 190 0  
## 191 lands body shot L power shot, ducks other fighter  
## 192 0  
## 193 ducks other fighter, misses R jab to head  
## 194 lands R jab to head  
## 195 lands R jab to head  
## 196 0  
## 197 lands L cross to head, ducks other fighter, misses R jab to head  
## 198 ducks other fighter  
## 199 lands R hook to head  
## 200 ducks other fighter, lands L hook to body  
## 201 misses L cross to head  
## 202 blocks L cross to head  
## 203 0  
## 204 misses R jab to head  
## 205 lands low L front kick to L leg  
## 206 misses R jab to head  
## 207 misses R jab to head  
## 208 misses L power shot to head  
## 209 blocks body shot front kick  
## 210 misses R jab  
## 211 misses R front kick to body  
## 212 0  
## 213 misses R jab to head  
## 214 0  
## 215 0  
## 216 misses L cross to head  
## 217 ducks other fighter  
## 218 lands R jab to head  
## 219 misses R jab to head, blocks L head shot muay thai kick  
## 220 misses R jab to head  
## 221 misses L cross to head, lands head strike- L muay thai kick  
## 222 lands head shot L hammer strike to face  
## 223 referee stoppage

```
## 224                                walks briskly around ring
##                                ErosaFightersActionsReactions
## 1                                misses standing head strike front kick
## 2                                misses standing head strike front kick
## 3                                misses standing head strike R muay thai kick
## 4                                lands low leg muay thai kick
## 5                                misses L jab
## 6                                lands standing L Body shot muay thai kick R leg
## 7                                0
## 8                                misses L jab
## 9                                misses low muay thai kick R leg
## 10                               0
## 11                               misses front head kick
## 12                               misses L jab
## 13                               misses L hook to head
## 14                               misses front head kick
## 15                               misses standing R power shot to head
## 16                               misses front R head kick
## 17                               misses L hook to head
## 18                               clinches neck
## 19                               lands L knee to body shot
## 20                               misses R low body front kick
## 21                               ducks other fighter
## 22                               misses L power shot
## 23                               0
## 24                               misses R head jab
## 25                               misses L jab
## 26                               lands front kick body shot
## 27                               0
## 28                               lands body shot R cross
## 29                               lands R power shot, misses L hook to head
## 30                               0
## 31                               0
## 32                               misses R jab to head
## 33                               ducks other fighter, lands L power shot to head
## 34                               0
## 35                               misses L power shot
```



|       |   |
|-------|---|
| ## 36 | misses L hook to head                       |
| ## 37 | lands body shot R muay thai kick            |
| ## 38 | R arm clinched                              |
| ## 39 | lands L hammer strike to R thigh in clinch  |
| ## 40 | 0   |
| ## 41 | lands L power shot to head                  |
| ## 42 | 0   |
| ## 43 | 0   |
| ## 44 | misses L hook to head                       |
| ## 45 | 0   |
| ## 46 | misses R cross to head                      |
| ## 47 | ducks other fighter                         |
| ## 48 | misses L front kick                         |
| ## 49 | 0   |
| ## 50 | clinches neck, lands R upper cut            |
| ## 51 | misses R jab to head, misses L hook to head |
| ## 52 | lands L body hook                           |
| ## 53 | misses L head shot R muay thai kick         |
| ## 54 | misses R cross to head                      |
| ## 55 | 0   |
| ## 56 | misses R hook to head                       |
| ## 57 | 0   |
| ## 58 | misses L jab                                |
| ## 59 | 0   |
| ## 60 | misses R jab to head                        |
| ## 61 | misses L power shot, misses R jab to head   |
| ## 62 | misses R muay thai head kick                |
| ## 63 | misses L front kick body shot               |
| ## 64 | 0   |
| ## 65 | lands low front kick from the ground        |
| ## 66 | misses high front kick from the ground      |
| ## 67 | lands L hook to head standing               |
| ## 68 | tap gloves round ends                       |
| ## 69 | tap gloves round begins                     |
| ## 70 | misses L jab                                |
| ## 71 | 0   |
| ## 72 | misses R hook to head                       |

|        |   |   |
|--------|---|---|
| ## 73  |   | 0 |
| ## 74  | lands body shot R muay thai kick              |   |
| ## 75  | lands R jab head shot, ducks other fighter    |   |
| ## 76  | misses low muay thai kick R leg               |   |
| ## 77  |   | 0 |
| ## 78  |   | 0 |
| ## 79  | ducks other fighter                           |   |
| ## 80  | misses R jab to head                          |   |
| ## 81  | misses body shot R muay thai kick             |   |
| ## 82  | misses R hook to body                         |   |
| ## 83  | misses L hook to head                         |   |
| ## 84  | blocks R head kick                            |   |
| ## 85  | misses R jab to head                          |   |
| ## 86  | misses L cross to head                        |   |
| ## 87  |   | 0 |
| ## 88  |   | 0 |
| ## 89  | misses body shot front kick                   |   |
| ## 90  | misses L hook to head                         |   |
| ## 91  | blocks body clinch                            |   |
| ## 92  |   | 0 |
| ## 93  | misses R jab to head                          |   |
| ## 94  | misses R hook to head                         |   |
| ## 95  | misses R hook to head                         |   |
| ## 96  | misses L hook to head, blocks L punch to head |   |
| ## 97  |   | 0 |
| ## 98  |   | 0 |
| ## 99  | misses R hook to head                         |   |
| ## 100 | misses R front kick to body                   |   |
| ## 101 | misses R cross to head                        |   |
| ## 102 | lands R low kick                              |   |
| ## 103 | misses L jab to head                          |   |
| ## 104 | misses R cross to head                        |   |
| ## 105 |   | 0 |
| ## 106 | ducks other fighter                           |   |
| ## 107 | misses R cross to head                        |   |
| ## 108 | lands L knee to body clinch                   |   |
| ## 109 | blocks clinch takedown                        |   |

|        |   |   |
|--------|---|---|
| ## 110 | misses L jab to head, lands R jab head shot         |   |
| ## 111 |   | 0 |
| ## 112 |   | 0 |
| ## 113 | misses R front kick to body                         |   |
| ## 114 | misses R upper cut to head                          |   |
| ## 115 | misses L cross to head                              |   |
| ## 116 | misses L cross to head                              |   |
| ## 117 |   | 0 |
| ## 118 |   | 0 |
| ## 119 | misses R jab to head                                |   |
| ## 120 | misses L jab  |   |
| ## 121 | ducks other fighter, ducks other fighter            |   |
| ## 122 | misses R muay thai head kick                        |   |
| ## 123 | misses L jab to head                                |   |
| ## 124 | lands R cross to head                               |   |
| ## 125 | misses R body shot muay thai kick                   |   |
| ## 126 | misses body shot L front kick                       |   |
| ## 127 |   | 0 |
| ## 128 |   | 0 |
| ## 129 | misses R muay thai head kick                        |   |
| ## 130 |   | 0 |
| ## 131 | misses R muay thai low leg shot                     |   |
| ## 132 | misses R cross to head, misses left jab             |   |
| ## 133 | ducks other fighter                                 |   |
| ## 134 |   | 0 |
| ## 135 | blocks body shot front kick, misses L cross to head |   |
| ## 136 |   | 0 |
| ## 137 |   | 0 |
| ## 138 | ducks other fighter                                 |   |
| ## 139 | misses R upper cut to head                          |   |
| ## 140 | misses L front kick body shot                       |   |
| ## 141 | misses R cross to head, ducks other fighter         |   |
| ## 142 | misses attempted take down at R knee                |   |
| ## 143 | misses L hook to head                               |   |
| ## 144 | misses R hook to head                               |   |
| ## 145 | misses R super man punch to head                    |   |
| ## 146 |   | 0 |

|        |   |   |
|--------|---|---|
| ## 147 | ducks other fighter                                       |   |
| ## 148 |   | 0 |
| ## 149 | misses L cross to head                                    |   |
| ## 150 | misses R cross to head, ducks other fighter               |   |
| ## 151 |   | 0 |
| ## 152 | ducks other fighter                                       |   |
| ## 153 | misses R cross to head                                    |   |
| ## 154 | misses L hook to head, blocks R jab to head               |   |
| ## 155 | misses knee body shot clinch                              |   |
| ## 156 | misses flying knee body shot                              |   |
| ## 157 |   | 0 |
| ## 158 | lands L front kick body shot                              |   |
| ## 159 | misses L jab to head                                      |   |
| ## 160 | lands R cross to chin                                     |   |
| ## 161 | misses L hook to head                                     |   |
| ## 162 | misses body shot knee                                     |   |
| ## 163 | misses L hook to head                                     |   |
| ## 164 | tap gloves end of round                                   |   |
| ## 165 | tap gloves beginning of round                             |   |
| ## 166 | misses Left power shot to head, ducks other fighter       |   |
| ## 167 | misses R upper cut to head, misses L cross to head        |   |
| ## 168 | ducks other fighter                                       |   |
| ## 169 | ducks other fighter                                       |   |
| ## 170 | misses R cross to head, misses L hook to head             |   |
| ## 171 | blocks R head shot muay thai kick, misses R cross to head |   |
| ## 172 |   | 0 |
| ## 173 | misses R muay thai kick to head                           |   |
| ## 174 | misses R cross to head                                    |   |
| ## 175 | misses R cross to head, misses L hook to head             |   |
| ## 176 |   | 0 |
| ## 177 | misses clinch   |   |
| ## 178 |   | 0 |
| ## 179 | blocks R jab to head                                      |   |
| ## 180 | misses L jab to head, blocks body shot front kick         |   |
| ## 181 | ducks other fighter                                       |   |
| ## 182 |   | 0 |
| ## 183 | blocks body shot front kick                               |   |

|        |  |
|--------|--|
| ## 184 | misses R cross to head                                   |
| ## 185 | attempts clinch  |
| ## 186 | misses clinch  |
| ## 187 | misses R jab to head                                     |
| ## 188 | blocks R jab to head                                     |
| ## 189 | 0  |
| ## 190 | lands L jab to head                                      |
| ## 191 | misses L hook to head                                    |
| ## 192 | lands head shot R cross                                  |
| ## 193 | misses R jab to head, misses L jab to head               |
| ## 194 | 0  |
| ## 195 | 0  |
| ## 196 | misses R hook to head                                    |
| ## 197 | lands R upper cut to head, lands R cross to head         |
| ## 198 | misses L hook to head                                    |
| ## 199 | lands R cross to head                                    |
| ## 200 | misses L hook to head                                    |
| ## 201 | 0  |
| ## 202 | misses L cross to head                                   |
| ## 203 | misses R cross to head                                   |
| ## 204 | misses L jab to head                                     |
| ## 205 | 0  |
| ## 206 | misses L hook to head                                    |
| ## 207 | misses R cross to head, misses L hook to head            |
| ## 208 | ducks other fighter                                      |
| ## 209 | misses body shot R front kick                            |
| ## 210 | misses L jab   |
| ## 211 | 0  |
| ## 212 | misses R cross to head                                   |
| ## 213 | ducks other fighter                                      |
| ## 214 | misses L jab to head, lands L body shot R muay thai kick |
| ## 215 | lands R cross to head                                    |
| ## 216 | misses R cross to head                                   |
| ## 217 | misses R cross to head                                   |
| ## 218 | 0  |
| ## 219 | misses L head shot R muay thai kick                      |
| ## 220 | lands low kick with R muay thai kick                     |

```

## 221                                0
## 222                        drops to ground unconscious
## 223 referee stoppage-not unconscious long-technical knock out
## 224                tries to get up with referee on top, looks dazed
head(ArseErosa)

##      Round SecondsIntoRound SecondsLastRoundAction cmTotHitsR.A cmTotHitsL.A
## 1         1                 6                      6              0          0
## 2         1                19                     13              0          0
## 3         1                21                      2              0          0
## 4         1                24                      3              1          0
## 5         1                36                     12              1          0
## 6         1                39                      3              2          0

##      cmTotHitsM.A Hits.Recvd.A Hits.Lnd.A Hits.Mssd.A cmTotHitsR.E
## 1              0          0          0          0          0
## 2              0          0          0          0          0
## 3              0          0          0          0          0
## 4              0          1          0          0          0
## 5              1          0          0          1          0
## 6              1          1          0          0          0

##      cmTotHitsL.E cmTotHitsM.E Hits.Recvd.E Hits.Lnd.E Hits.Mssd.E Time
## 1              0          1          0          0          1 9:41
## 2              0          2          0          0          1 9:54
## 3              0          3          0          0          1 9:56
## 4              1          3          0          1          0 9:59
## 5              1          4          0          0          1 10:11
## 6              2          4          0          1          0 10:14

##      ArseFighterActionReactions
## 1                                0
## 2                                0
## 3                                0
## 4                                0
## 5                misses R jab
## 6                                0

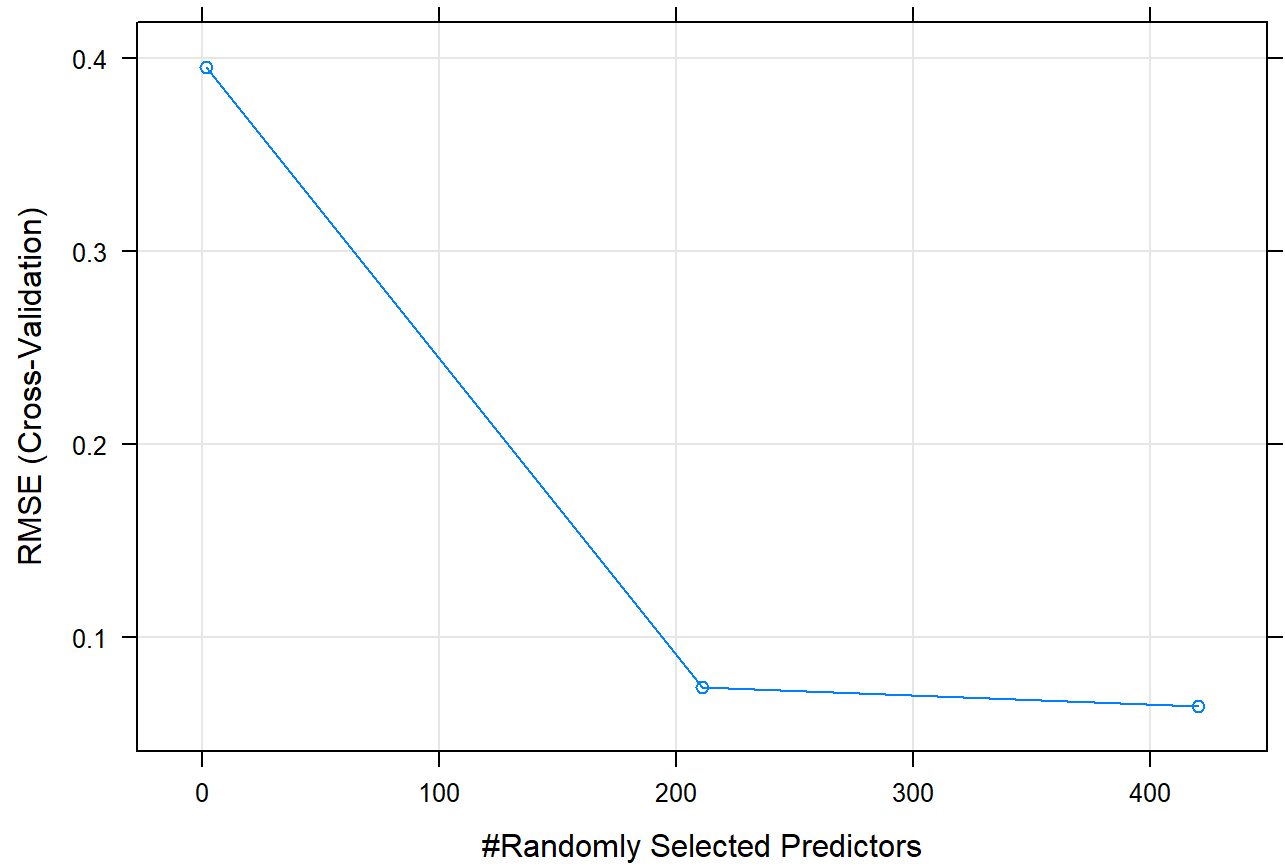
##                        ErosaFightersActionsReactions
## 1        misses standing head strike front kick
## 2        misses standing head strike front kick
## 3        misses standing head strike R muay thai kick

```

```
## 4          lands low leg muay thai kick
## 5          misses L jab
## 6 lands standing L Body shot muay thai kick R leg
library(caret)
library(randomForest)
library(MASS)
library(gbm)
library(dplyr)
set.seed(189678345)
inTrain <- createDataPartition(y=ArseErosa$Hits.Lnd.A, p=0.7, list=FALSE)

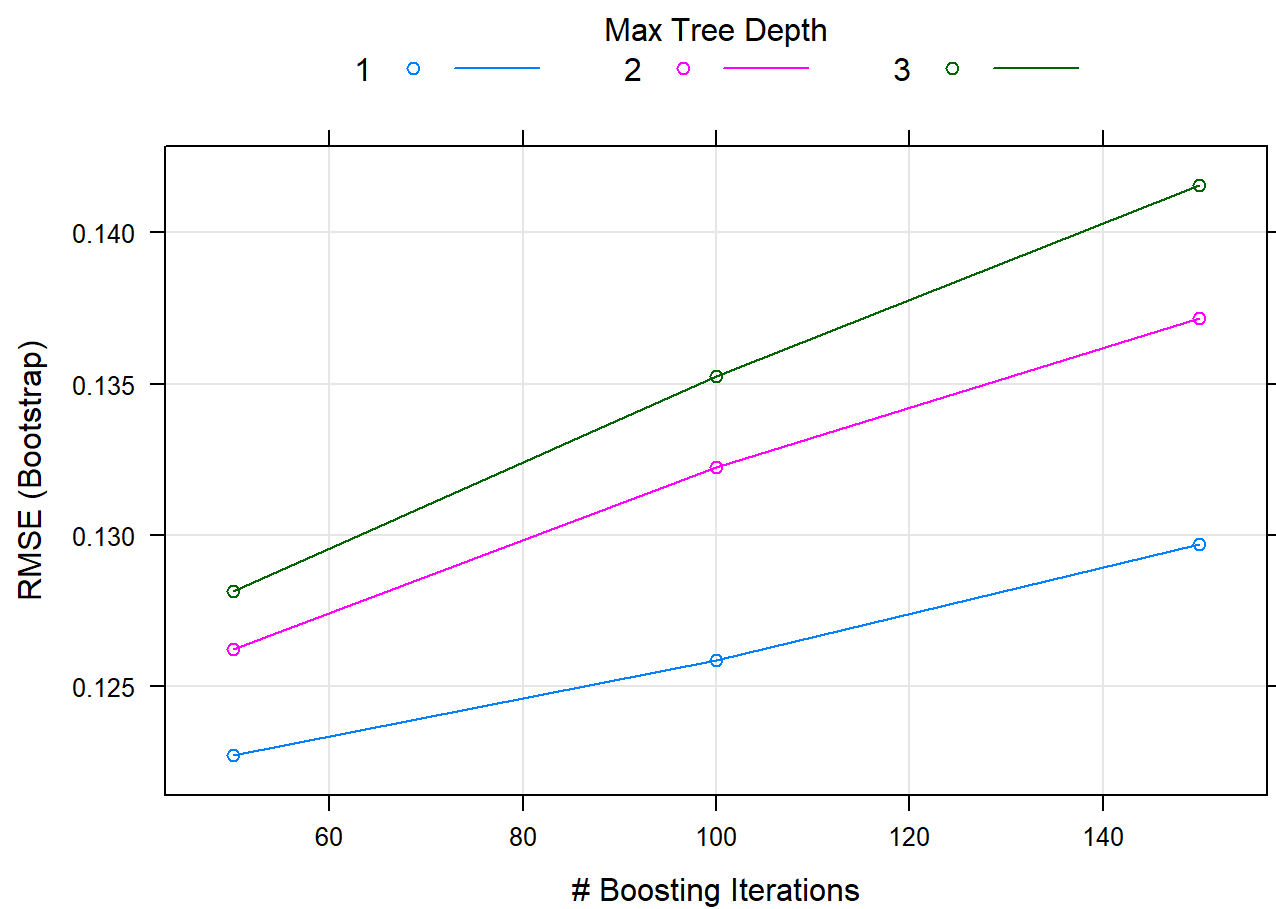
trainingSet <- ArseErosa[inTrain,]
testingSet <- ArseErosa[-inTrain,]
system.time(rfMod <- train(Hits.Lnd.A~., method='rf', data=(trainingSet),
                           trControl=trainControl(method='cv'), number=5))

##      user  system elapsed
## 225.55    0.39   257.95
plot(rfMod)
```



```
system.time(gbmMod <- train(Hits.Lnd.A~., method='gbm', data=trainingSet, verbose=FALSE))  
##      user  system elapsed  
## 58.14    0.25   70.88  
plot(gbmMod)
```





```
predRF <- round(predict(rfMod, testingSet))
predGbm <- round(predict(gbmMod, testingSet))

predDF <- data.frame(predRF, predGbm, type=testingSet$Hits.Lnd.A)
predDF
```

| ##    | predRF | predGbm | type |
|-------|--------|---------|------|
| ## 1  | 0      | 0       | 0    |
| ## 2  | 0      | 0       | 0    |
| ## 5  | 0      | 0       | 0    |
| ## 6  | 0      | 0       | 0    |
| ## 9  | 0      | 0       | 0    |
| ## 12 | 0      | 0       | 0    |
| ## 13 | 0      | 0       | 0    |
| ## 16 | 0      | 0       | 0    |
| ## 19 | 0      | 0       | 0    |

|        |   |   |   |
|--------|---|---|---|
| ## 22  | 0 | 0 | 0 |
| ## 23  | 0 | 0 | 0 |
| ## 24  | 0 | 0 | 0 |
| ## 26  | 0 | 0 | 0 |
| ## 27  | 1 | 1 | 2 |
| ## 28  | 0 | 0 | 0 |
| ## 34  | 1 | 1 | 1 |
| ## 38  | 1 | 1 | 1 |
| ## 40  | 0 | 0 | 0 |
| ## 41  | 0 | 0 | 0 |
| ## 47  | 0 | 0 | 0 |
| ## 50  | 0 | 0 | 0 |
| ## 55  | 1 | 1 | 1 |
| ## 59  | 0 | 0 | 0 |
| ## 60  | 0 | 0 | 0 |
| ## 66  | 0 | 0 | 0 |
| ## 71  | 1 | 1 | 1 |
| ## 72  | 0 | 0 | 0 |
| ## 73  | 1 | 1 | 1 |
| ## 83  | 1 | 1 | 1 |
| ## 93  | 0 | 0 | 0 |
| ## 96  | 0 | 0 | 0 |
| ## 99  | 0 | 0 | 0 |
| ## 102 | 0 | 0 | 0 |
| ## 105 | 1 | 1 | 1 |
| ## 108 | 0 | 0 | 0 |
| ## 118 | 1 | 1 | 1 |
| ## 119 | 0 | 0 | 0 |
| ## 125 | 0 | 0 | 0 |
| ## 126 | 0 | 0 | 0 |
| ## 128 | 0 | 0 | 0 |
| ## 129 | 0 | 0 | 0 |
| ## 131 | 0 | 0 | 0 |
| ## 132 | 0 | 0 | 0 |
| ## 133 | 0 | 0 | 0 |
| ## 134 | 0 | 0 | 0 |
| ## 142 | 0 | 0 | 0 |

```

## 146      0      0      0
## 147      0      0      0
## 153      0      0      0
## 157      0      0      0
## 161      0      0      0
## 162      0      0      0
## 164      0      0      0
## 166      0      0      1
## 169      0      0      0
## 171      0      0      0
## 172      1      1      1
## 174      0      0      0
## 182      0      0      0
## 185      0      0      0
## 187      0      0      0
## 190      0      0      0
## 195      1      1      1
## 206      0      0      0
## 211      0      0      0
## 219      0      0      0
## 222      1      1      1

CombinedModels <- train(type~., method='gam', data=predDF)
CombinedPredictions <- round(predict(CombinedModels, predDF))
CombinedPredictions

##   1   2   5   6   9  12  13  16  19  22  23  24  26  27  28  34  38  40
##   0   0   0   0   0   0   0   0   0   0   0   0   0   1   0   1   1   0
##  41  47  50  55  59  60  66  71  72  73  83  93  96  99 102 105 108 118
##   0   0   0   1   0   0   0   1   0   1   1   0   0   0   0   1   0   1
## 119 125 126 128 129 131 132 133 134 142 146 147 153 157 161 162 164 166
##   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0   0
## 169 171 172 174 182 185 187 190 195 206 211 219 222
##   0   0   1   0   0   0   0   0   1   0   0   0   1

sum <- sum(CombinedPredictions==testingSet$Hits.Lnd.A)
length <- length(testingSet$Hits.Lnd.A)
accuracy_CP1 <- sum/length #97.01

sum <- sum(predRF==testingSet$Hits.Lnd.A)

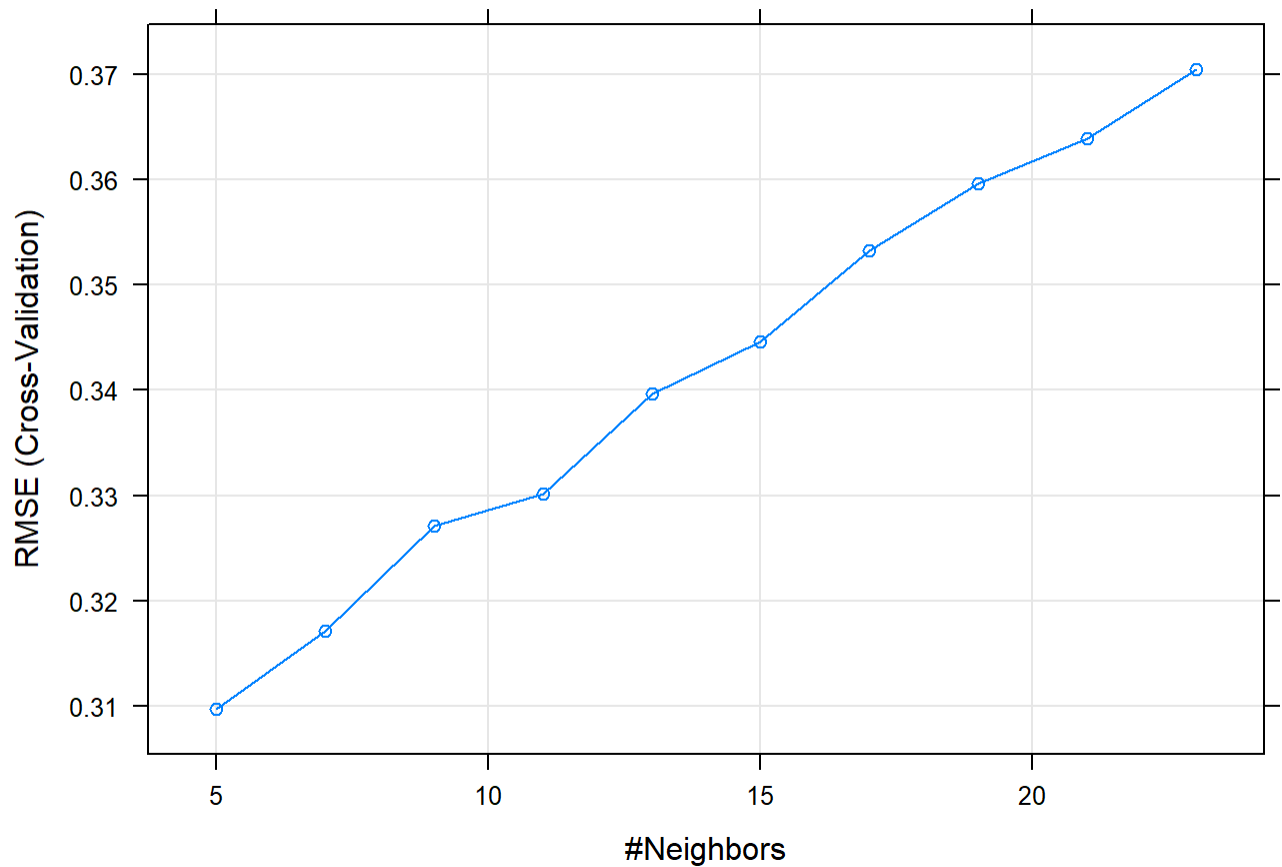
```

```

length <- length(testingSet$Hits.Lnd.A)
accuracy_rfMod <- (sum/length) #97.01

sum <- sum(predGbm==testingSet$Hits.Lnd.A)
accuracy_Gbm <- (sum/length) #97.01
system.time(knnMod <- train(Hits.Lnd.A ~ .,
                           method='knn', preProcess=c('center','scale'),
                           tuneLength=10, trControl=trainControl(method='cv'), data=train
rainingSet))
##      user  system elapsed
##      9.07    0.62   14.41
plot(knnMod)

```

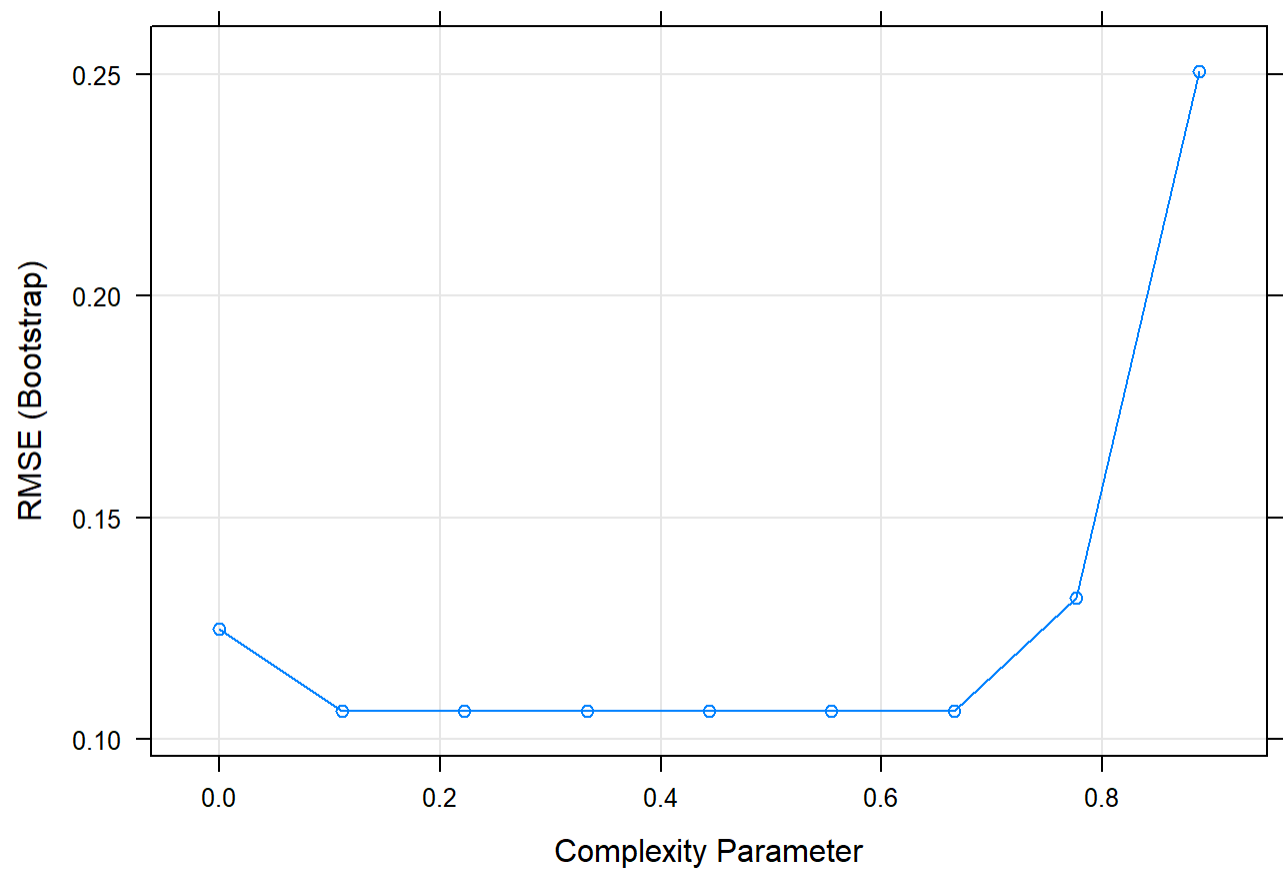


```

system.time(rpartMod <- train(Hits.Lnd.A ~ ., method='rpart', tuneLength=9, data=train
ingSet))
##      user  system elapsed
##     15.30    0.17   16.42

```

```
plot(rpartMod)
```



```
system.time(glmMod <- train(Hits.Lnd.A ~ .,
                           method='glm', data=trainingSet))

##      user  system elapsed
##    5.92    0.10    6.26

predKNN <- round(predict(knnMod, testingSet))
predRPART <- round(predict(rpartMod, testingSet))
predGLM <- round(predict(glmMod, testingSet))

## Warning in predict.lm(object, newdata, se.fit, scale = 1, type = if (type
## == : prediction from a rank-deficient fit may be misleading

df3 <- cbind(predKNN, predRPART, predGLM, testingSet$Hits.Lnd.A)
colnames(df3)[4] <- 'TrueValue'
length=length(testingSet$Hits.Lnd.A)

sumKNN <- sum(predKNN==testingSet$Hits.Lnd.A)
```

```

sumRPart <- sum(predRPART==testingSet$Hits.Lnd.A)
sumGLM <- sum(predGLM==testingSet$Hits.Lnd.A)

accuracy_KNN <- sumKNN/length
accuracy_RPART <- sumRPart/length
accuracy_GLM <- sumGLM/length

predDF3 <- data.frame(predRF,predGbm,df3)
system.time(CombinedModels <- train(TrueValue ~ ., method='gam', data=predDF3))
##      user  system elapsed
##    1.95    0.00    2.02
CombinedPredictions2 <- round(predict(CombinedModels, predDF3))
accuracy_CP2 <- sum(CombinedPredictions2==testingSet$Hits.Lnd.A)/length

predDF4 <- data.frame(predDF3, CombinedPredictions2)
colnames(predDF4)
## [1] "predRF"          "predGbm"          "predKNN"
## [4] "predRPART"       "predGLM"          "TrueValue"
## [7] "CombinedPredictions2"
predDF4 <- predDF4[,c(1:5,7,6)]
colnames(predDF4)
## [1] "predRF"          "predGbm"          "predKNN"
## [4] "predRPART"       "predGLM"          "CombinedPredictions2"
## [7] "TrueValue"
results <- c(round(accuracy_rfMod,2),
             round(accuracy_Gbm,2),
             round(accuracy_KNN,2), round(accuracy_RPART,2),
             round(accuracy_GLM,2),
             round(accuracy_CP2,2), round(100,2))

results <- as.factor(results)
results <- t(data.frame(results))#1X7
colnames(results) <- colnames(predDF4)
Results <- rbind(predDF4, results) #68X7
Results
##      predRF predGbm predKNN predRPART predGLM CombinedPredictions2
## 1         0         0         0         0         0

```

|        |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|
| ## 2   | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 5   | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 6   | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 9   | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 12  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 13  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 16  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 19  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 22  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 23  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 24  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 26  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 27  | 1 | 1 | 1 | 1 | 2 | 2 |
| ## 28  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 34  | 1 | 1 | 1 | 1 | 1 | 1 |
| ## 38  | 1 | 1 | 1 | 1 | 1 | 1 |
| ## 40  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 41  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 47  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 50  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 55  | 1 | 1 | 0 | 1 | 1 | 1 |
| ## 59  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 60  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 66  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 71  | 1 | 1 | 0 | 1 | 1 | 1 |
| ## 72  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 73  | 1 | 1 | 0 | 1 | 1 | 1 |
| ## 83  | 1 | 1 | 0 | 1 | 1 | 1 |
| ## 93  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 96  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 99  | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 102 | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 105 | 1 | 1 | 1 | 1 | 1 | 1 |
| ## 108 | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 118 | 1 | 1 | 1 | 1 | 1 | 1 |
| ## 119 | 0 | 0 | 0 | 0 | 0 | 0 |
| ## 125 | 0 | 0 | 0 | 0 | 0 | 0 |

|            |           |      |     |      |      |      |
|------------|-----------|------|-----|------|------|------|
| ## 126     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 128     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 129     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 131     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 132     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 133     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 134     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 142     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 146     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 147     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 153     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 157     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 161     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 162     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 164     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 166     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 169     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 171     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 172     | 1         | 1    | 1   | 1    | 1    | 1    |
| ## 174     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 182     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 185     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 187     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 190     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 195     | 1         | 1    | 1   | 1    | 1    | 1    |
| ## 206     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 211     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 219     | 0         | 0    | 0   | 0    | 0    | 0    |
| ## 222     | 1         | 1    | 0   | 1    | 1    | 1    |
| ## results | 0.97      | 0.97 | 0.9 | 0.97 | 0.99 | 0.99 |
| ##         | TrueValue |      |     |      |      |      |
| ## 1       | 0         |      |     |      |      |      |
| ## 2       | 0         |      |     |      |      |      |
| ## 5       | 0         |      |     |      |      |      |
| ## 6       | 0         |      |     |      |      |      |
| ## 9       | 0         |      |     |      |      |      |
| ## 12      | 0         |      |     |      |      |      |



|        |   |
|--------|---|
| ## 13  | 0 |
| ## 16  | 0 |
| ## 19  | 0 |
| ## 22  | 0 |
| ## 23  | 0 |
| ## 24  | 0 |
| ## 26  | 0 |
| ## 27  | 2 |
| ## 28  | 0 |
| ## 34  | 1 |
| ## 38  | 1 |
| ## 40  | 0 |
| ## 41  | 0 |
| ## 47  | 0 |
| ## 50  | 0 |
| ## 55  | 1 |
| ## 59  | 0 |
| ## 60  | 0 |
| ## 66  | 0 |
| ## 71  | 1 |
| ## 72  | 0 |
| ## 73  | 1 |
| ## 83  | 1 |
| ## 93  | 0 |
| ## 96  | 0 |
| ## 99  | 0 |
| ## 102 | 0 |
| ## 105 | 1 |
| ## 108 | 0 |
| ## 118 | 1 |
| ## 119 | 0 |
| ## 125 | 0 |
| ## 126 | 0 |
| ## 128 | 0 |
| ## 129 | 0 |
| ## 131 | 0 |
| ## 132 | 0 |

```
## 133      0
## 134      0
## 142      0
## 146      0
## 147      0
## 153      0
## 157      0
## 161      0
## 162      0
## 164      0
## 166      1
## 169      0
## 171      0
## 172      1
## 174      0
## 182      0
## 185      0
## 187      0
## 190      0
## 195      1
## 206      0
## 211      0
## 219      0
## 222      1
## results    100

#write.csv(Results,'TrueHitsLanded_ML_predictionResults.csv', row.names=FALSE)
```