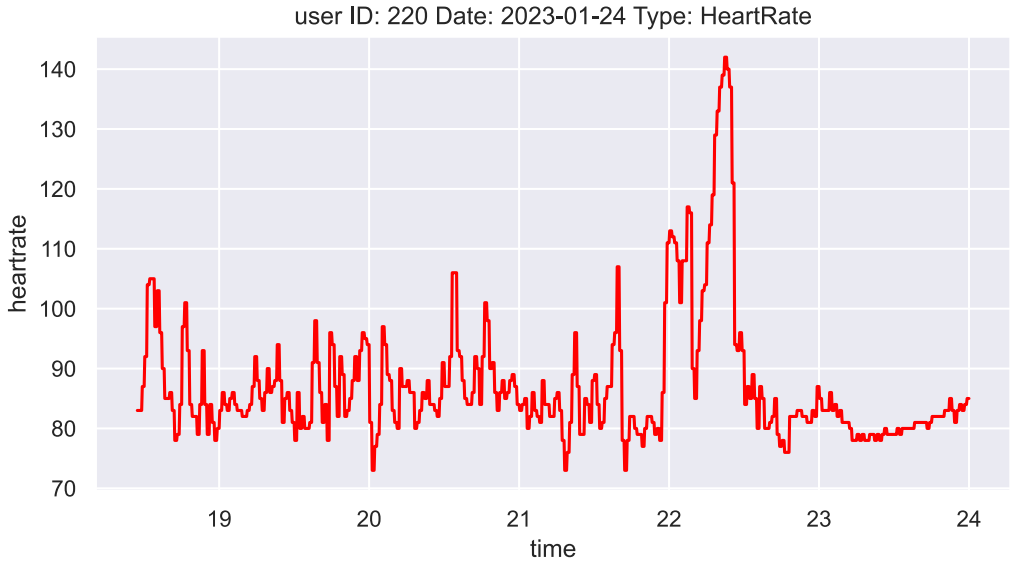
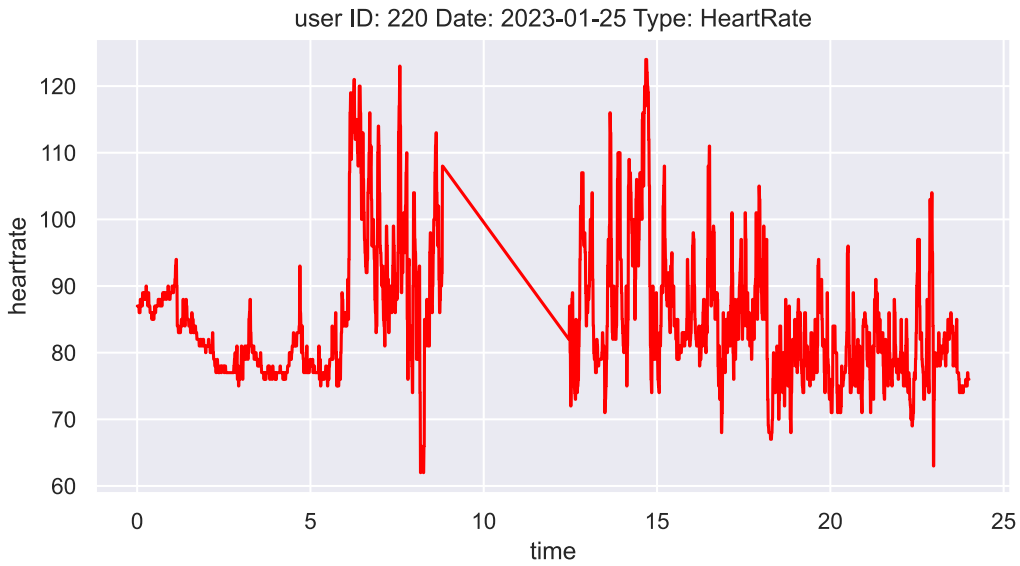
In [1]:
```
import pandas as pd
import matplotlib.pyplot as plt
from astropy.stats.circstats import circmean
from functools import reduce
import datetime
import pickle
import time
import plotly.express as px
import numpy as np
import sqlite3

pd.set_option("display.precision", 2)
plt.rcParams.update({'font.size': 20, 'figure.figsize': (8, 4)})

%matplotlib inline
import matplotlib_inline
matplotlib_inline.backend_inline.set_matplotlib_formats('svg')

import seaborn as sns
sns.set()

import warnings
warnings.filterwarnings('ignore')
```

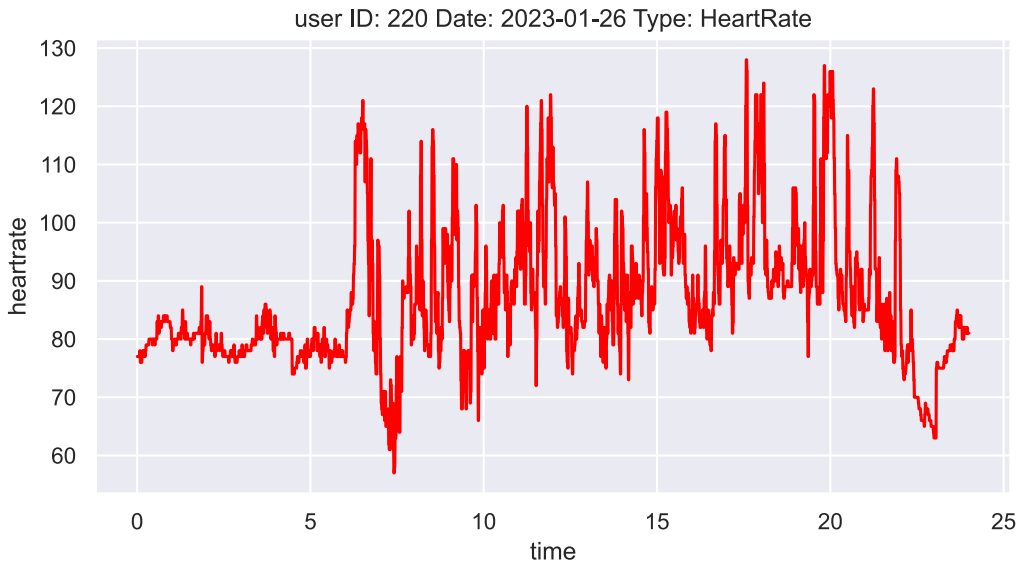
In [2]:
```
connector = sqlite3.connect("../Extras/graphs_data.db")
cursor = connector.cursor()
```

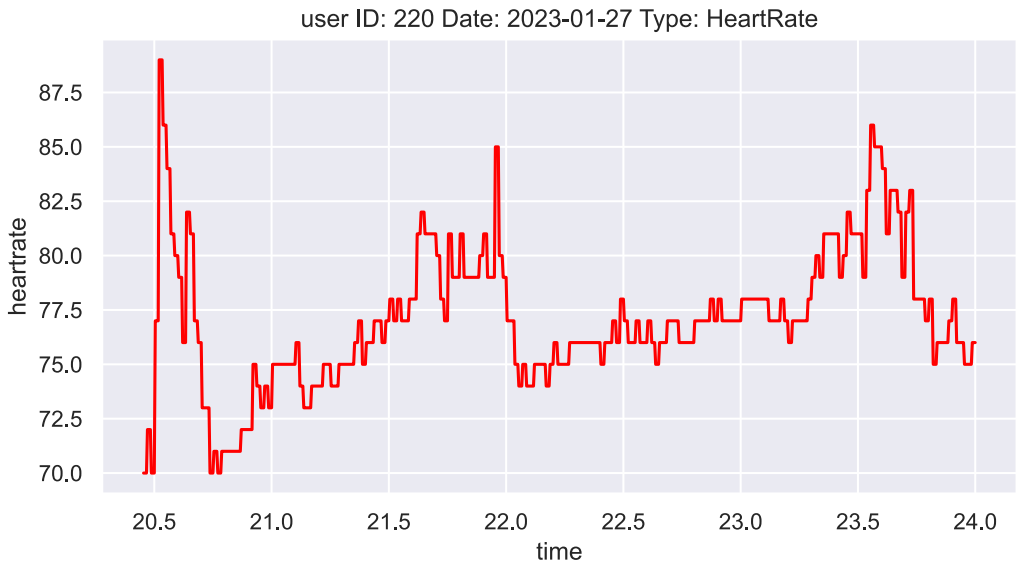
Heart Rate graphs printer

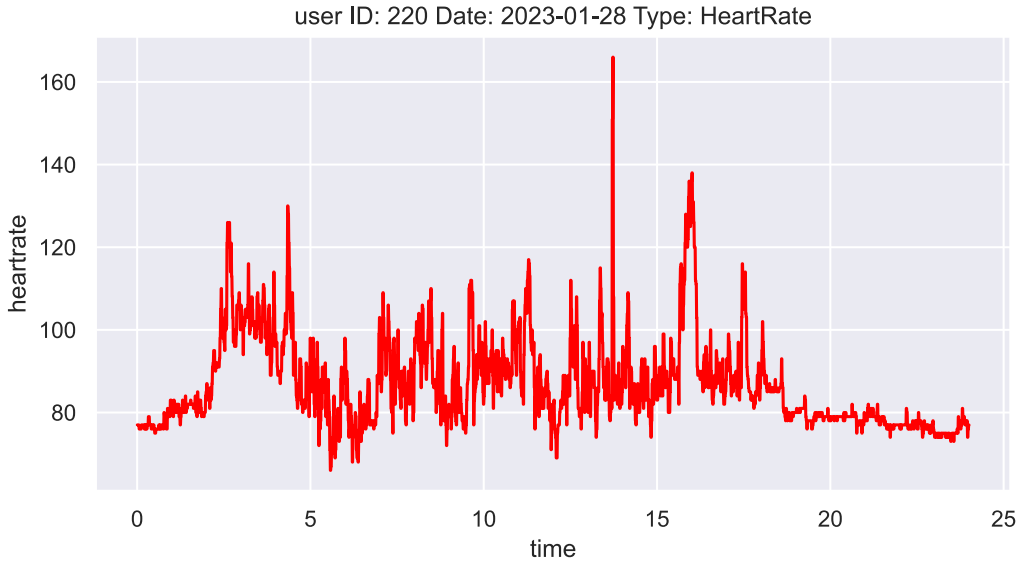
In [48]:
```
cursor.execute("SELECT * FROM heartrate_graphs_data WHERE id=220")
rows = cursor.fetchall()
for row in rows:
        #getting heartrate samples from dataframe
        heartrate_samples_dict = pickle.loads(row[3])
        heartrate_dict_keys = list(heartrate_samples_dict.keys())
        heartrate_dict_values = list(heartrate_samples_dict.values())
        heartrate_samples_df = pd.DataFrame({'time':heartrate_dict_keys, 'heartrate':heartrate_dict_values})
        #preparing plot title name
        plot_title_name = 'user ID: '+str(row[0])+' Date: '+str(row[1])+' Type: '+str(row[2])
        #creating lineplot
        sns.lineplot(x='time', y='heartrate', data=heartrate_samples_df, color='red')
        plt.title(plot_title_name)
        plt.show()
```

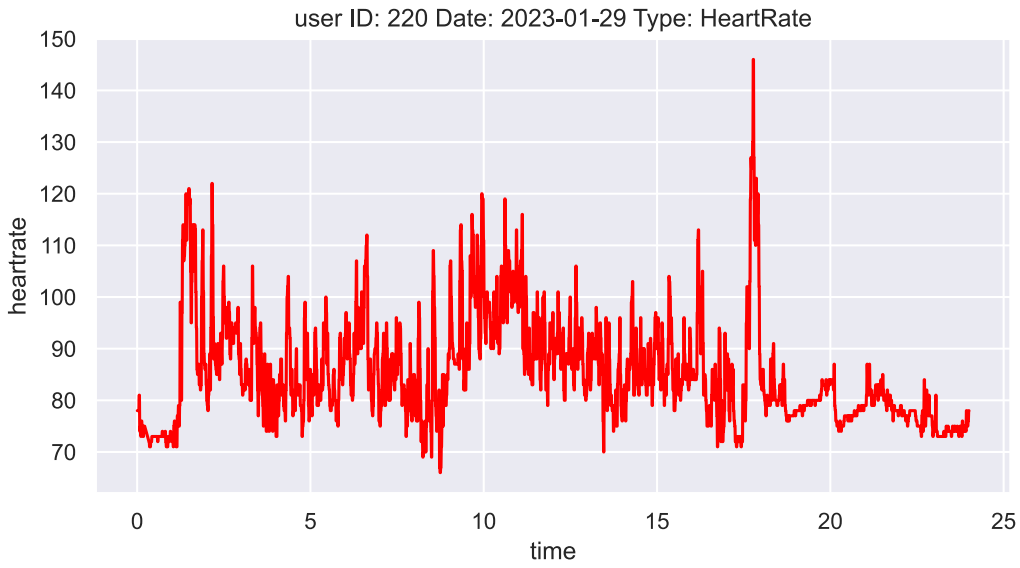


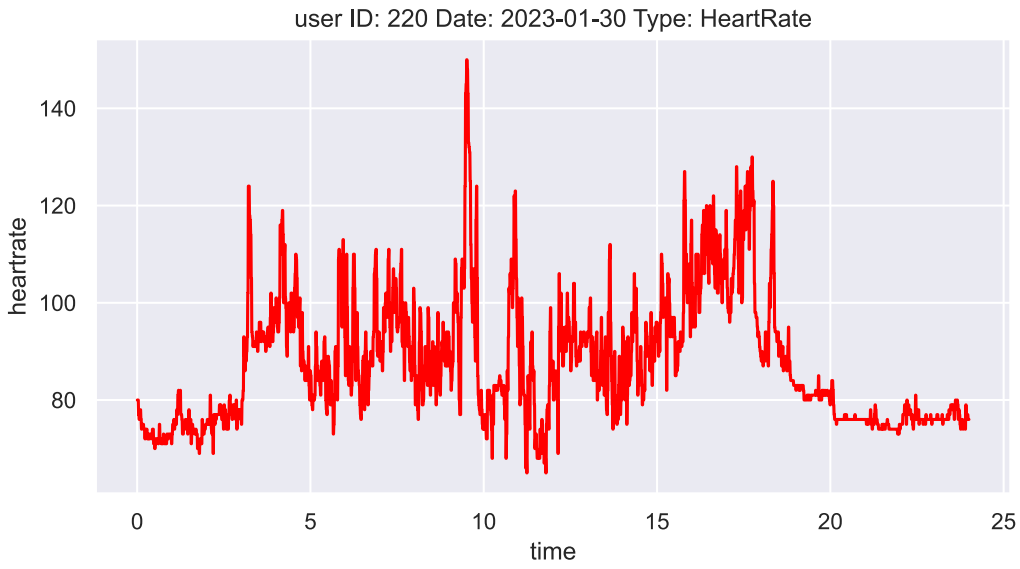

user ID: 220 Date: 2023-01-25 Type: HeartRate
heartrate
120
110
100
90
80
70
60
0
5
10
15
20
25
time

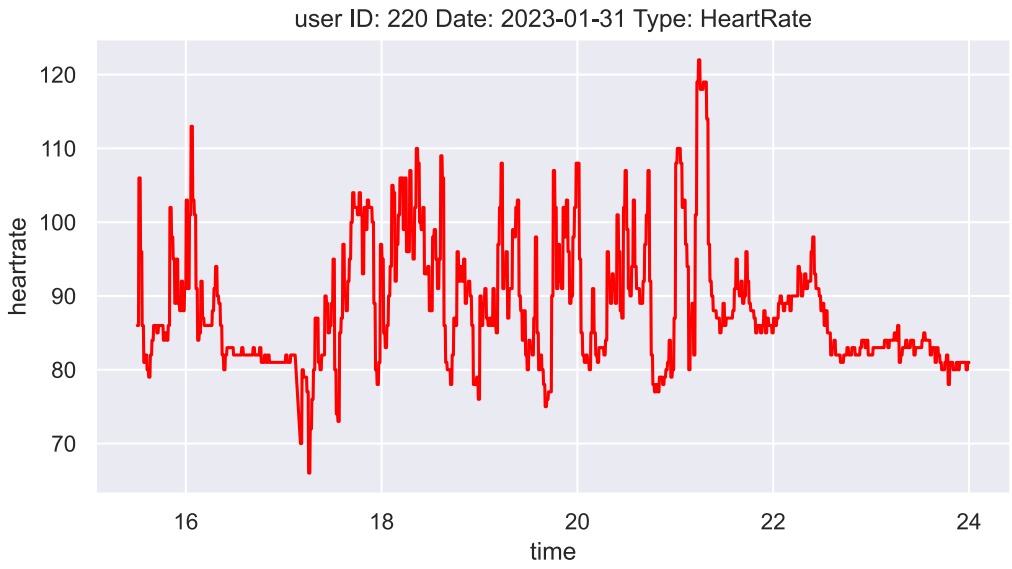

user ID: 220 Date: 2023-01-26 Type: HeartRate
heartrate
130
120
110
100
90
80
70
60
0
5
10
15
20
25
time

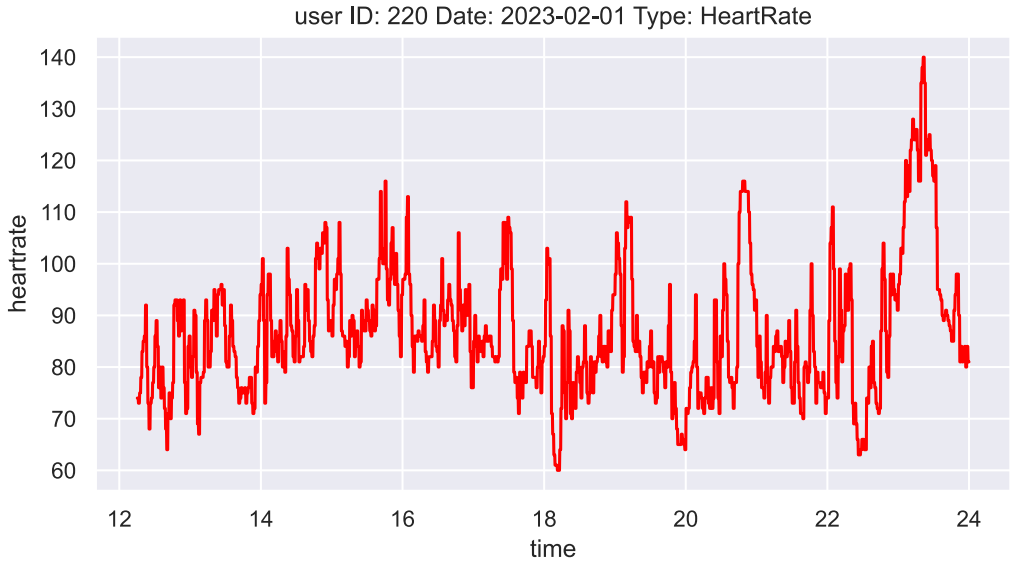

user ID: 220 Date: 2023-01-27 Type: HeartRate
heartrate
87.5
85.0
82.5
80.0
77.5
75.0
72.5
70.0
20.5
21.0
21.5
22.0
22.5
23.0
23.5
24.0
time

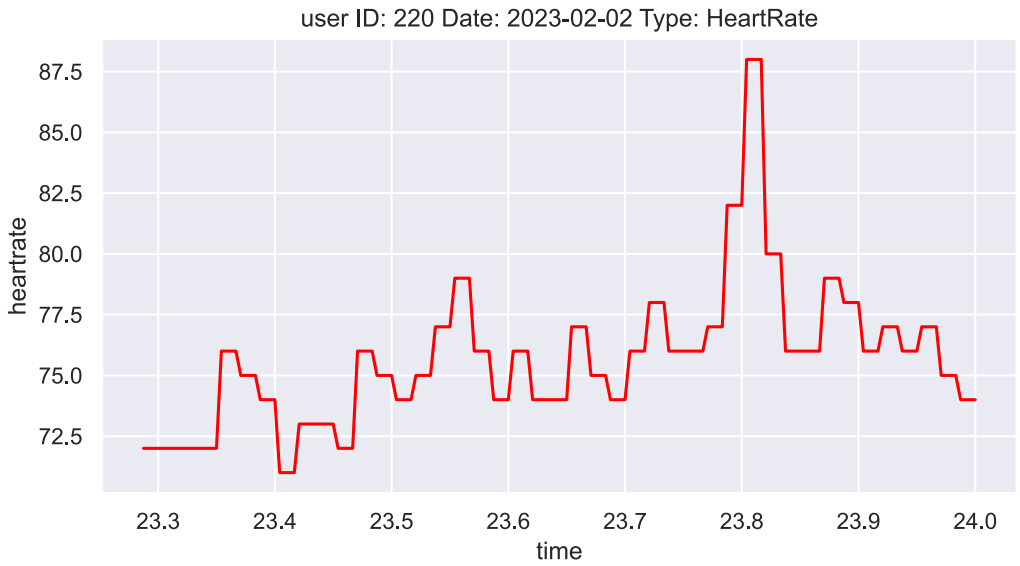

user ID: 220 Date: 2023-01-28 Type: HeartRate
heartrate
160
140
120
100
80
0
5
10
15
20
25
time

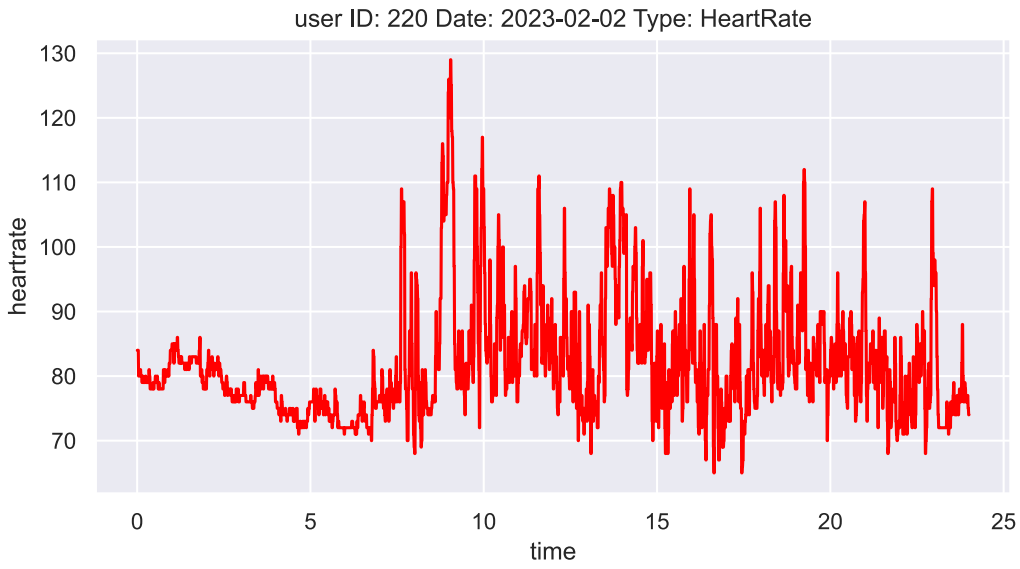

user ID: 220 Date: 2023-01-29 Type: HeartRate
heartrate
150
140
130
120
110
100
90
80
70
0
5
10
15
20
25
time

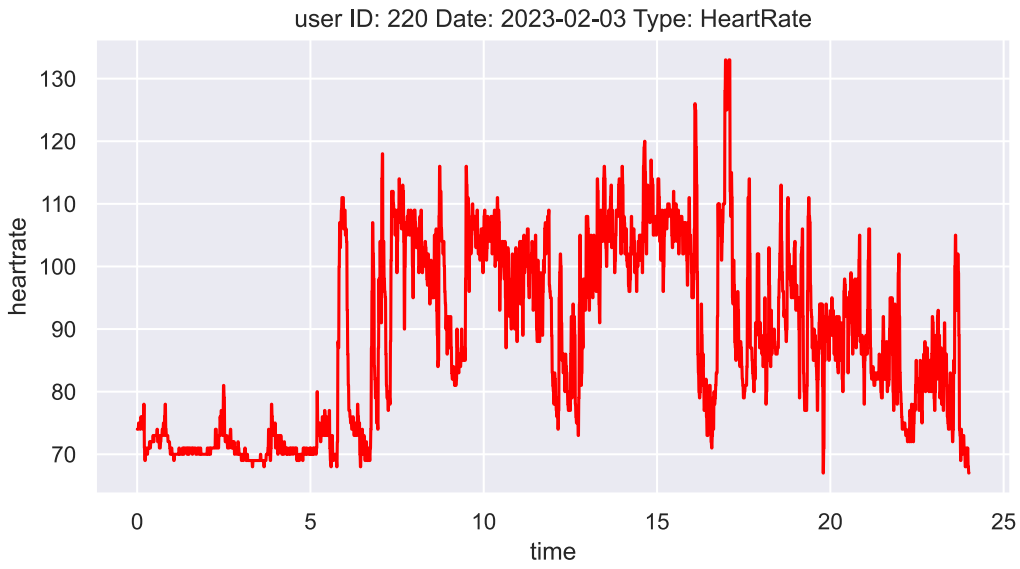

user ID: 220 Date: 2023-01-30 Type: HeartRate
heartrate
140
120
100
80
0
5
10
15
20
25
time

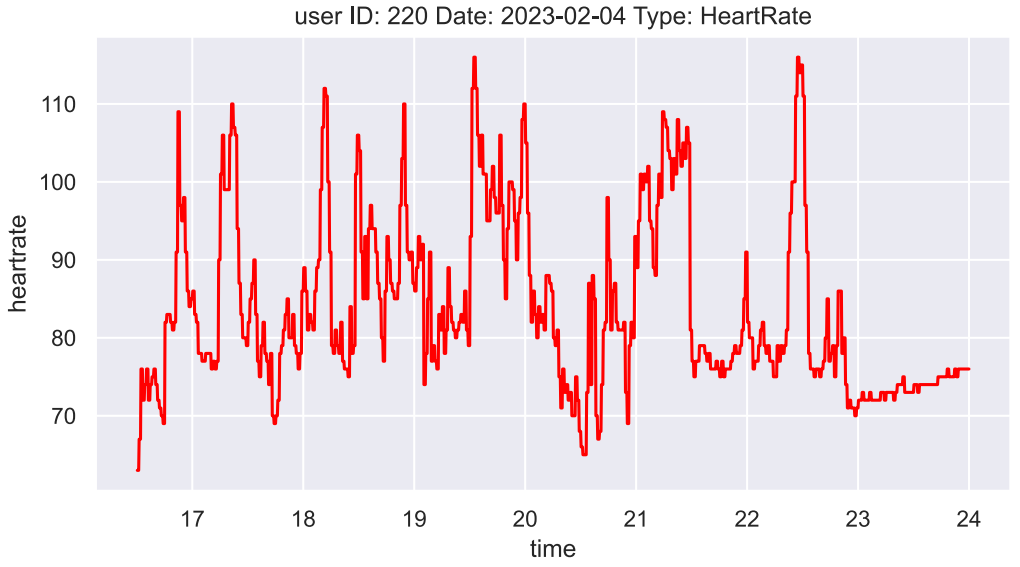

user ID: 220 Date: 2023-01-31 Type: HeartRate
heartrate
120
110
100
90
80
70
16
18
20
22
24
time

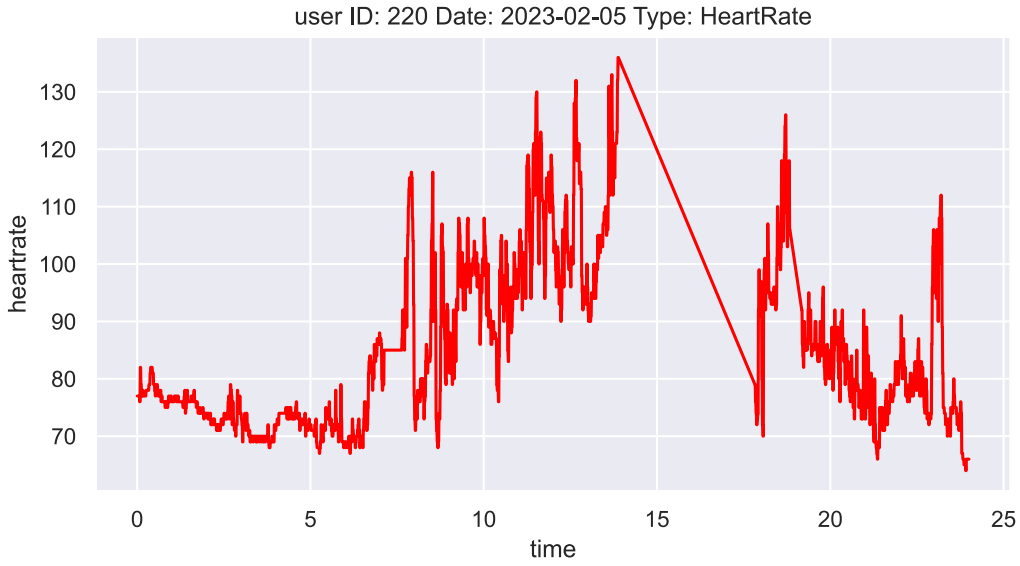

user ID: 220 Date: 2023-02-01 Type: HeartRate
heartrate
140
130
120
110
100
90
80
70
60
12
14
16
18
20
22
24
time

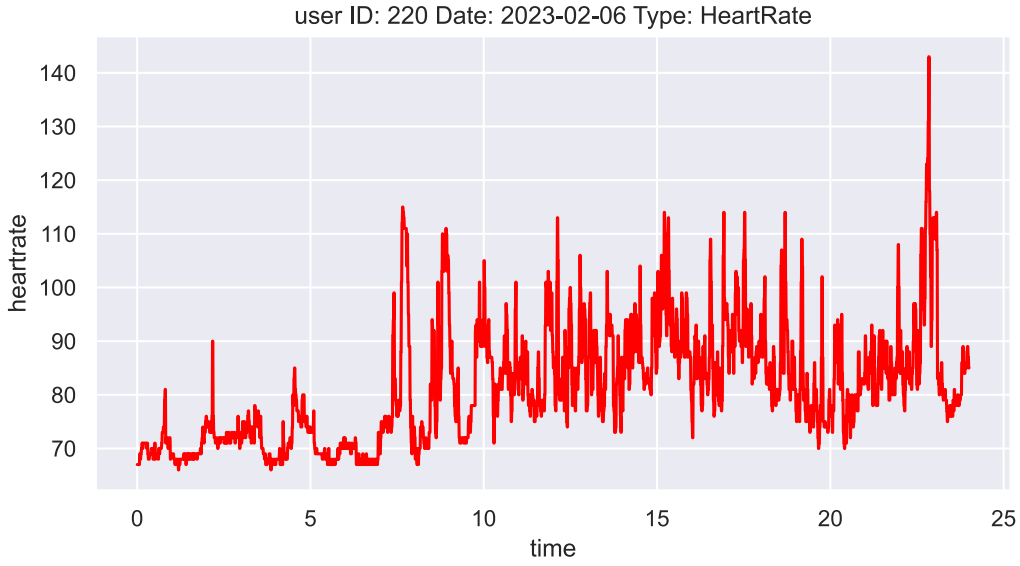

user ID: 220 Date: 2023-02-02 Type: HeartRate
heartrate
87.5
85.0
82.5
80.0
77.5
75.0
72.5
23.3
23.4
23.5
23.6
23.7
23.8
23.9
24.0
time

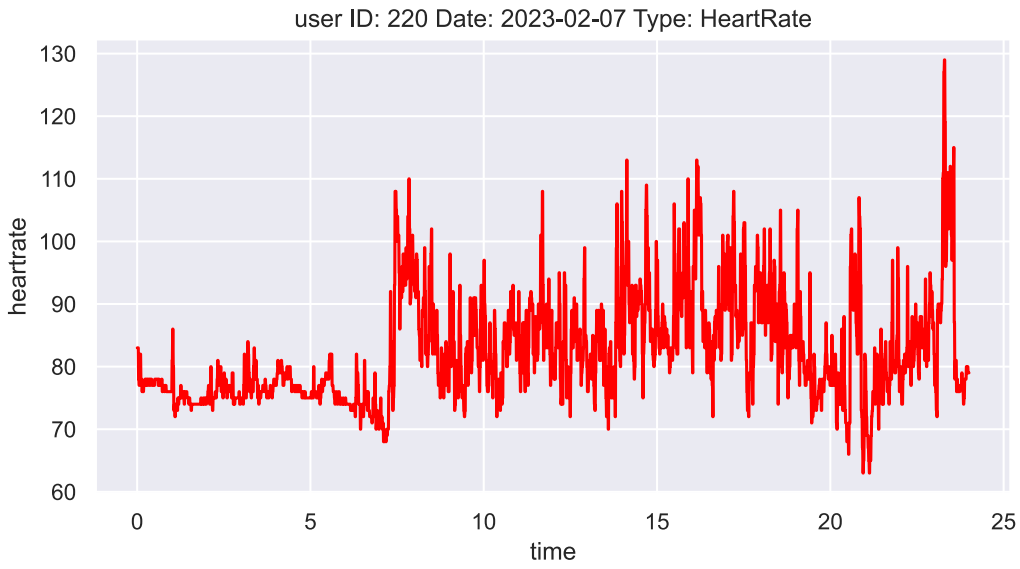

user ID: 220 Date: 2023-02-02 Type: HeartRate
heartrate
130
120
110
100
90
80
70
0
5
10
15
20
25
time

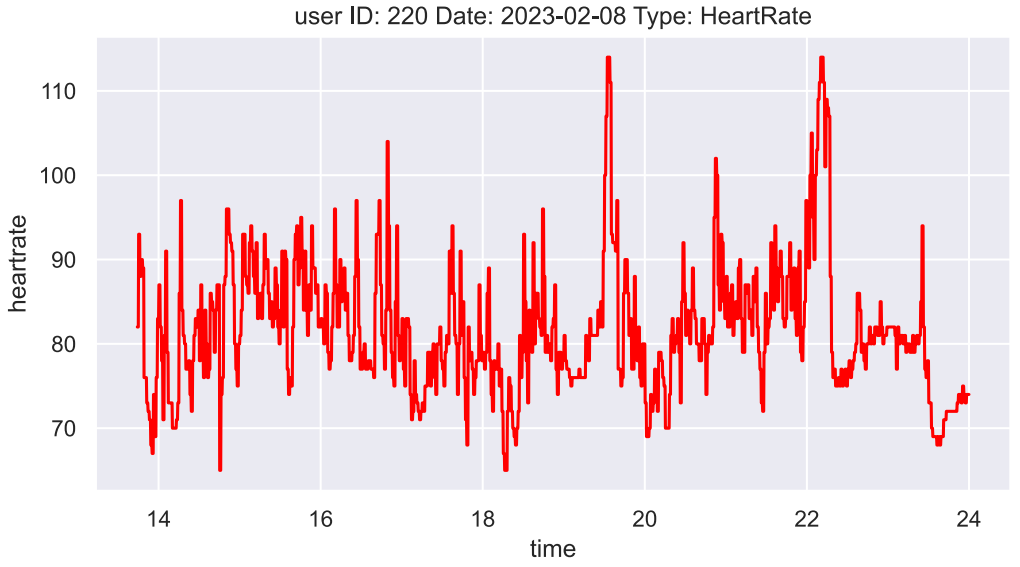

user ID: 220 Date: 2023-02-03 Type: HeartRate
heartrate
130
120
110
100
90
80
70
0
5
10
15
20
25
time

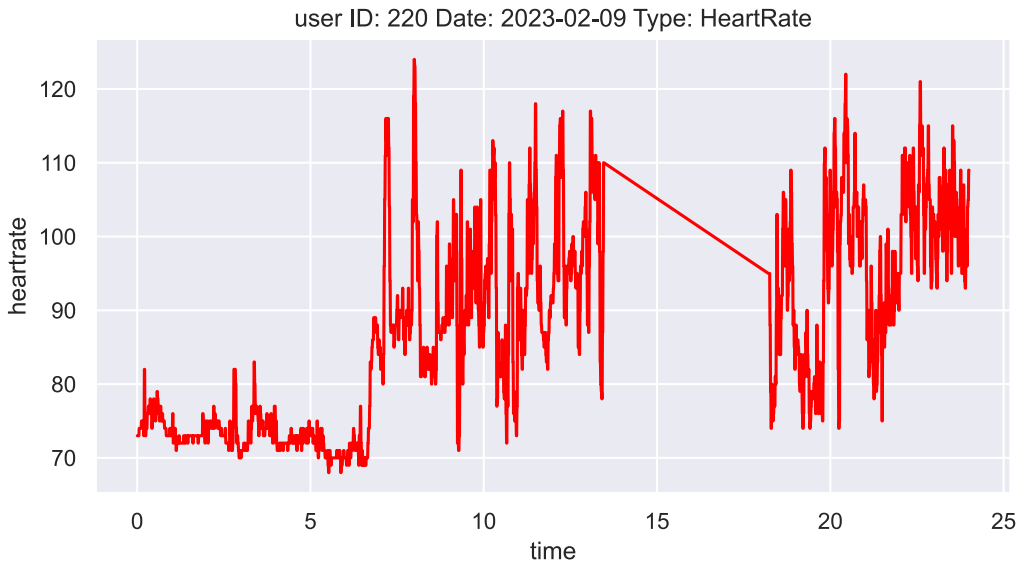

user ID: 220 Date: 2023-02-04 Type: HeartRate
heartrate
110
100
90
80
70
17
18
19
20
21
22
23
24
time

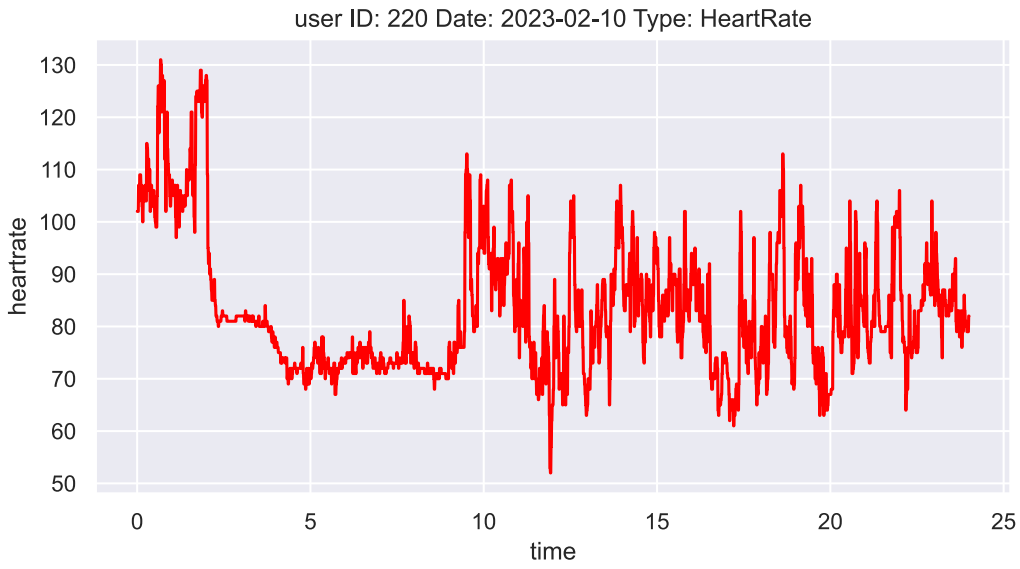

user ID: 220 Date: 2023-02-05 Type: HeartRate
heartrate
130
120
110
100
90
80
70
0
5
10
15
20
25
time

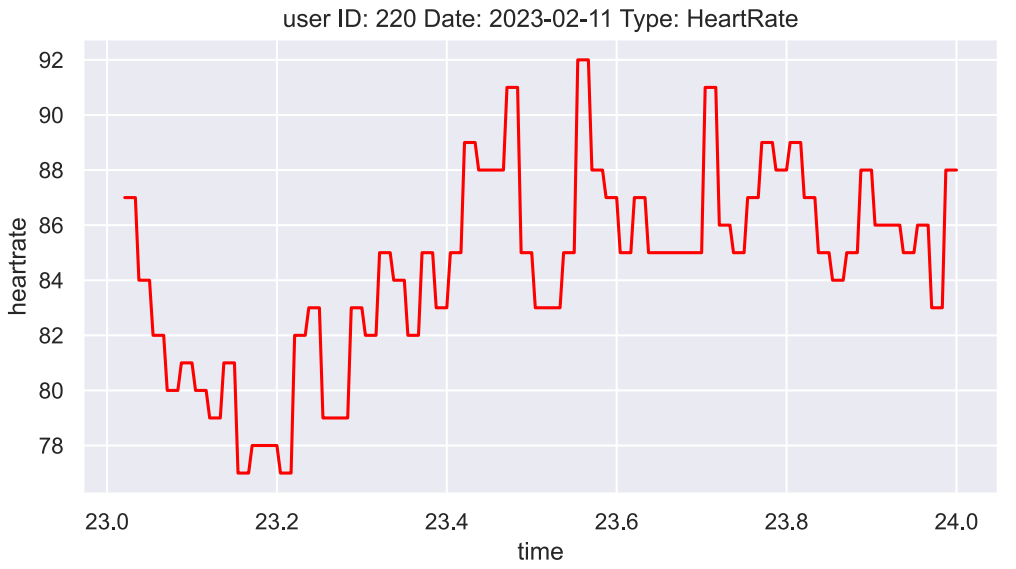

user ID: 220 Date: 2023-02-06 Type: HeartRate
heartrate
140
130
120
110
100
90
80
70
0
5
10
15
20
25
time

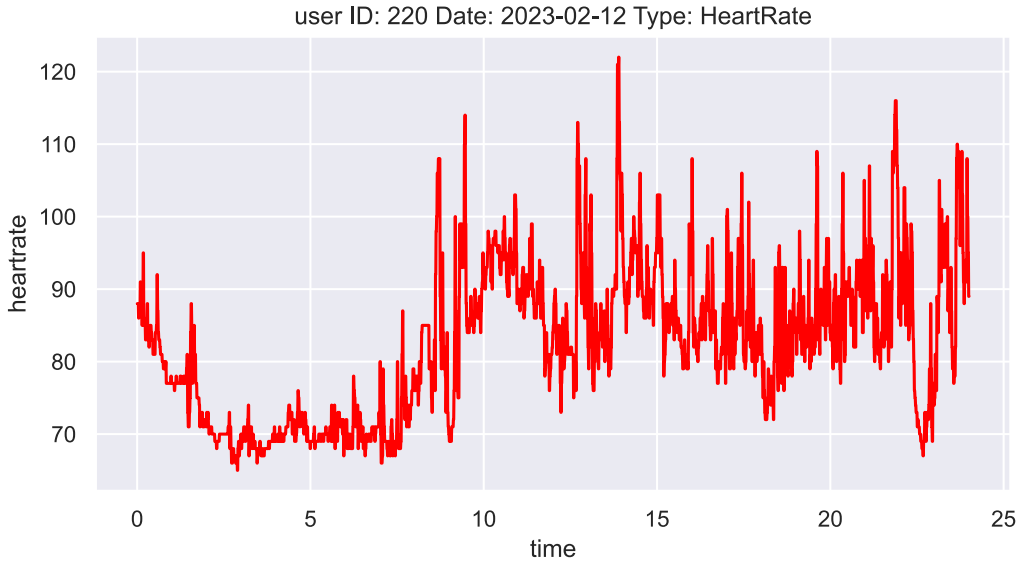

user ID: 220 Date: 2023-02-07 Type: HeartRate
heartrate
time
130
120
110
100
90
80
70
60
0
5
10
15
20
25

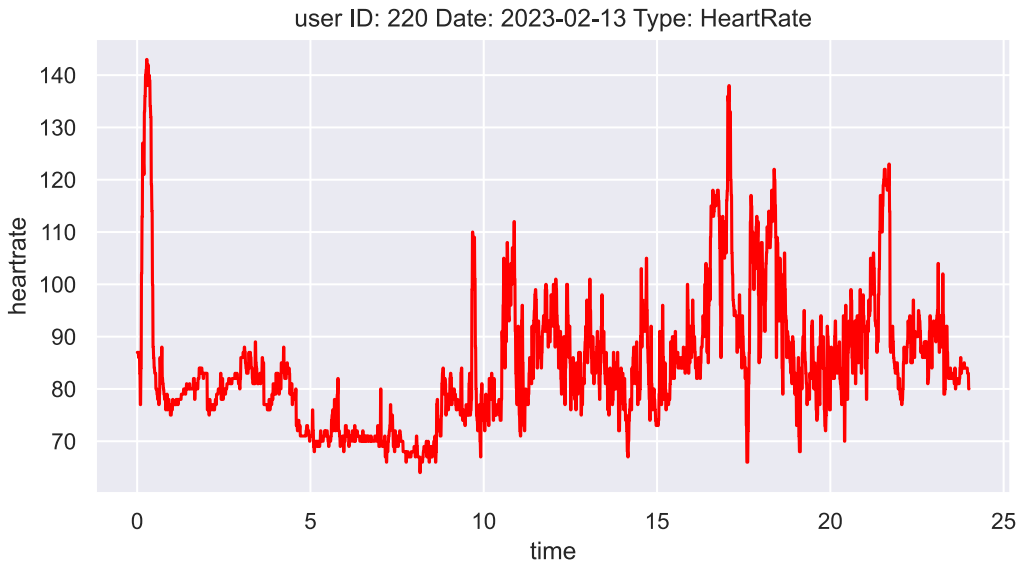

user ID: 220 Date: 2023-02-08 Type: HeartRate
heartrate
time
110
100
90
80
70
14
16
18
20
22
24

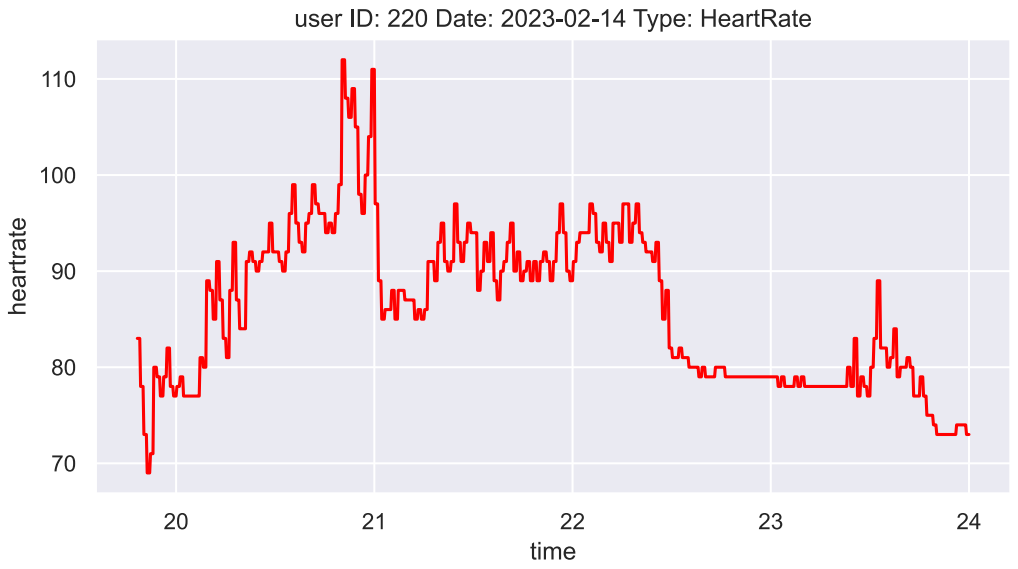

user ID: 220 Date: 2023-02-09 Type: HeartRate
heartrate
120
110
100
90
80
70
0
5
10
15
20
25
time

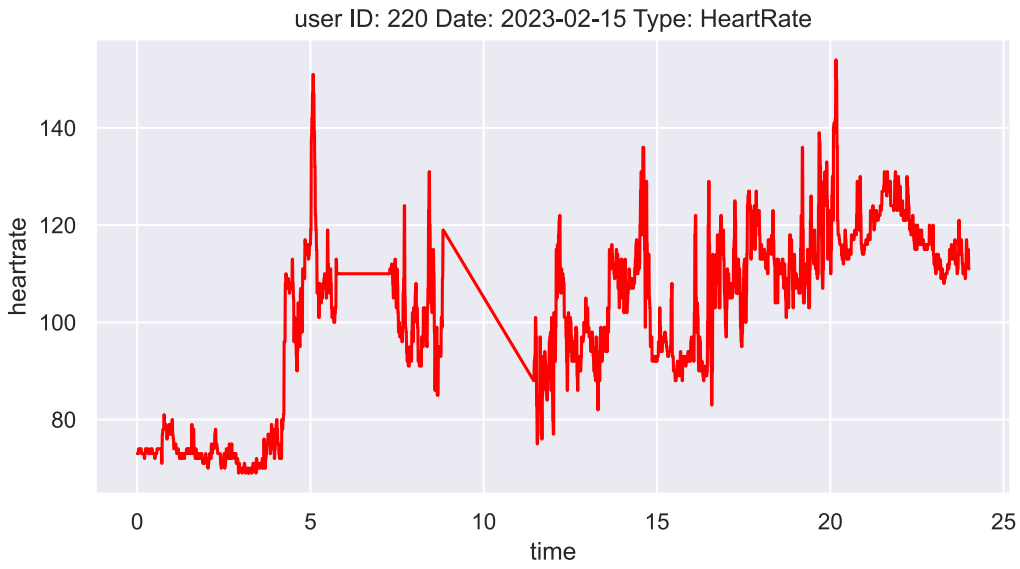

user ID: 220 Date: 2023-02-10 Type: HeartRate
heartrate
130
120
110
100
90
80
70
60
50
0
5
10
15
20
25
time

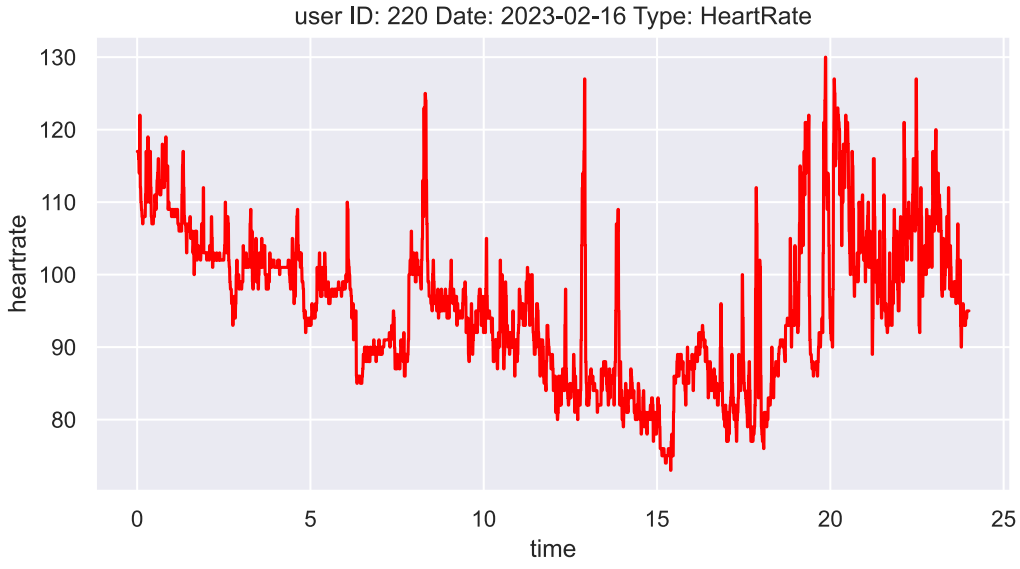

user ID: 220 Date: 2023-02-11 Type: HeartRate
heartrate
92
90
88
86
84
82
80
78
23.0
23.2
23.4
23.6
23.8
24.0
time

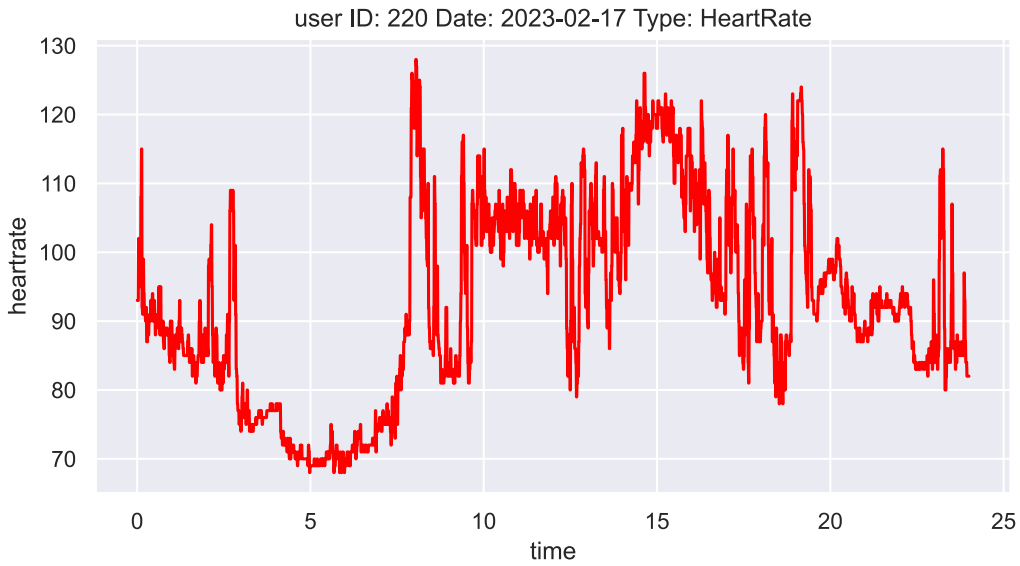

user ID: 220 Date: 2023-02-12 Type: HeartRate
heartrate
120
110
100
90
80
70
0
5
10
15
20
25
time

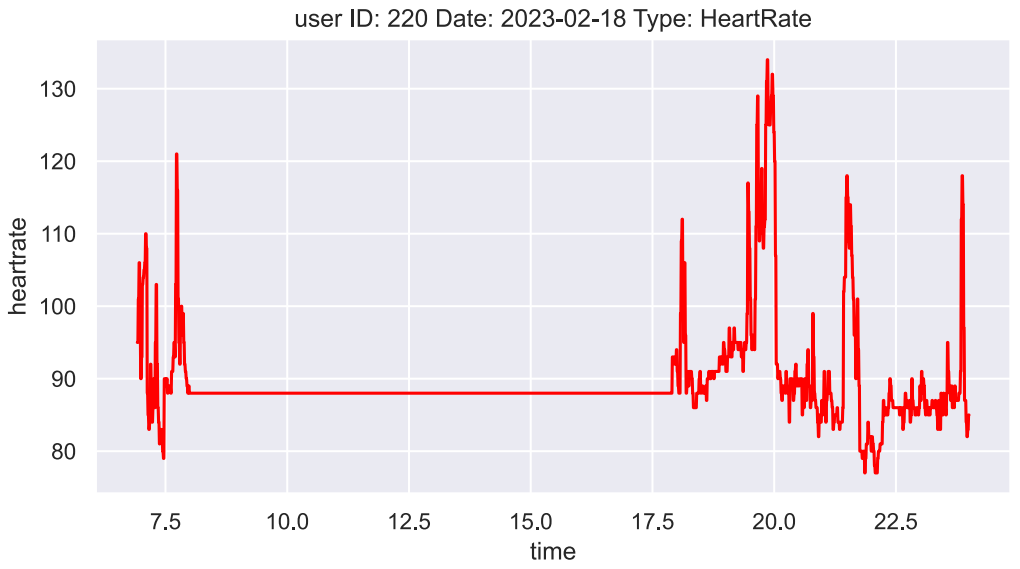

user ID: 220 Date: 2023-02-13 Type: HeartRate
heartrate
140
130
120
110
100
90
80
70
0
5
10
15
20
25
time

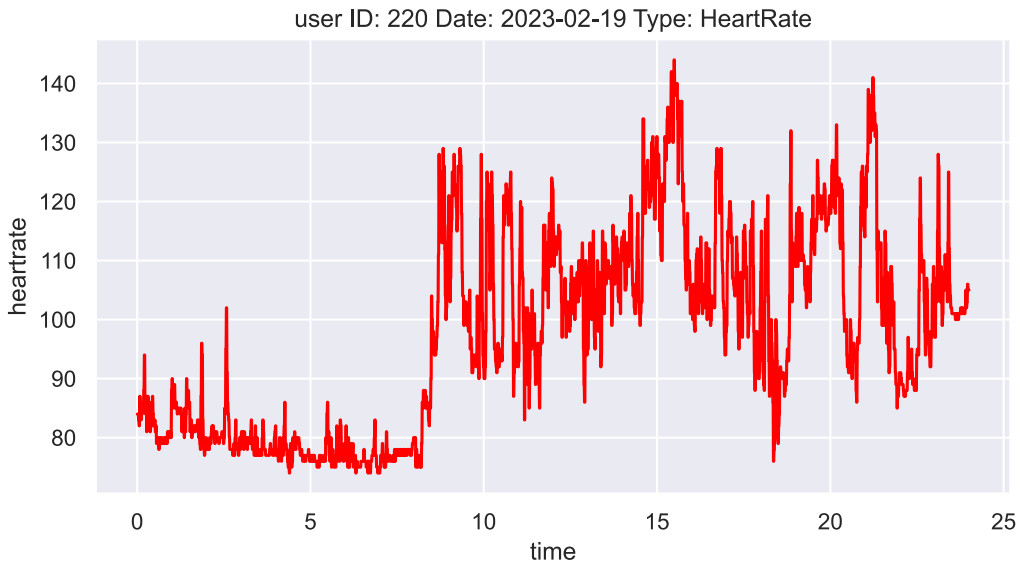

user ID: 220 Date: 2023-02-14 Type: HeartRate
heartrate
110
100
90
80
70
20
21
22
23
24
time

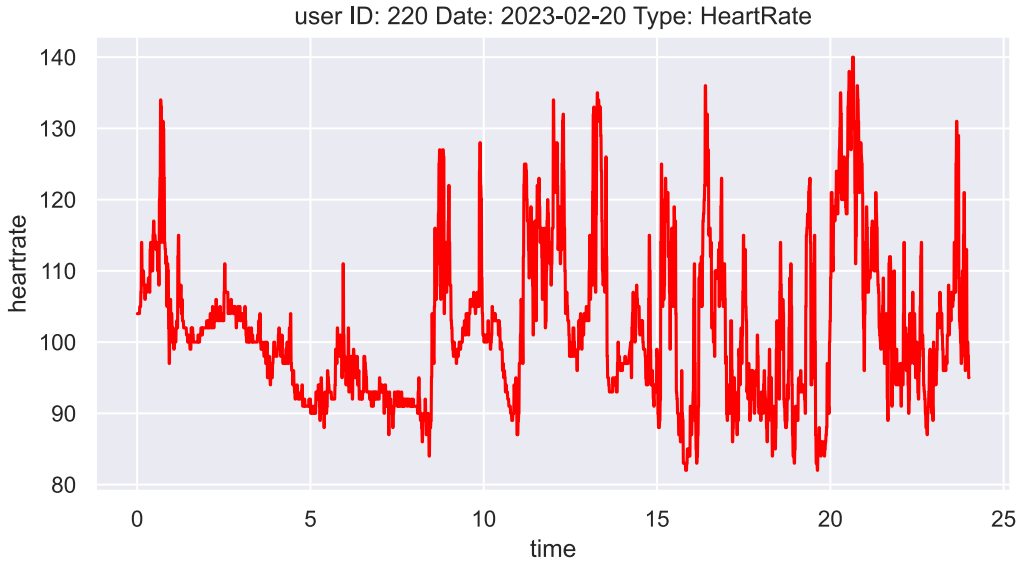

user ID: 220 Date: 2023-02-15 Type: HeartRate
heartrate
140
120
100
80
0
5
10
15
20
25
time

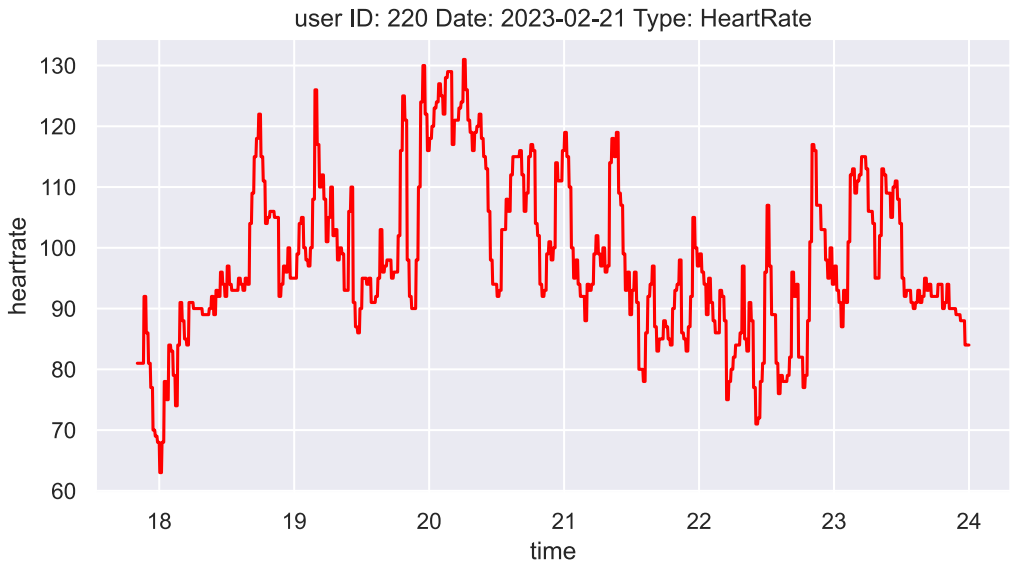

user ID: 220 Date: 2023-02-16 Type: HeartRate
heartrate
130
120
110
100
90
80
0
5
10
15
20
25
time

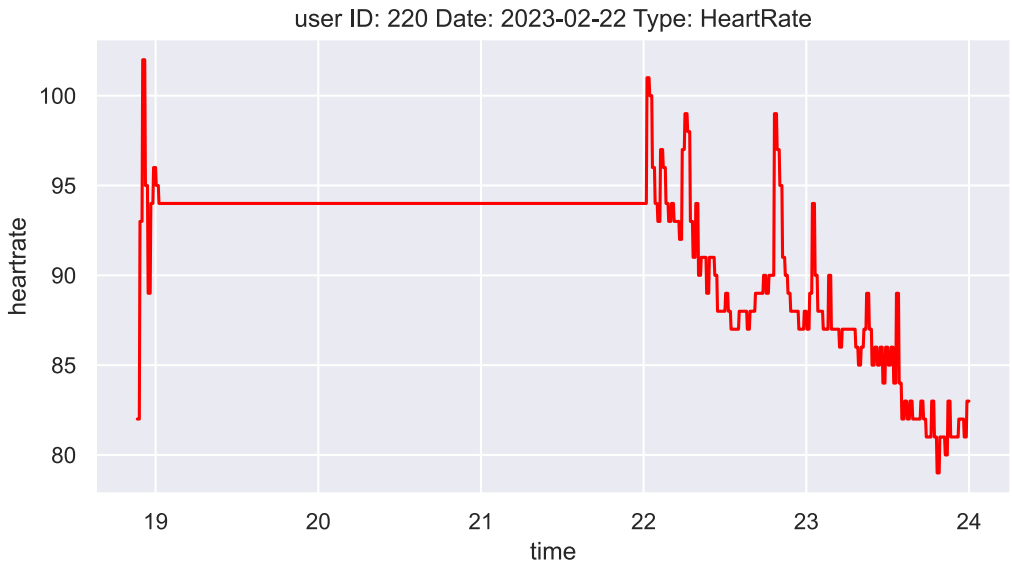

user ID: 220 Date: 2023-02-17 Type: HeartRate
heartrate
130
120
110
100
90
80
70
0
5
10
15
20
25
time

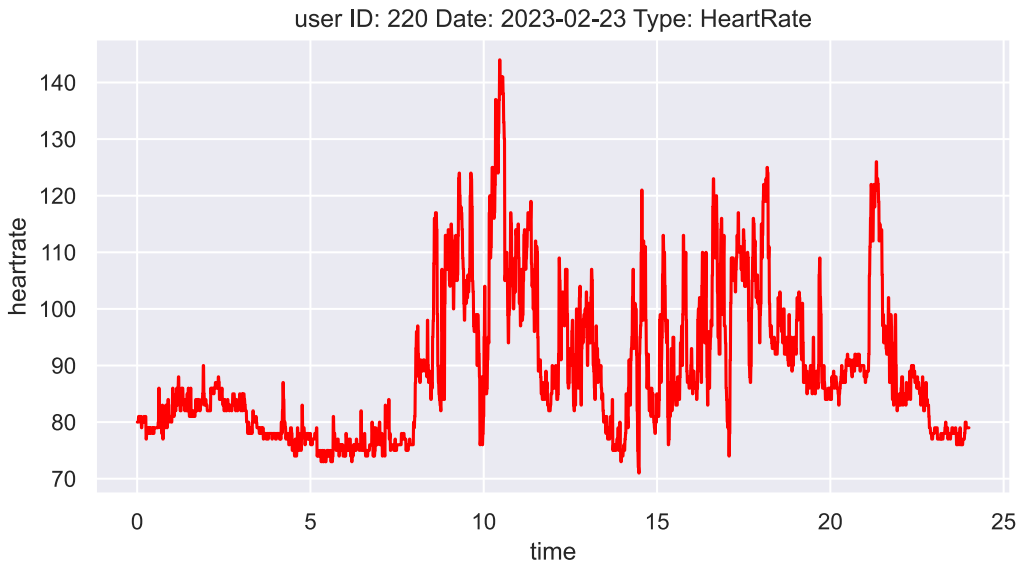

user ID: 220 Date: 2023-02-18 Type: HeartRate
heartrate
130
120
110
100
90
80
7.5
10.0
12.5
15.0
17.5
20.0
22.5
time

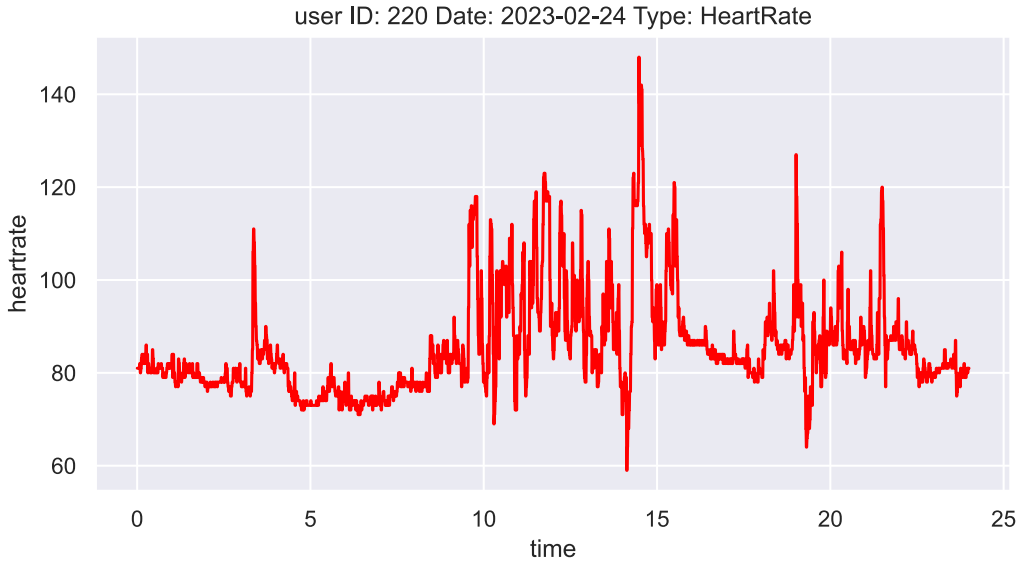

user ID: 220 Date: 2023-02-19 Type: HeartRate
heartrate
140
130
120
110
100
90
80
0
5
10
15
20
25
time

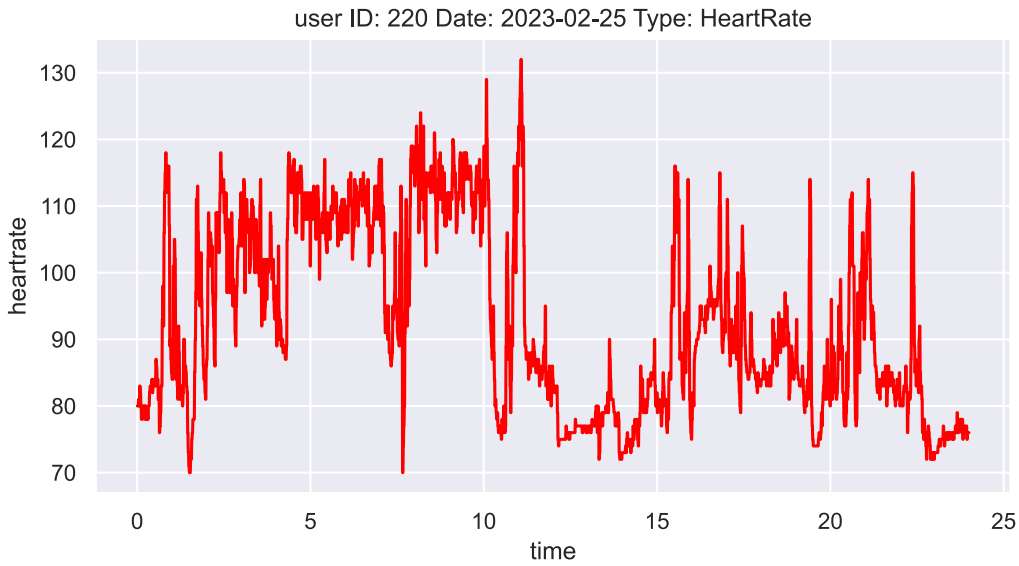

user ID: 220 Date: 2023-02-20 Type: HeartRate
heartrate
140
130
120
110
100
90
80
0
5
10
15
20
25
time

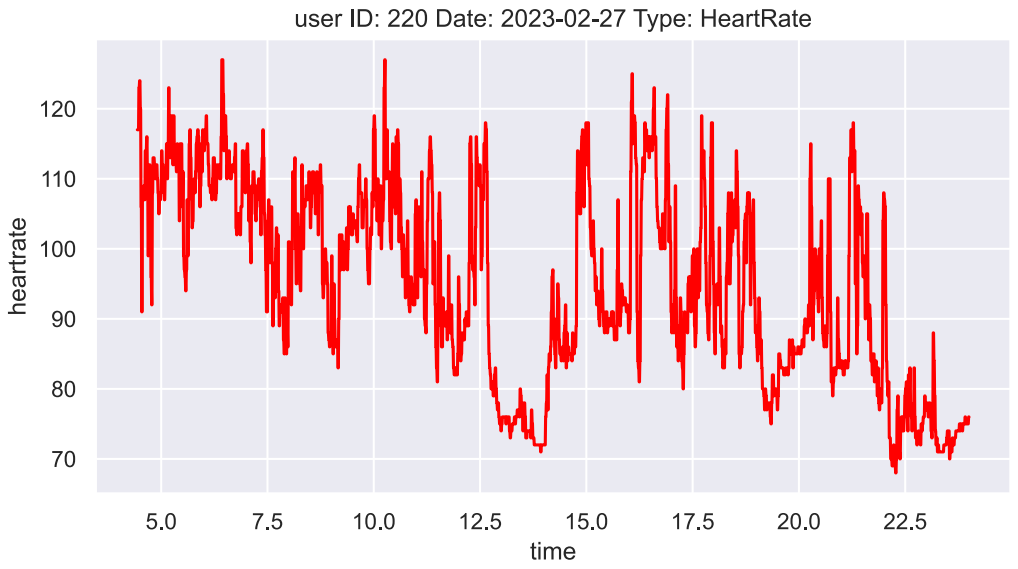

user ID: 220 Date: 2023-02-21 Type: HeartRate
heartrate
130
120
110
100
90
80
70
60
18
19
20
21
22
23
24
time

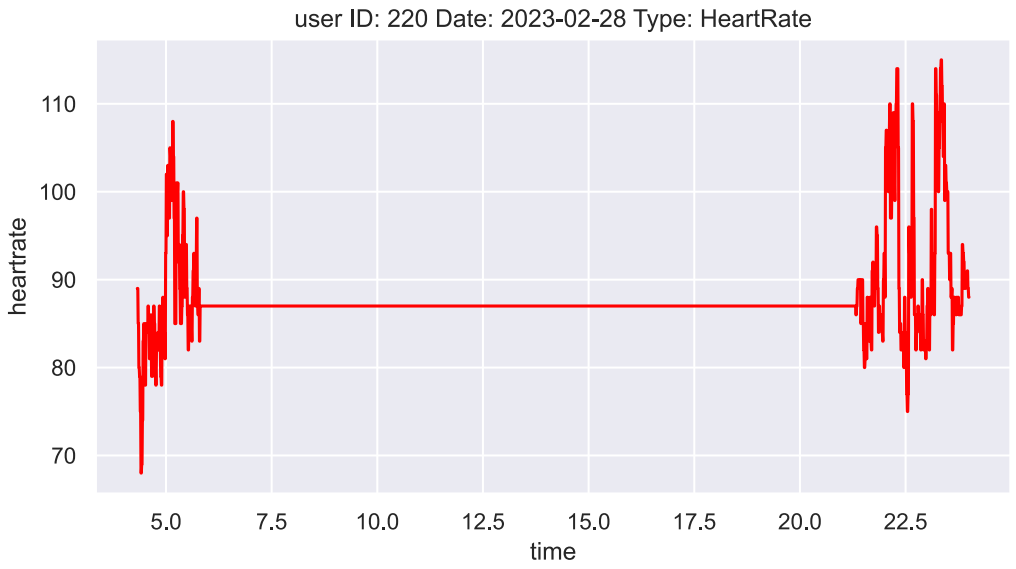

user ID: 220 Date: 2023-02-22 Type: HeartRate
heartrate
100
95
90
85
80
19
20
21
22
23
24
time

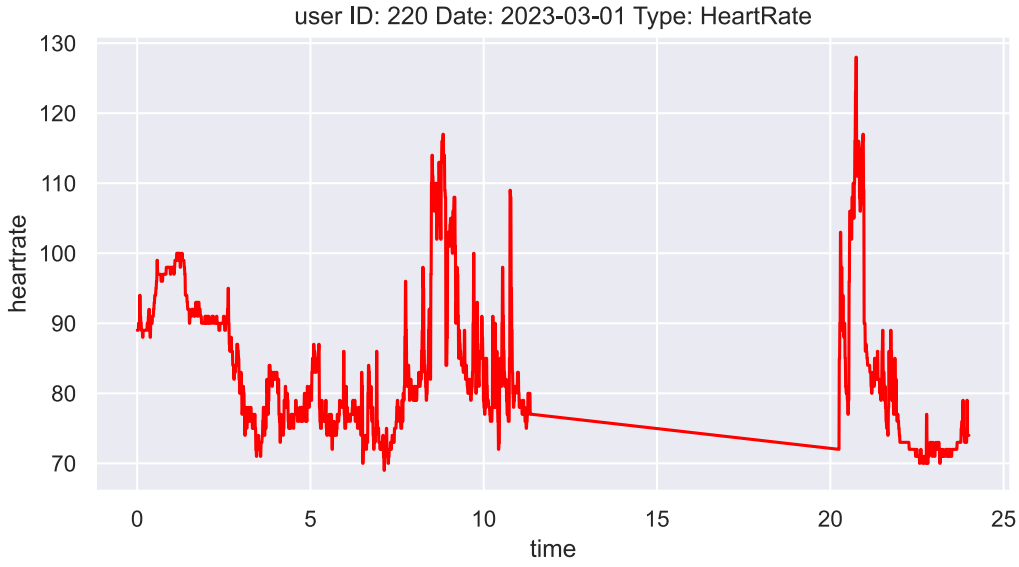

user ID: 220 Date: 2023-02-23 Type: HeartRate
heartrate
140
130
120
110
100
90
80
70
0
5
10
15
20
25
time

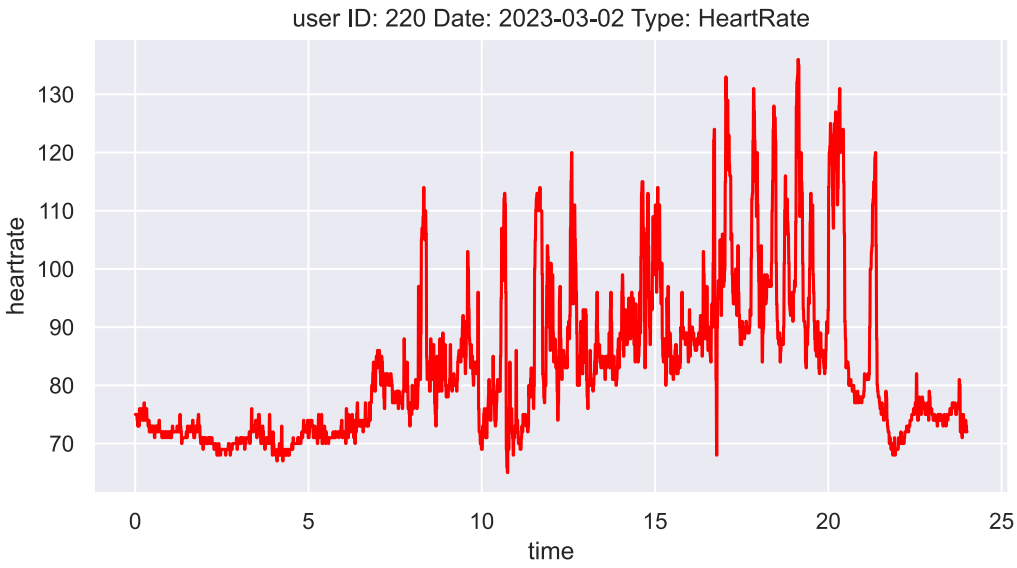

user ID: 220 Date: 2023-02-24 Type: HeartRate
heartrate
140
120
100
80
60
0
5
10
15
20
25
time

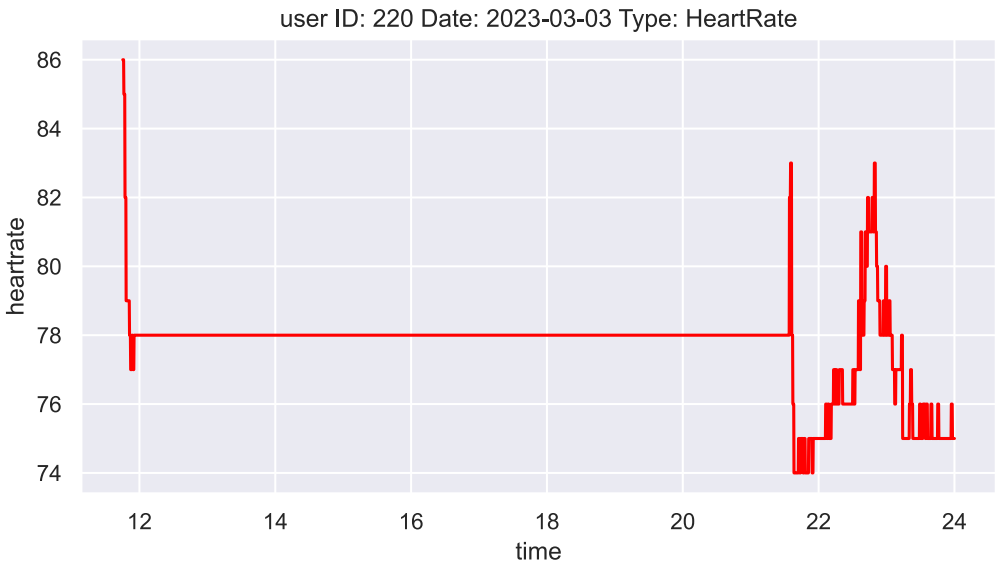

user ID: 220 Date: 2023-02-25 Type: HeartRate
heartrate
130
120
110
100
90
80
70
0
5
10
15
20
25
time

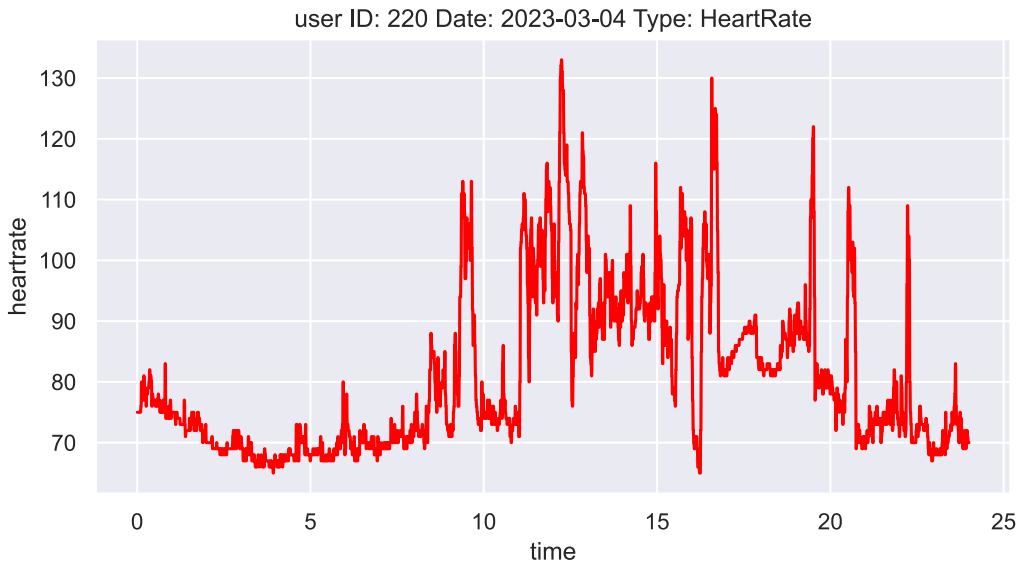

user ID: 220 Date: 2023-02-27 Type: HeartRate
heartrate
120
110
100
90
80
70
5.0
7.5
10.0
12.5
15.0
17.5
20.0
22.5
time

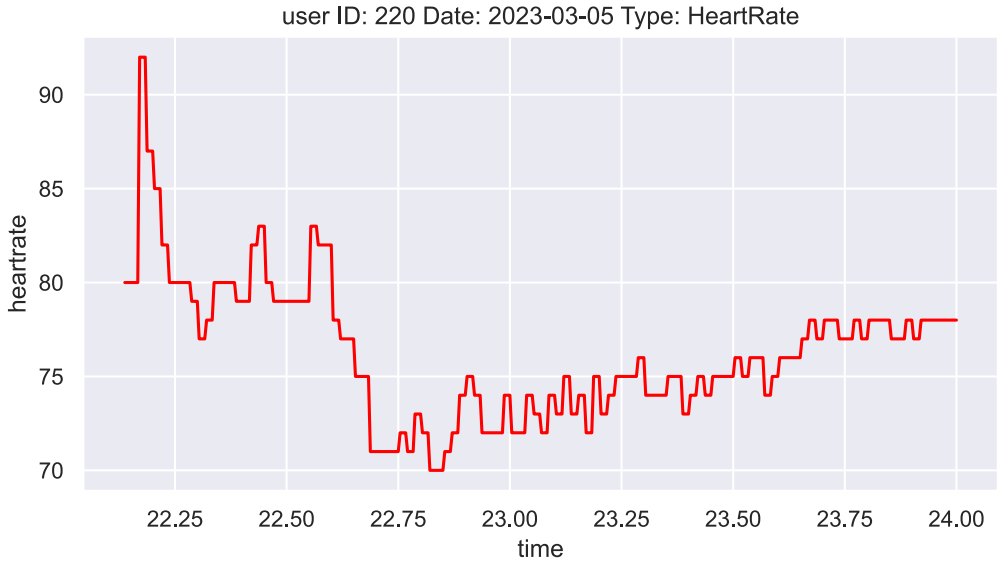

user ID: 220 Date: 2023-02-28 Type: HeartRate
heartrate
110
100
90
80
70
5.0
7.5
10.0
12.5
15.0
17.5
20.0
22.5
time

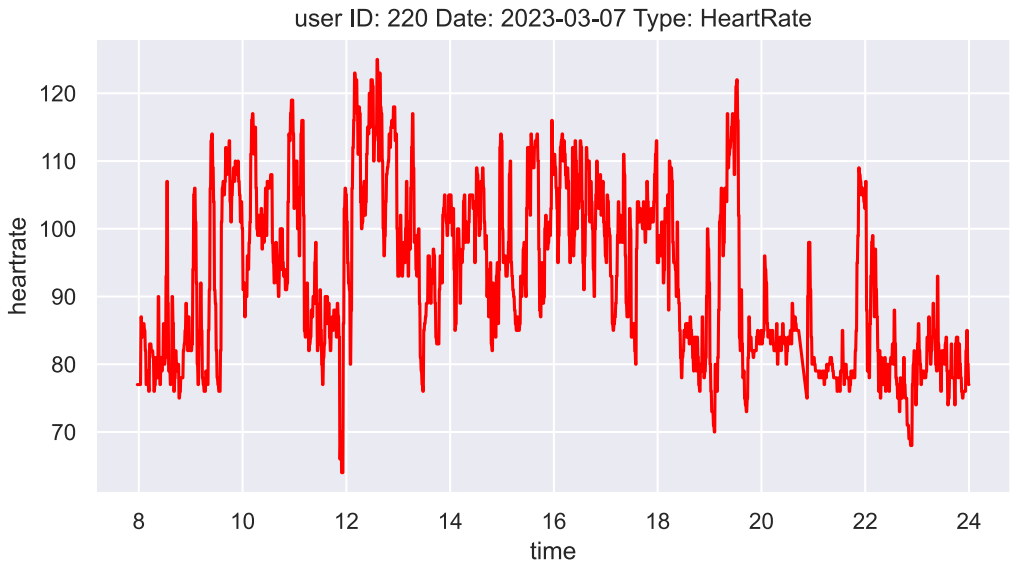

user ID: 220 Date: 2023-03-01 Type: HeartRate
heartrate
130
120
110
100
90
80
70
0
5
10
15
20
25
time

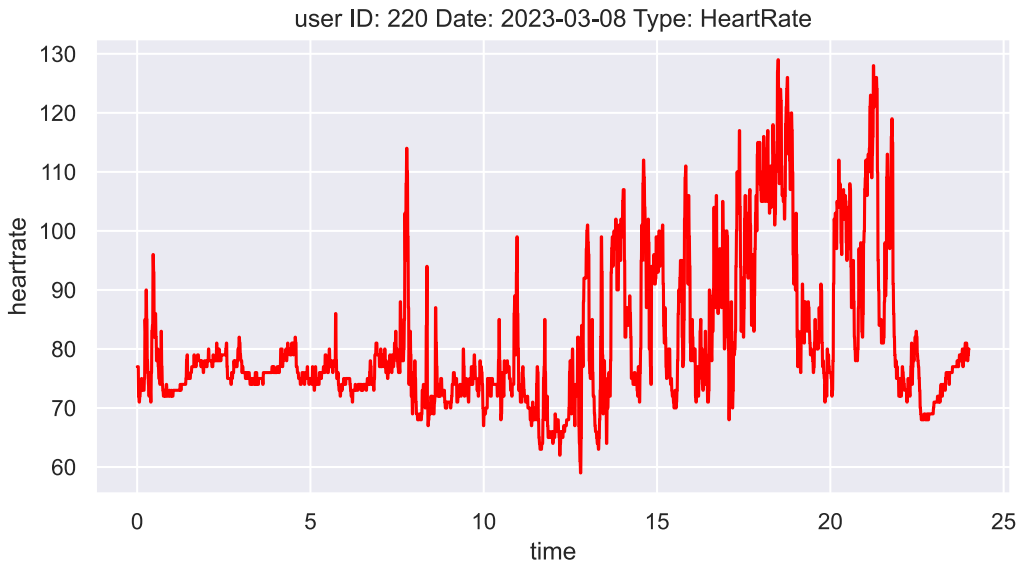

user ID: 220 Date: 2023-03-02 Type: HeartRate
heartrate
130
120
110
100
90
80
70
0
5
10
15
20
25
time

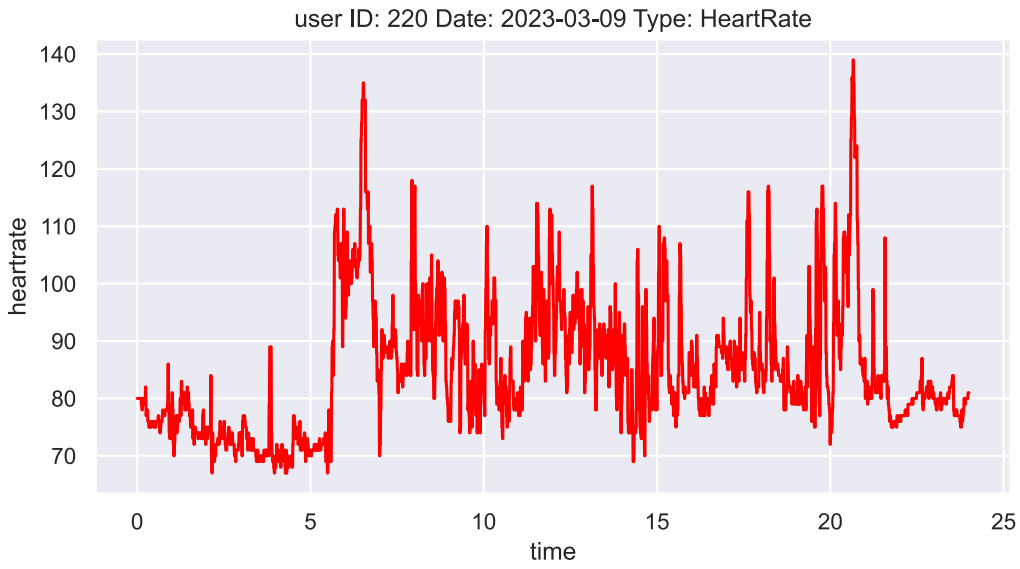

user ID: 220 Date: 2023-03-03 Type: HeartRate
heartrate
86
84
82
80
78
76
74
12
14
16
18
20
22
24
time

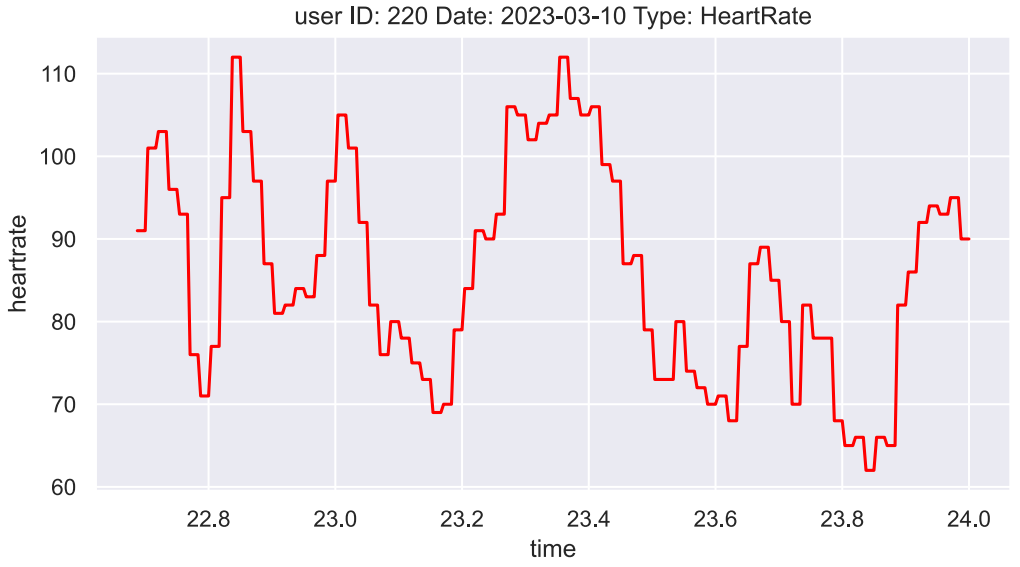

user ID: 220 Date: 2023-03-04 Type: HeartRate
heartrate
130
120
110
100
90
80
70
0
5
10
15
20
25
time

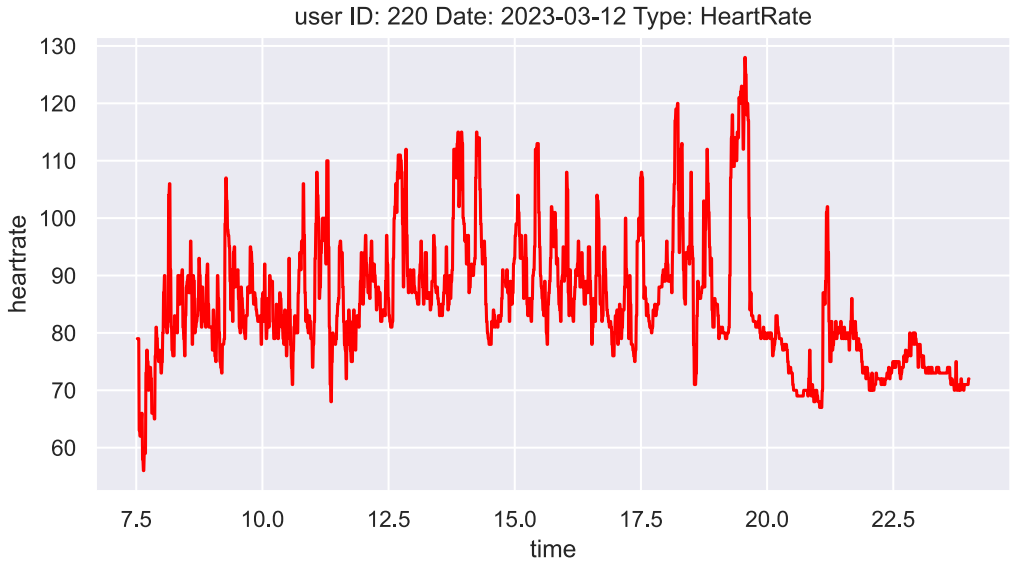

user ID: 220 Date: 2023-03-05 Type: HeartRate
heartrate
90
85
80
75
70
22.25
22.50
22.75
23.00
23.25
23.50
23.75
24.00
time

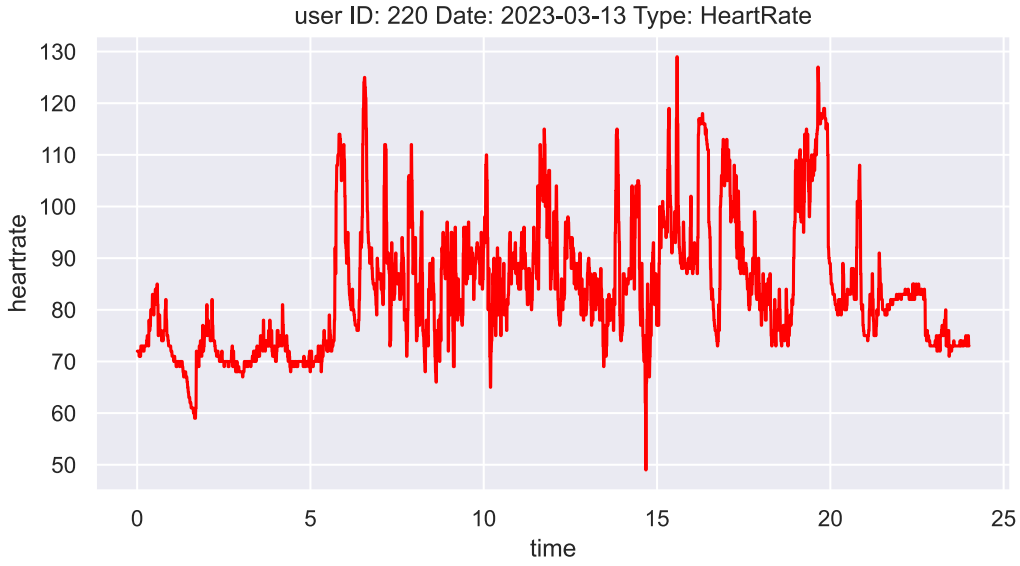

user ID: 220 Date: 2023-03-07 Type: HeartRate
heartrate
120
110
100
90
80
70
8
10
12
14
16
18
20
22
24
time

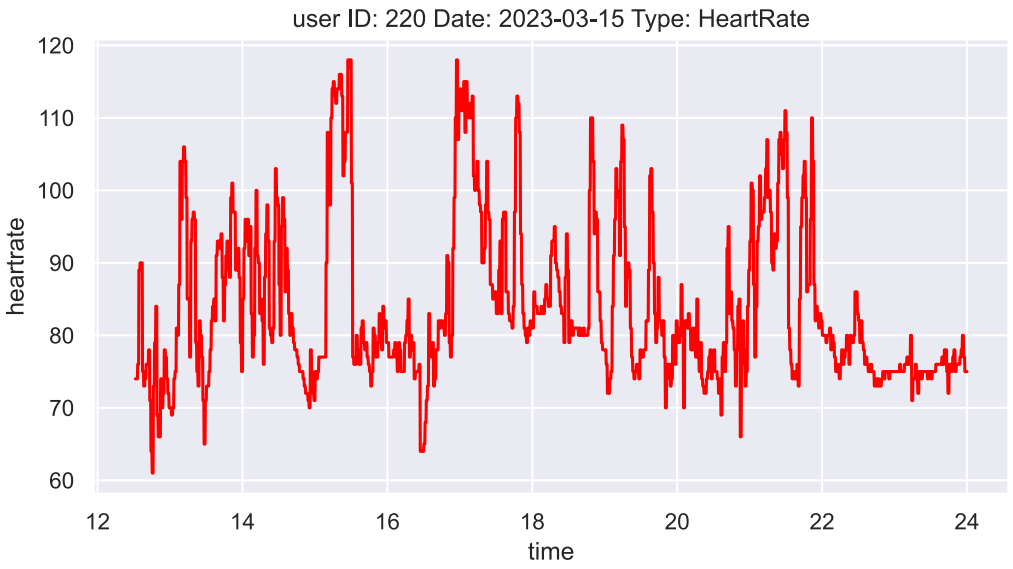

user ID: 220 Date: 2023-03-08 Type: HeartRate
heartrate
130
120
110
100
90
80
70
60
0
5
10
15
20
25
time

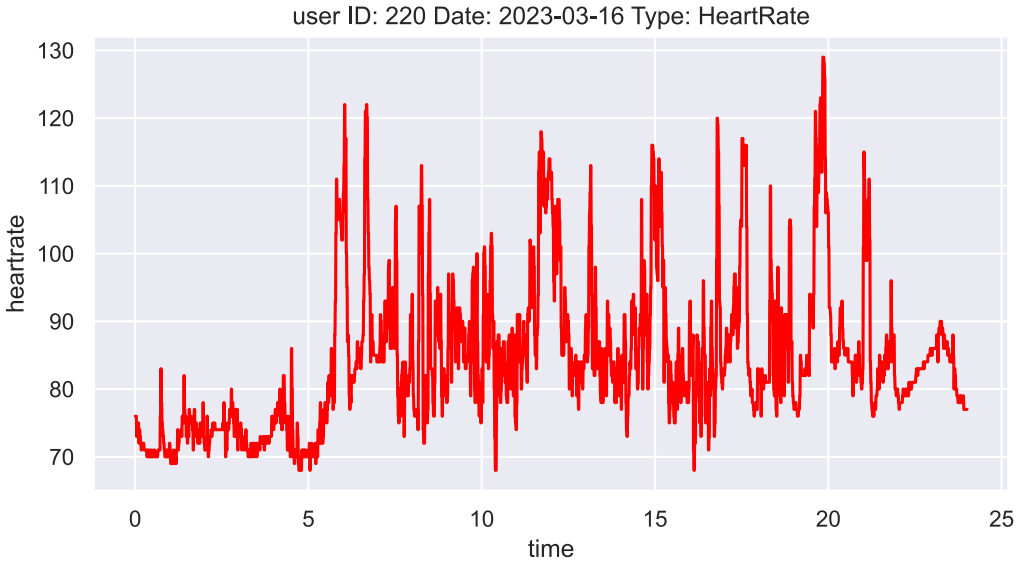

user ID: 220 Date: 2023-03-09 Type: HeartRate
heartrate
140
130
120
110
100
90
80
70
0
5
10
15
20
25
time

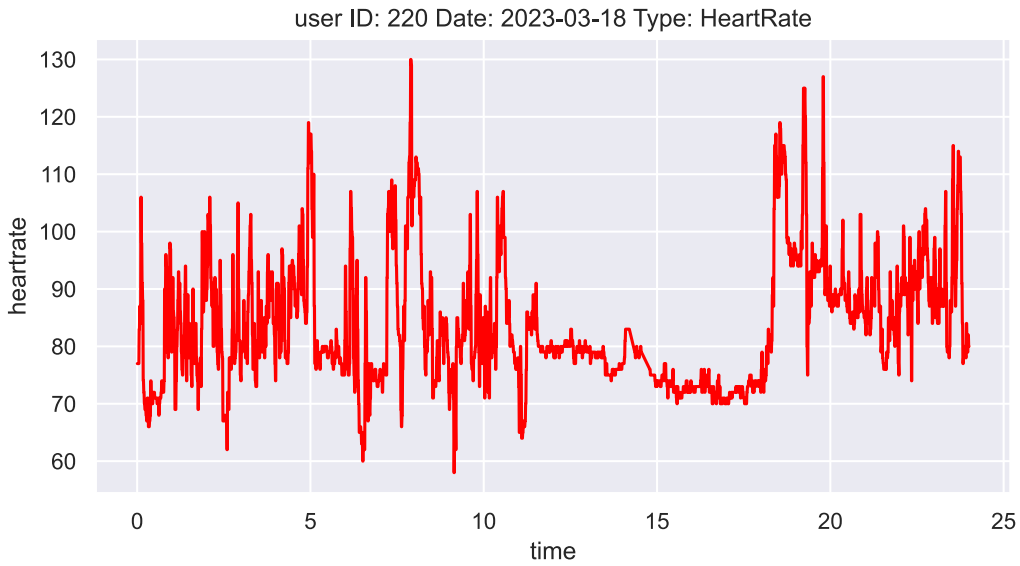

user ID: 220 Date: 2023-03-10 Type: HeartRate
heartrate
110
100
90
80
70
60
22.8
23.0
23.2
23.4
23.6
23.8
24.0
time

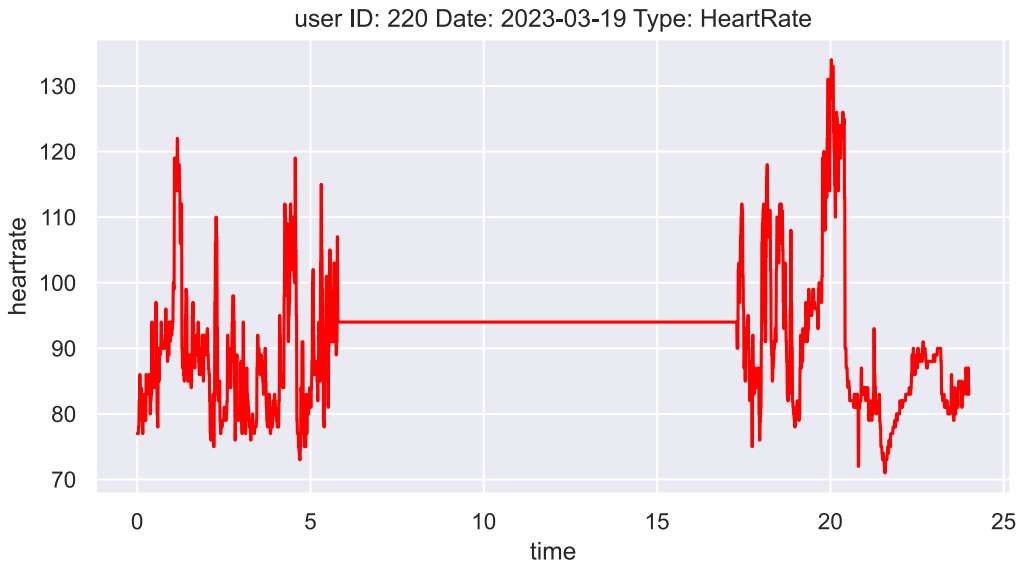

user ID: 220 Date: 2023-03-12 Type: HeartRate
heartrate
130
120
110
100
90
80
70
60
7.5
10.0
12.5
15.0
17.5
20.0
22.5
time

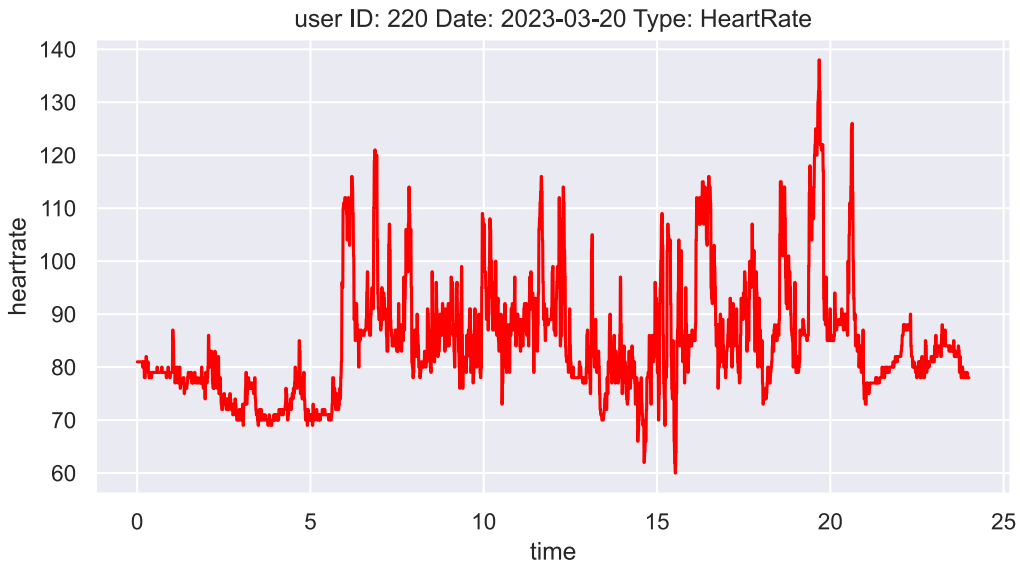

user ID: 220 Date: 2023-03-13 Type: HeartRate
heartrate
130
120
110
100
90
80
70
60
50
0
5
10
15
20
25
time

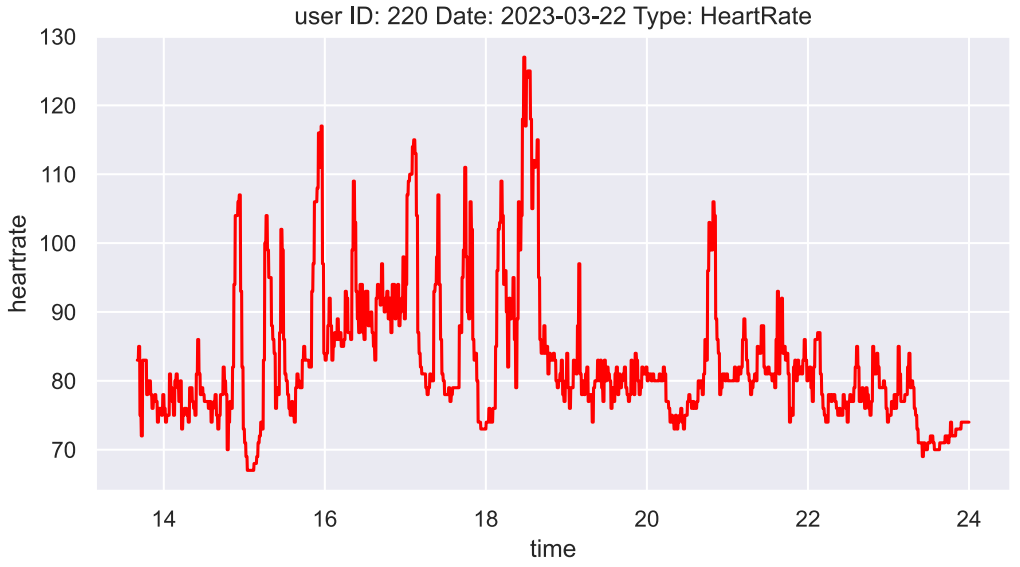

user ID: 220 Date: 2023-03-15 Type: HeartRate
heartrate
time
120
110
100
90
80
70
60
12
14
16
18
20
22
24

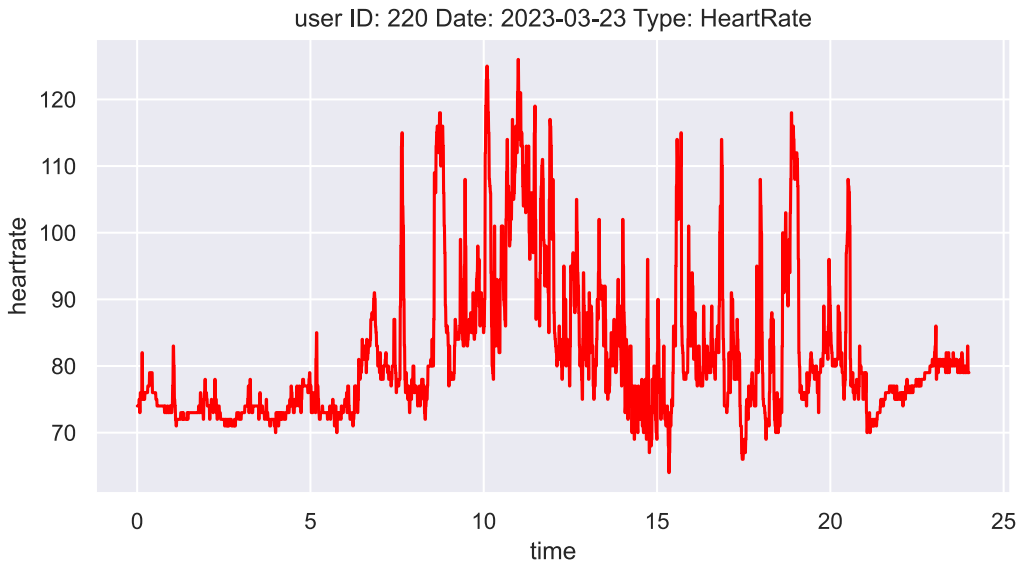

user ID: 220 Date: 2023-03-16 Type: HeartRate
heartrate
time
130
120
110
100
90
80
70
0
5
10
15
20
25

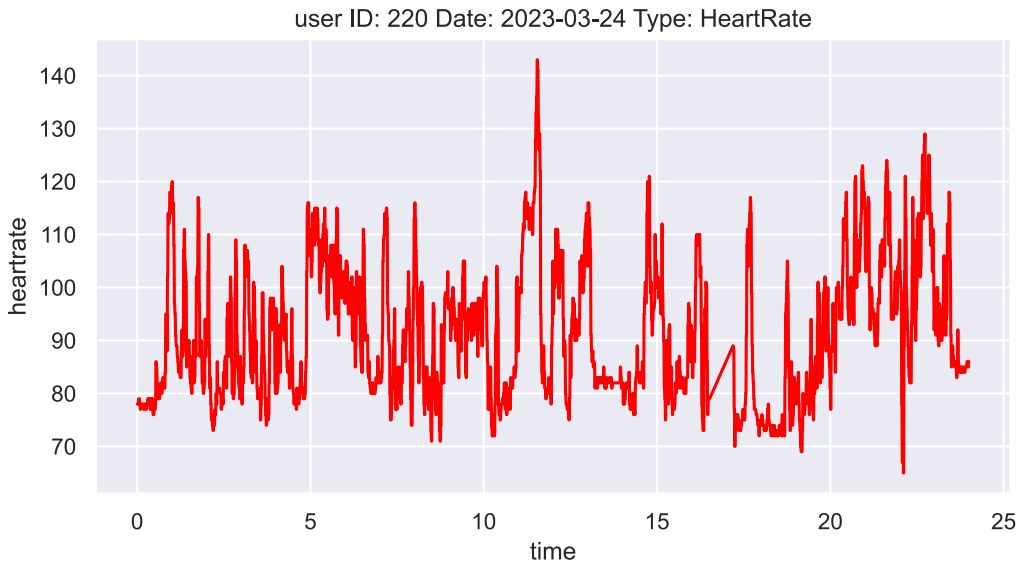

user ID: 220 Date: 2023-03-18 Type: HeartRate
heartrate
130
120
110
100
90
80
70
60
0
5
10
15
20
25
time

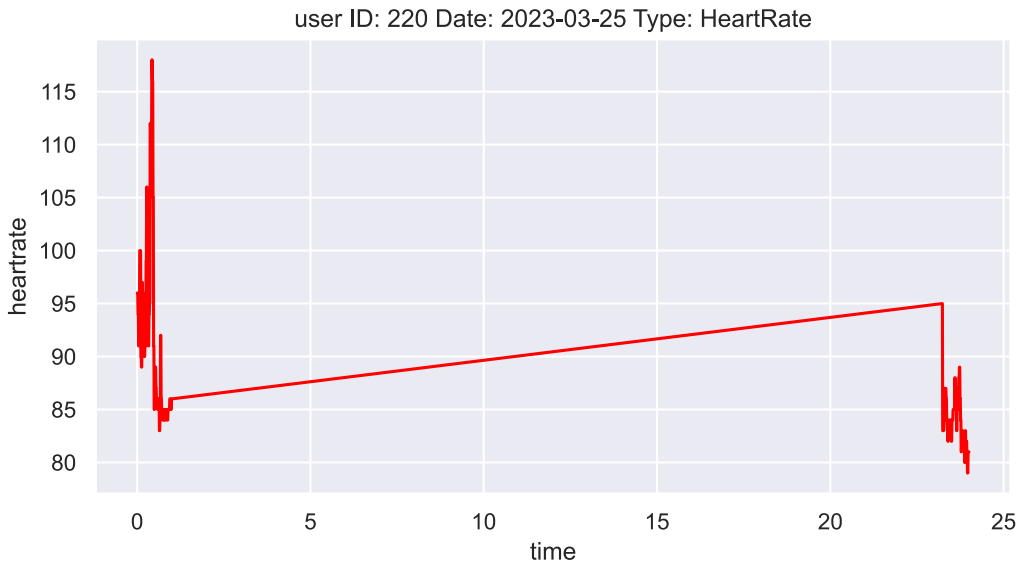

user ID: 220 Date: 2023-03-19 Type: HeartRate
heartrate
130
120
110
100
90
80
70
0
5
10
15
20
25
time

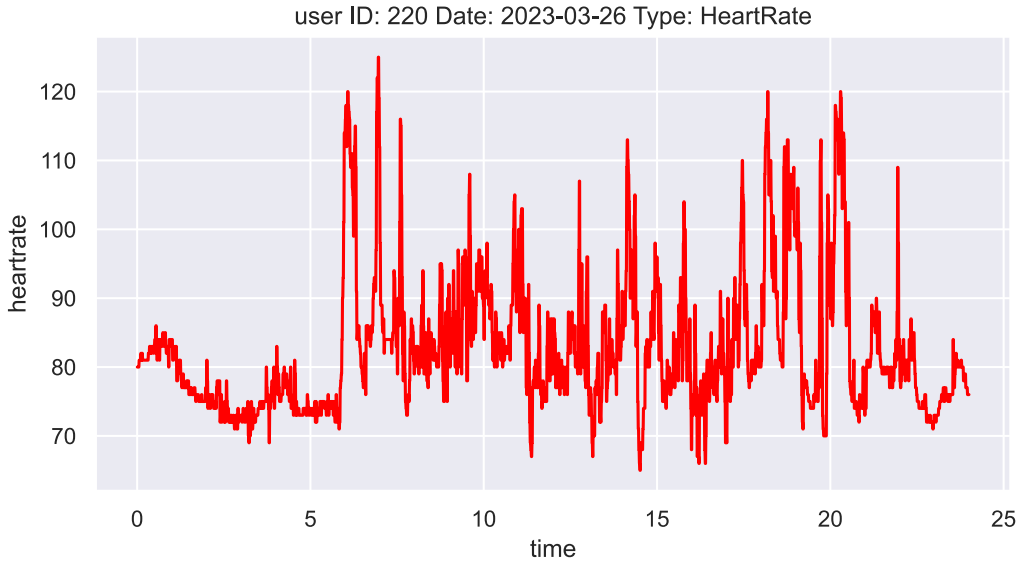

user ID: 220 Date: 2023-03-20 Type: HeartRate
heartrate
time
140
130
120
110
100
90
80
70
60
0
5
10
15
20
25

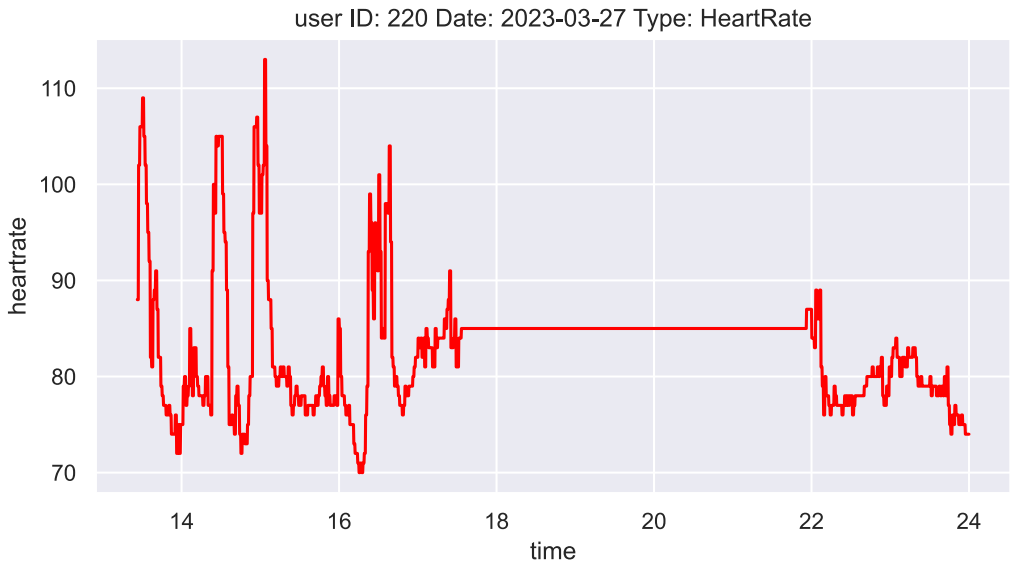

user ID: 220 Date: 2023-03-22 Type: HeartRate
heartrate
time
130
120
110
100
90
80
70
14
16
18
20
22
24

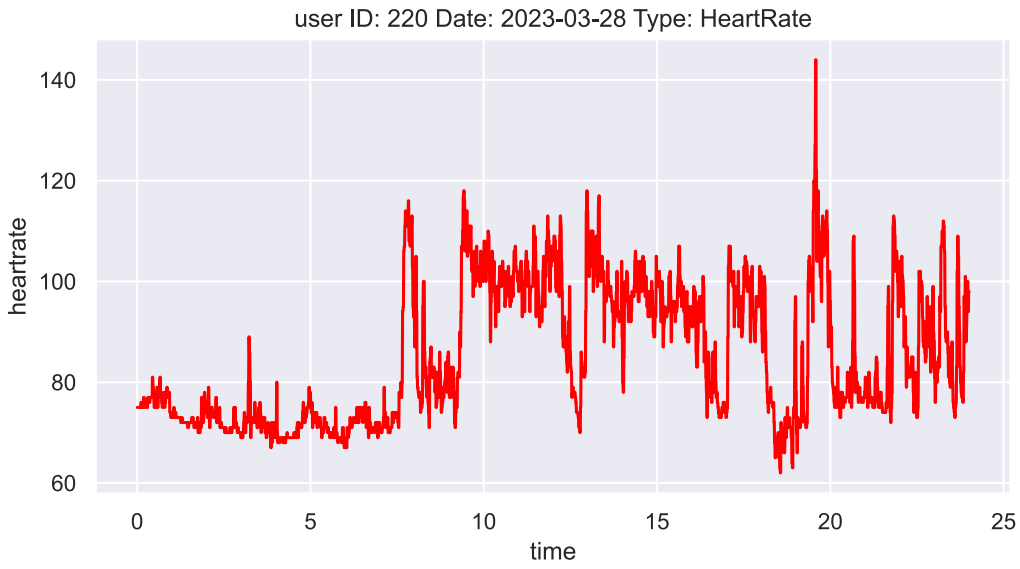

user ID: 220 Date: 2023-03-23 Type: HeartRate
heartrate
120
110
100
90
80
70
0
5
10
15
20
25
time

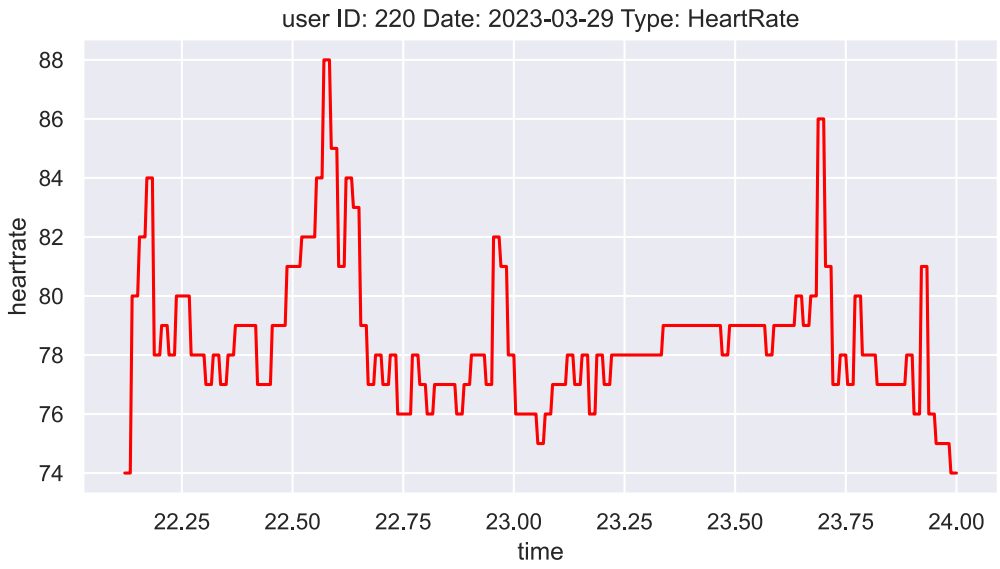

user ID: 220 Date: 2023-03-24 Type: HeartRate
heartrate
140
130
120
110
100
90
80
70
0
5
10
15
20
25
time


user ID: 220 Date: 2023-03-25 Type: HeartRate
heartrate
115
110
105
100
95
90
85
80
0
5
10
15
20
25
time


user ID: 220 Date: 2023-03-26 Type: HeartRate
heartrate
120
110
100
90
80
70
0
5
10
15
20
25
time


user ID: 220 Date: 2023-03-27 Type: HeartRate
heartrate
110
100
90
80
70
14
16
18
20
22
24
time


user ID: 220 Date: 2023-03-28 Type: HeartRate
heartrate
140
120
100
80
60
0
5
10
15
20
25
time


user ID: 220 Date: 2023-03-29 Type: HeartRate
heartrate
88
86
84
82
80
78
76
74
22.25
22.50
22.75
23.00
23.25
23.50
23.75
24.00
time

In [ ]: