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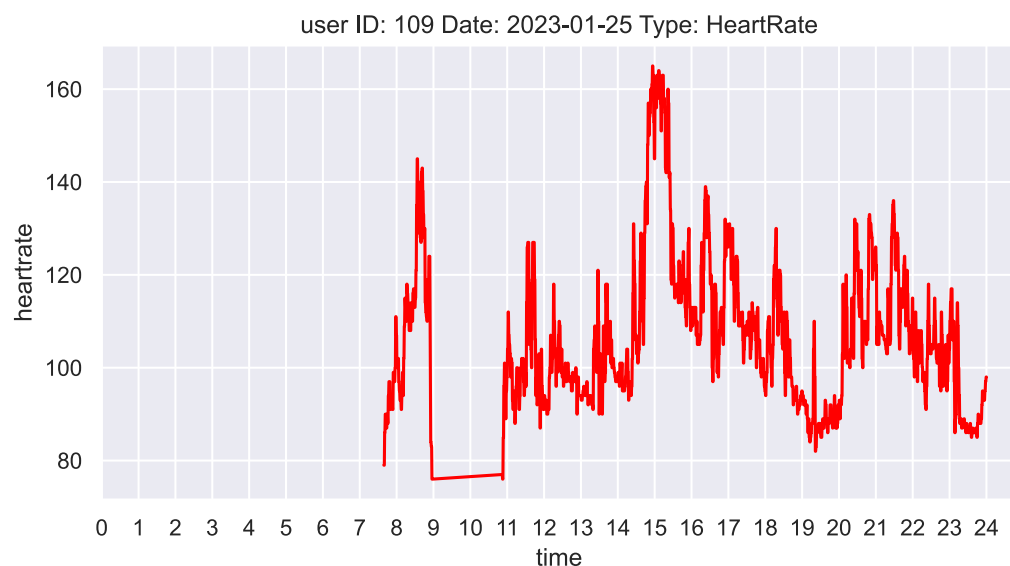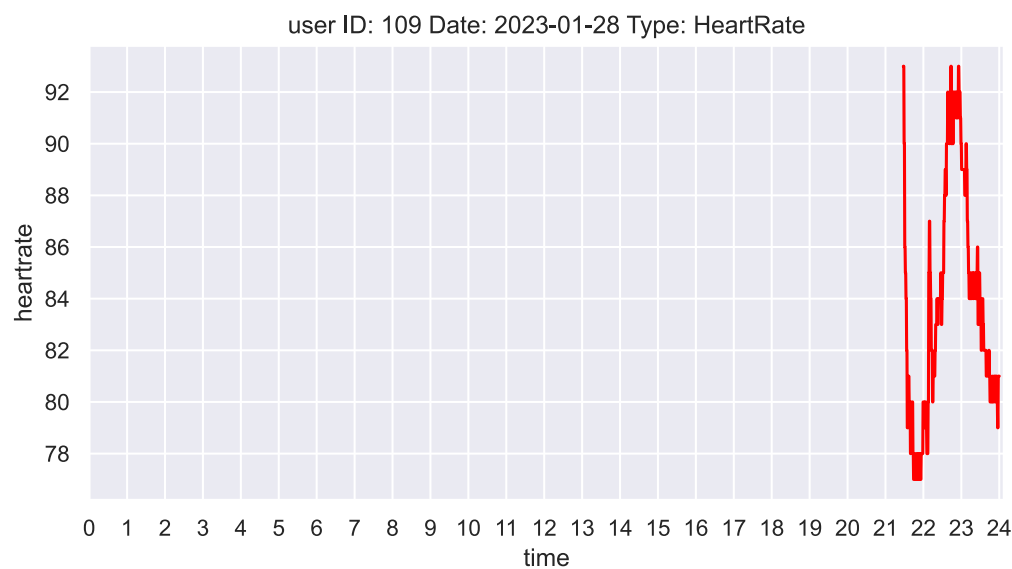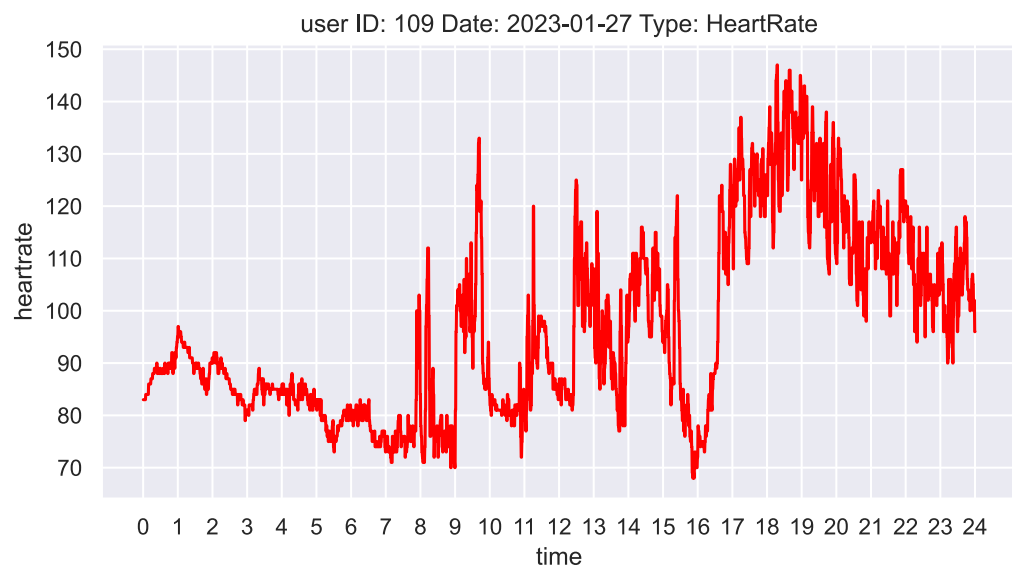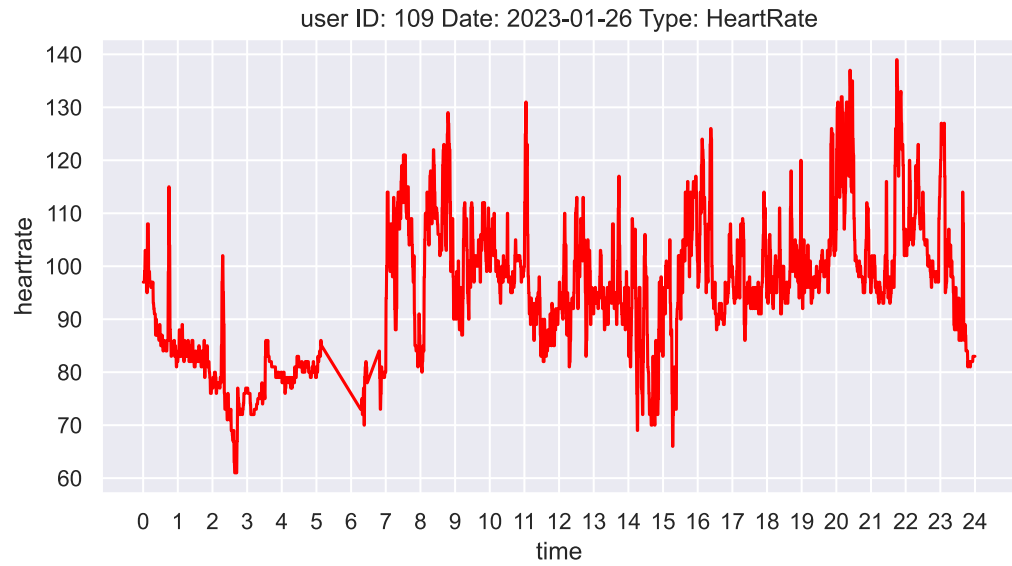
```
In [2]:  connector = sqlite3.connect("../Extras/graphs_data.db")
         cursor = connector.cursor()
```

Heart Rate graphs printer

```
In [8]:  cursor.execute("SELECT * FROM heartrate_graphs_data WHERE id=109")
         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)
                 # configurating axis "x" bins
                 plt.xticks(np.arange(0, 25, step=1))

                 plt.show()
```


user ID: 109 Date: 2023-01-25 Type: HeartRate

user ID: 109 Date: 2023-01-26 Type: HeartRate

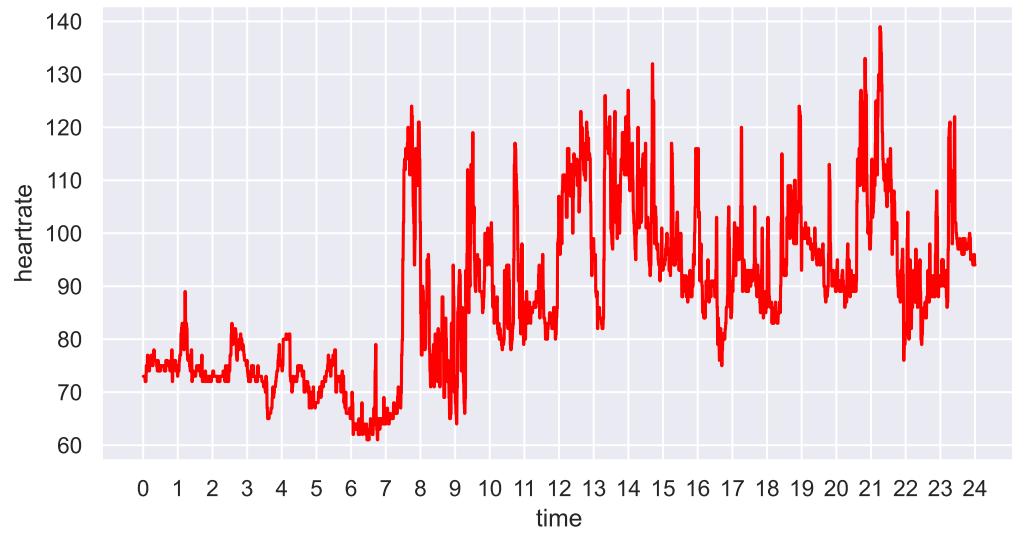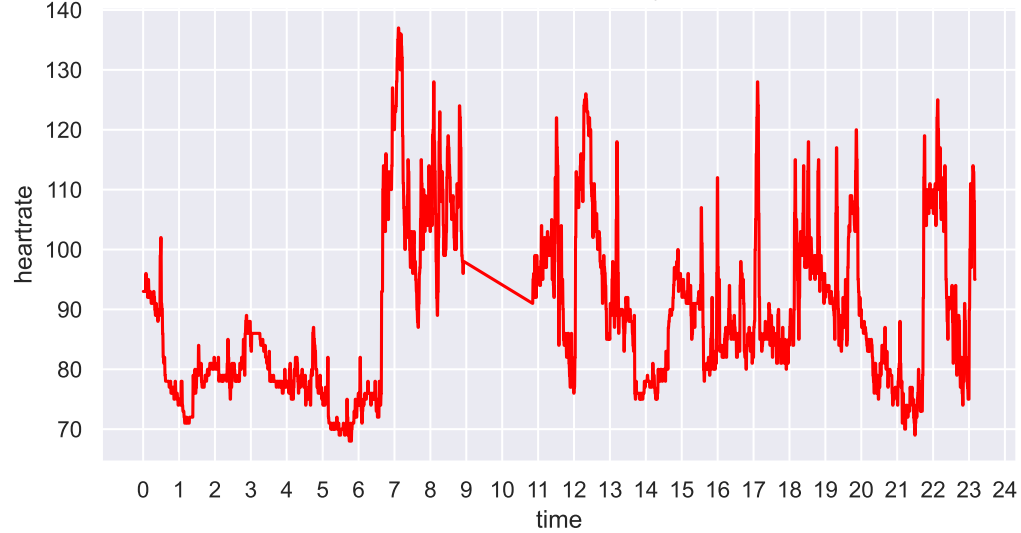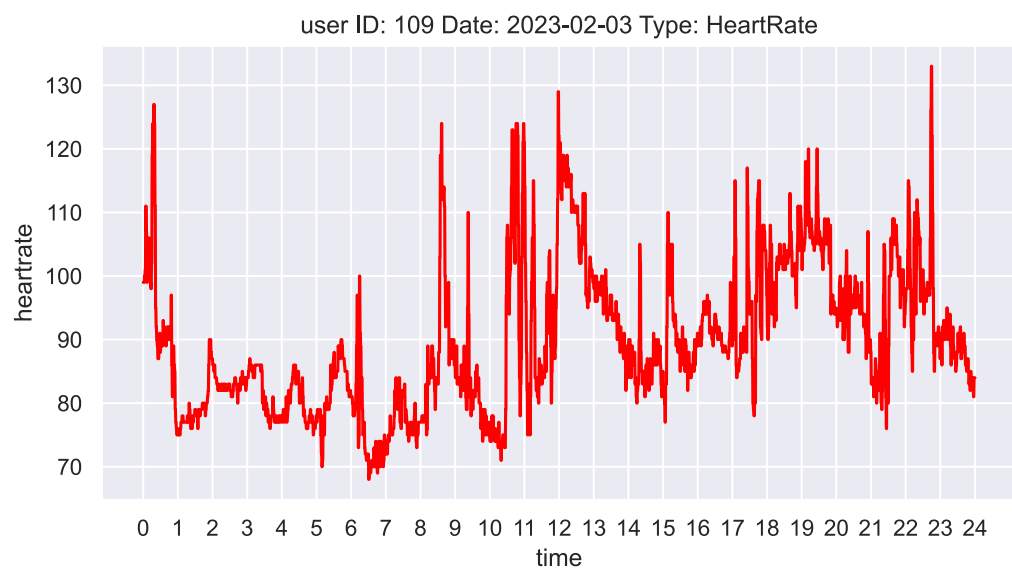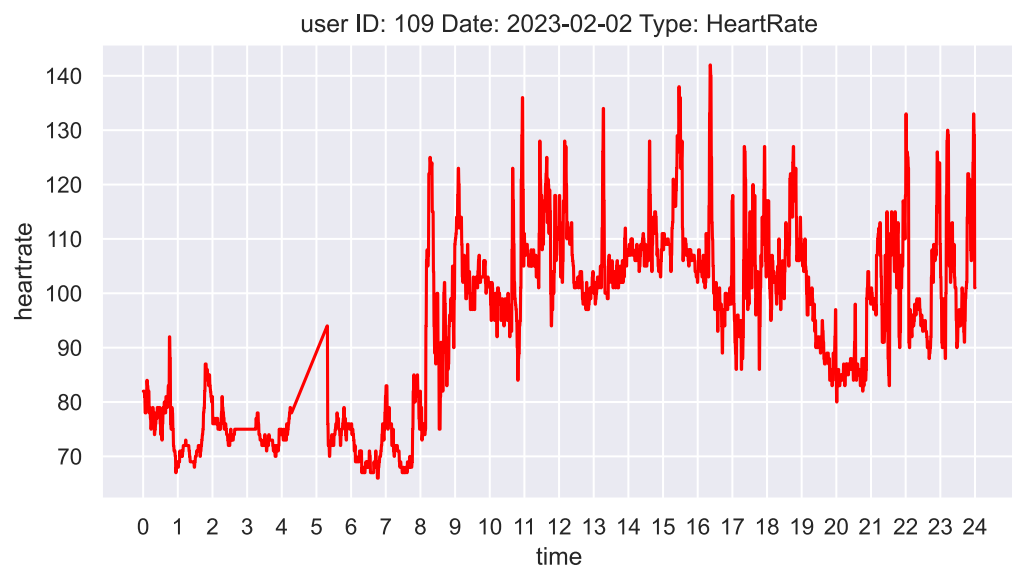user ID: 109 Date: 2023-01-27 Type: HeartRate

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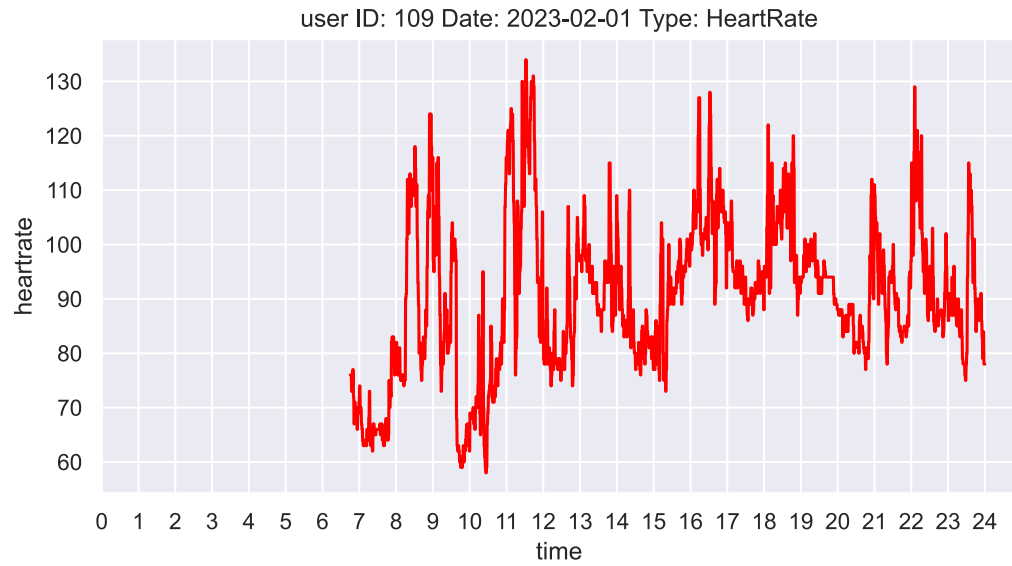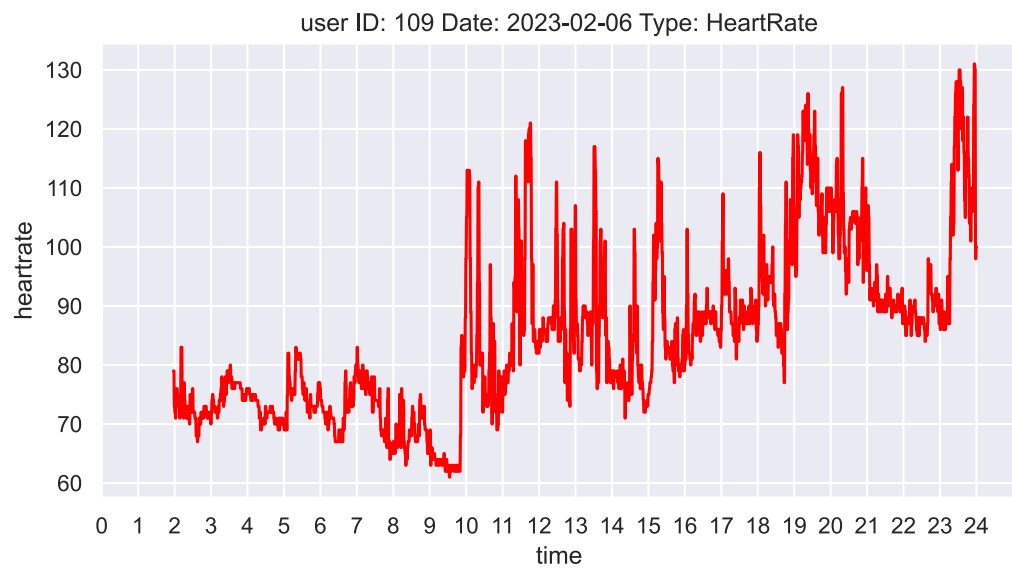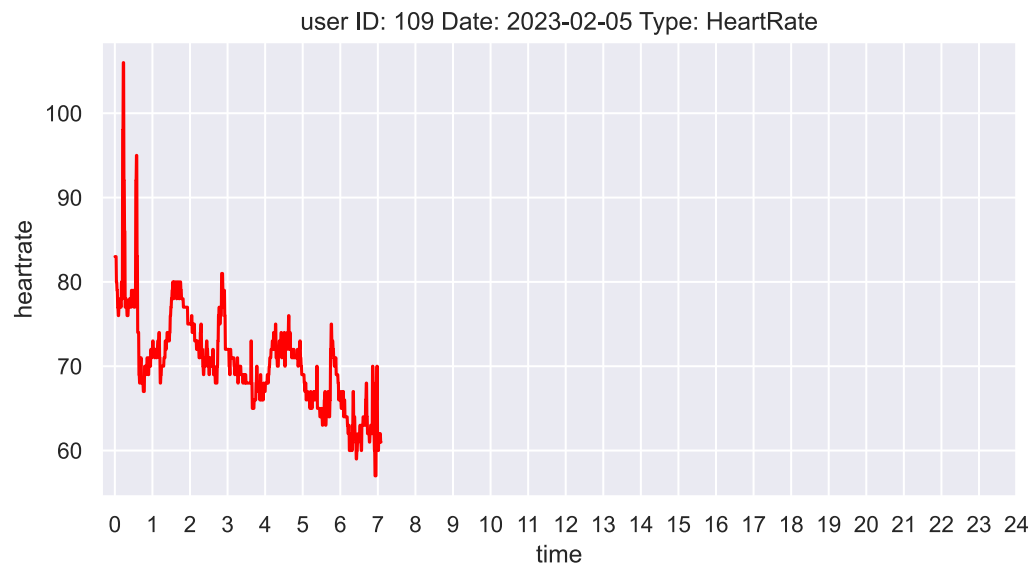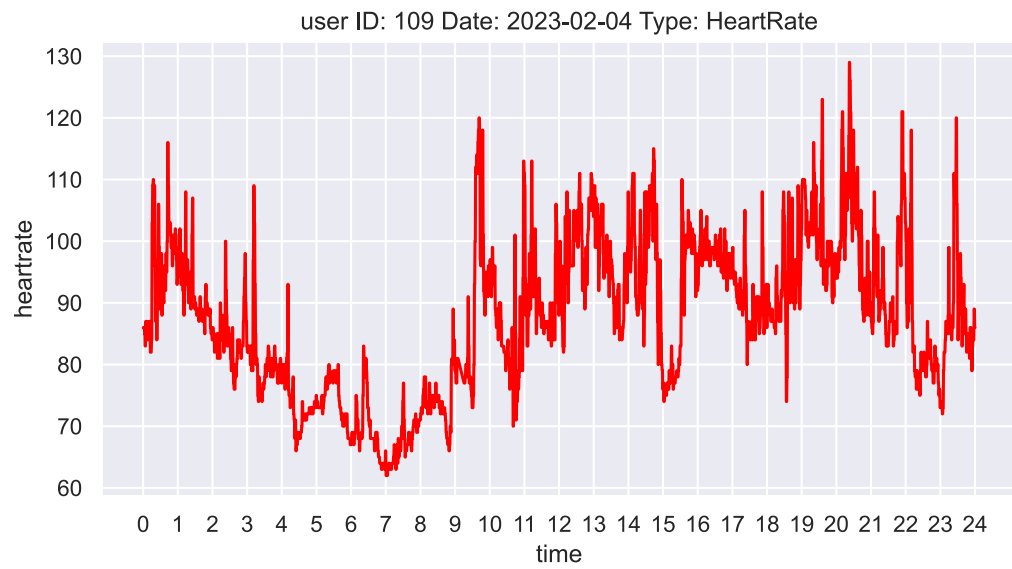
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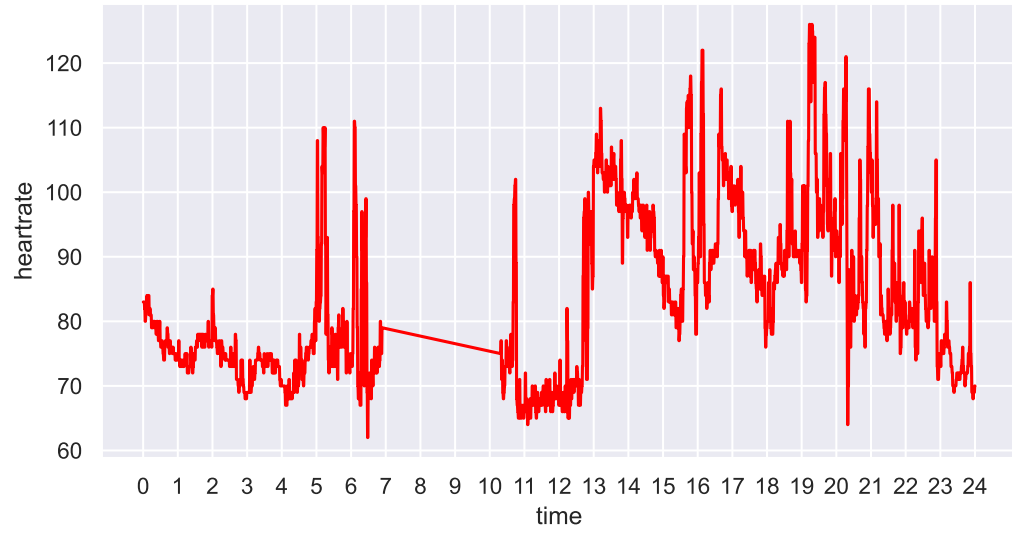
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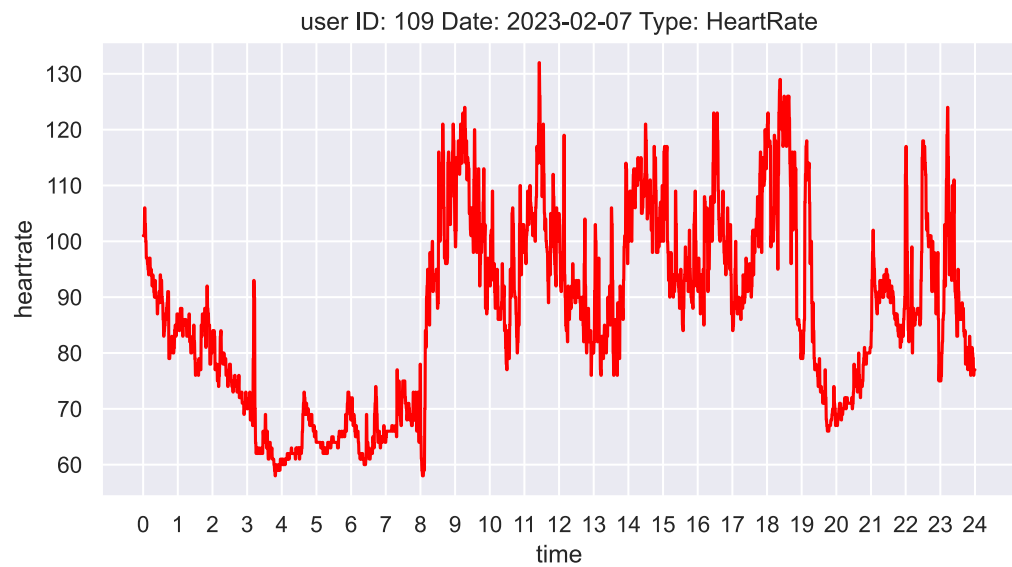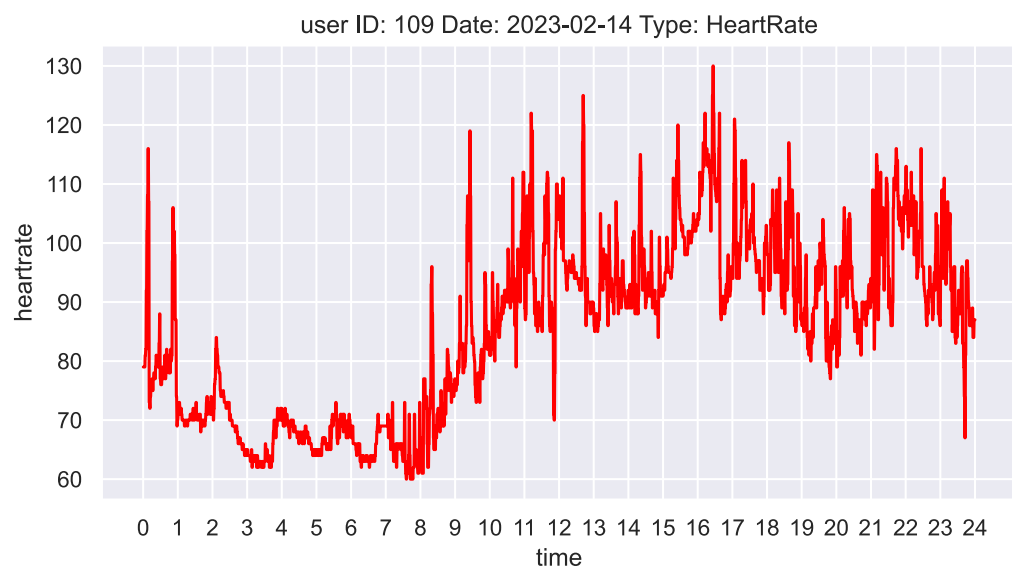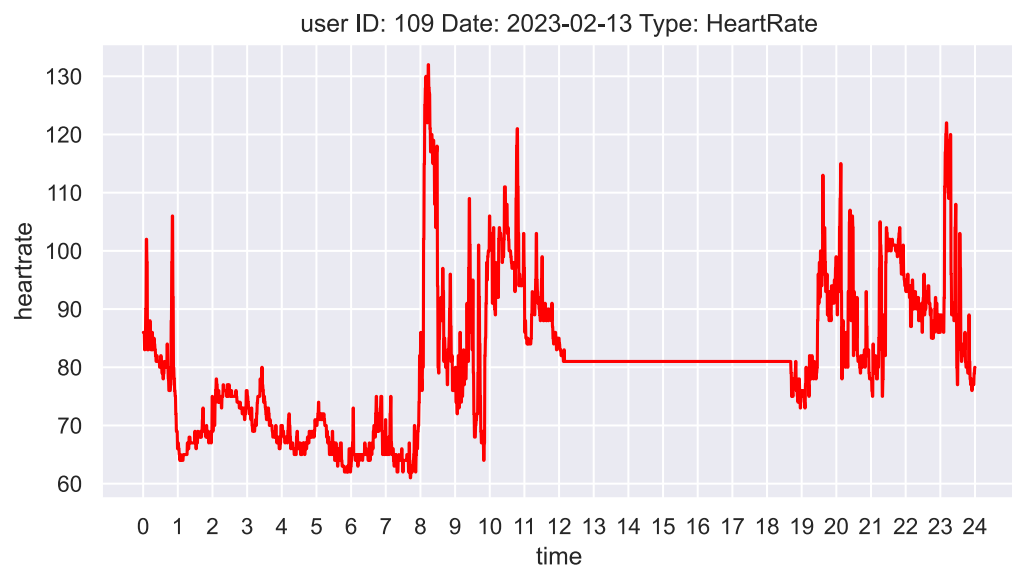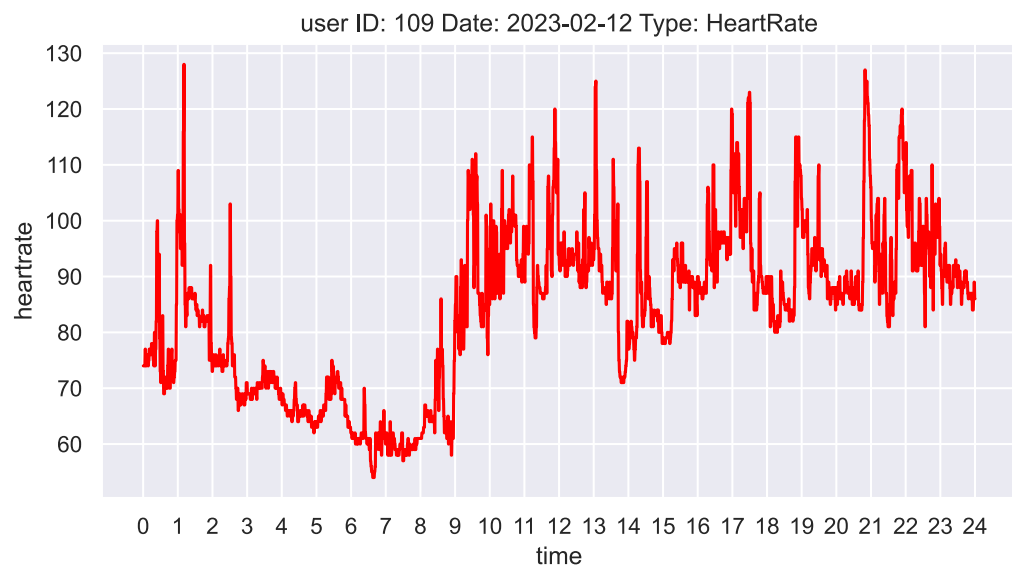user ID: 109 Date: 2023-01-31 Type: HeartRate

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user ID: 109 Date: 2023-02-04 Type: HeartRate

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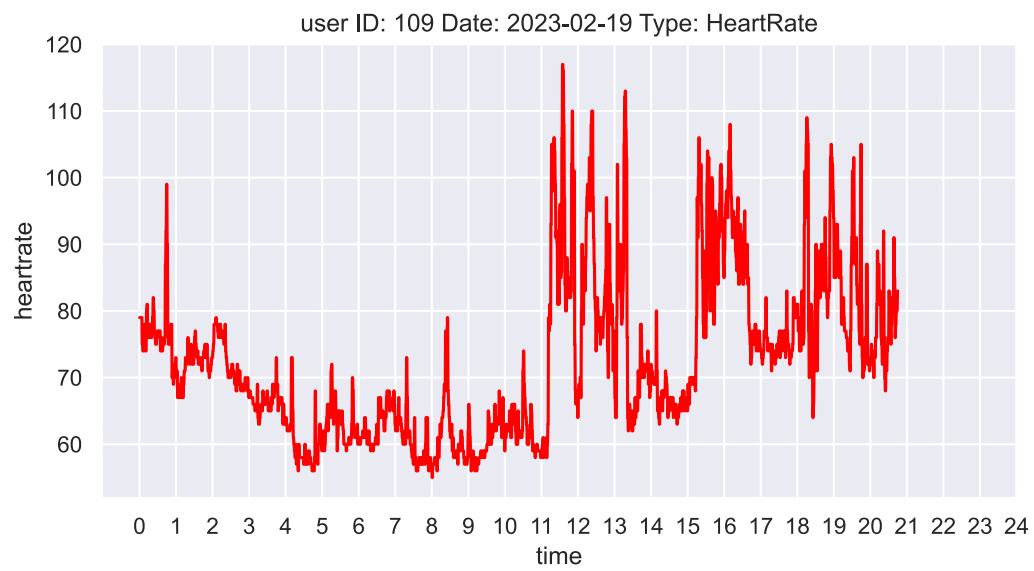user ID: 109 Date: 2023-02-08 Type: HeartRate
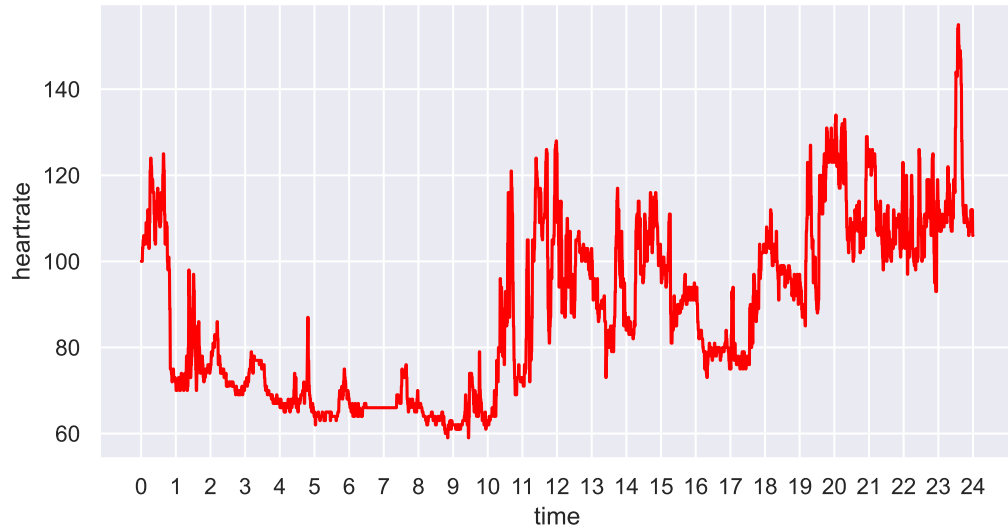
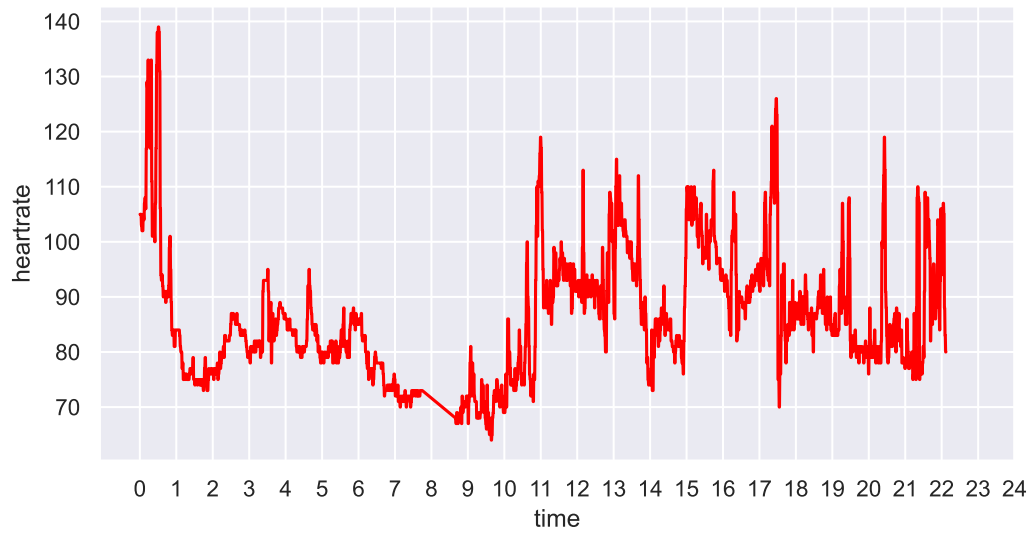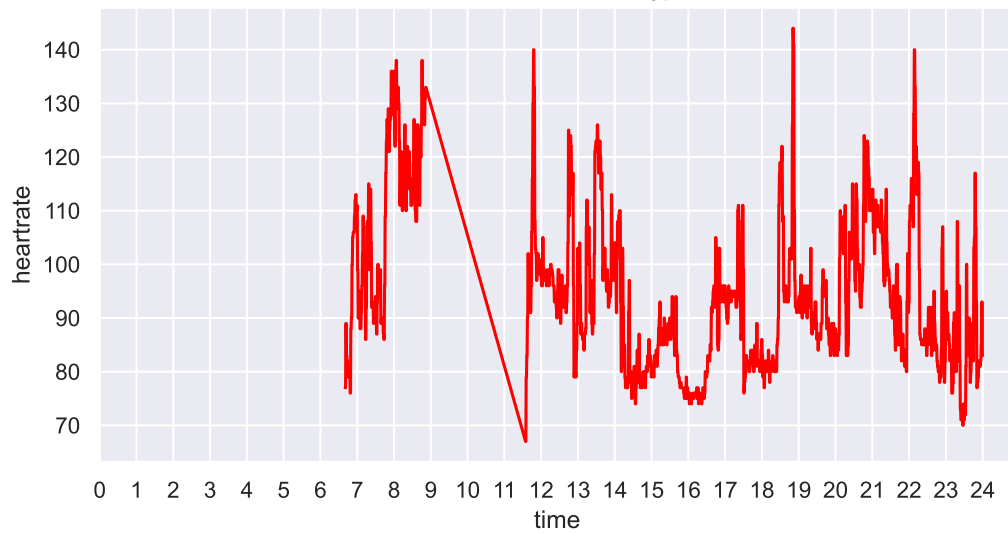user ID: 109 Date: 2023-02-11 Type: HeartRate

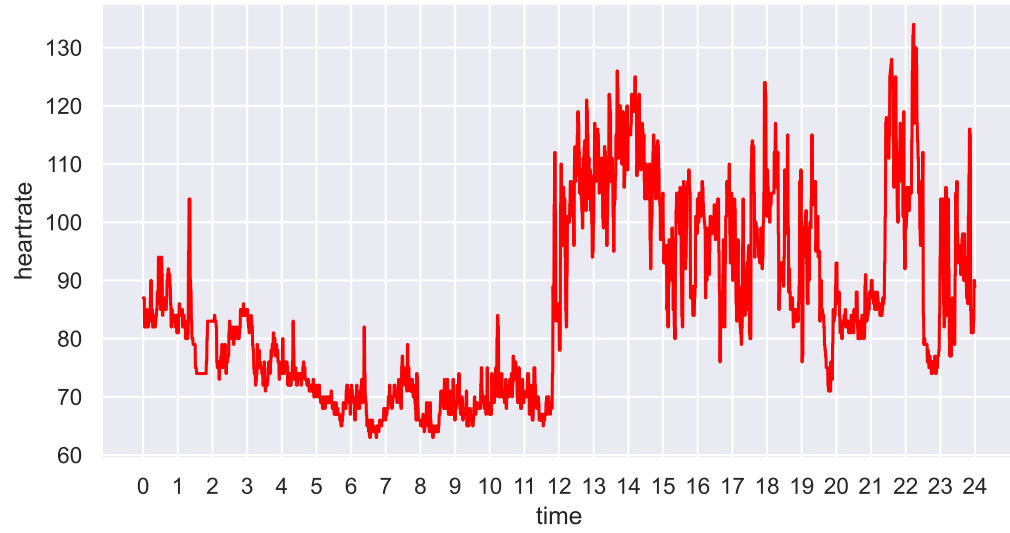user ID: 109 Date: 2023-02-12 Type: HeartRate

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user ID: 109 Date: 2023-02-16 Type: HeartRate

user ID: 109 Date: 2023-02-18 Type: HeartRate

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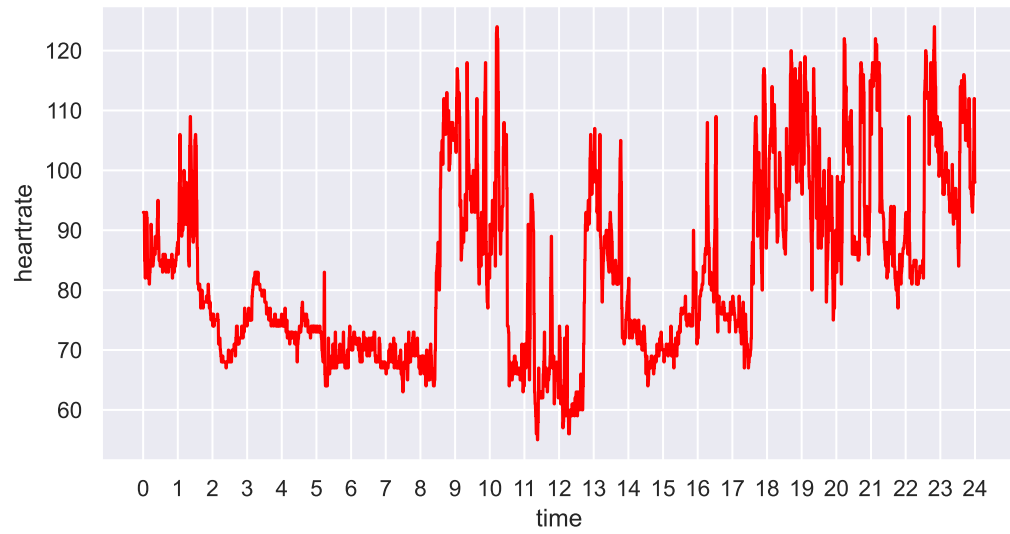

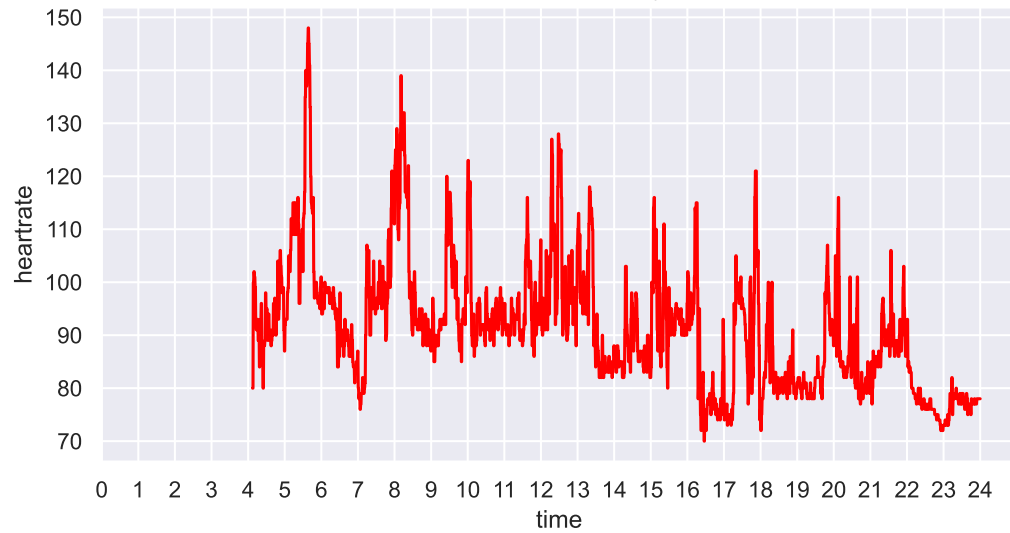user ID: 109 Date: 2023-02-23 Type: HeartRate
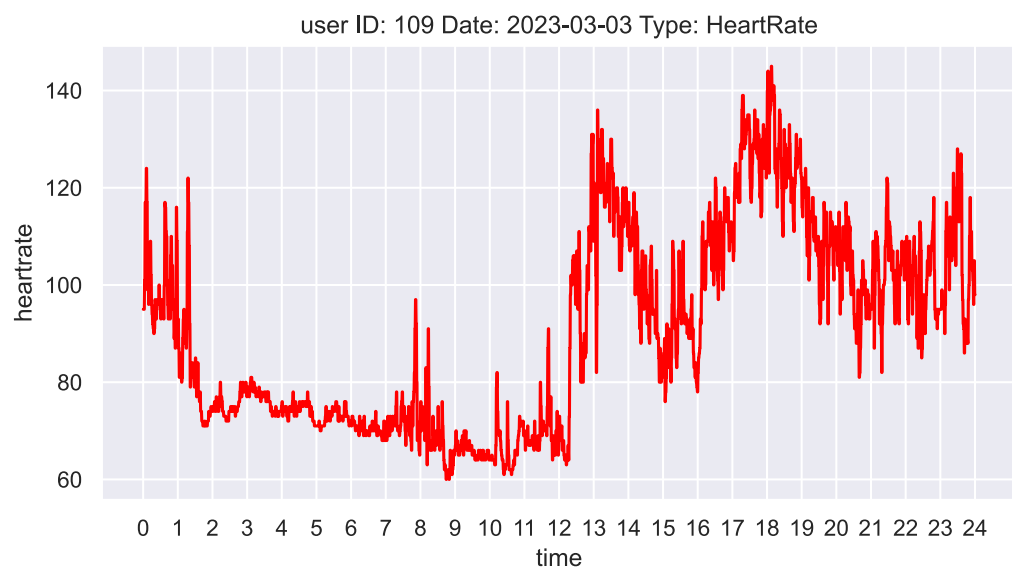

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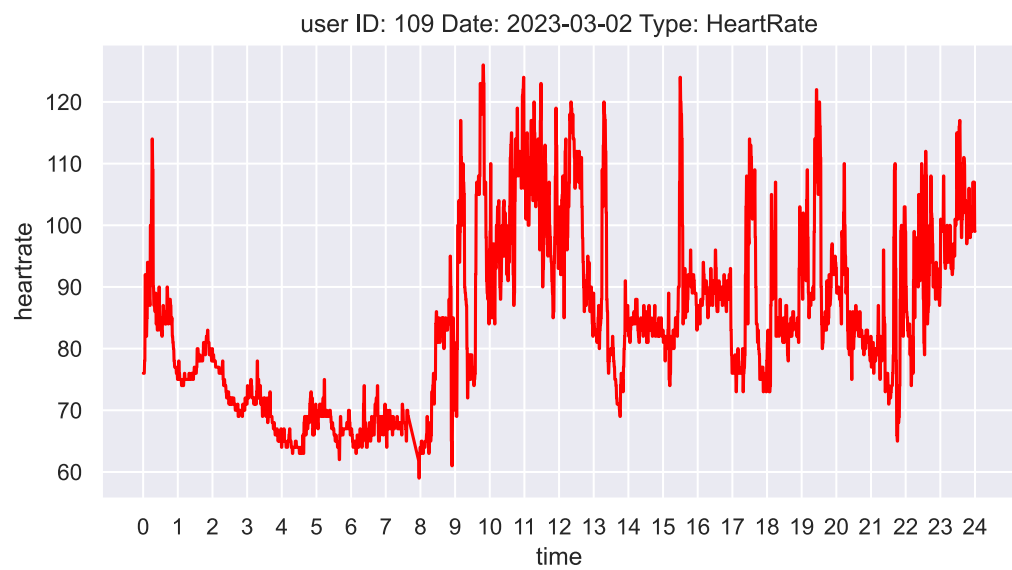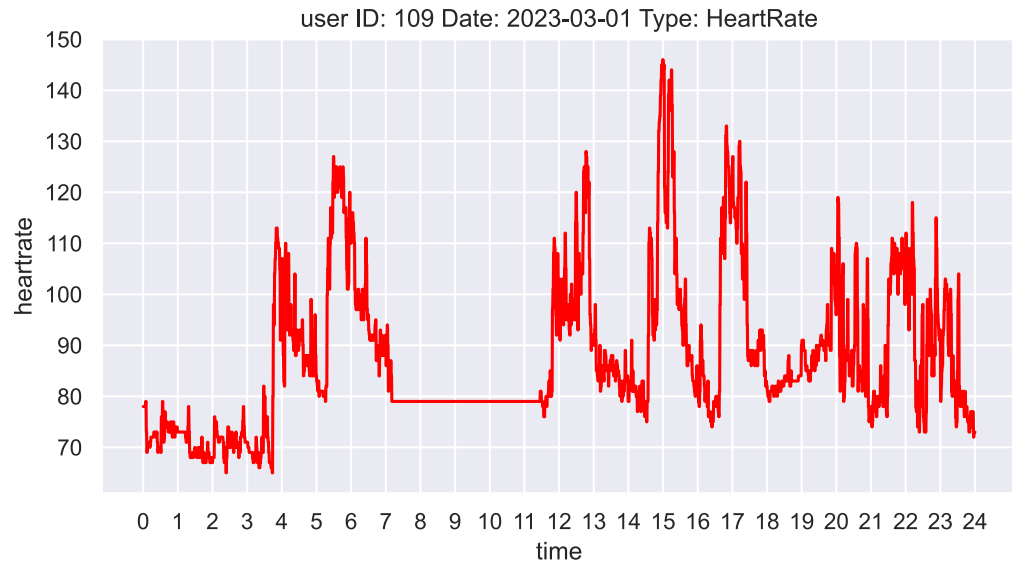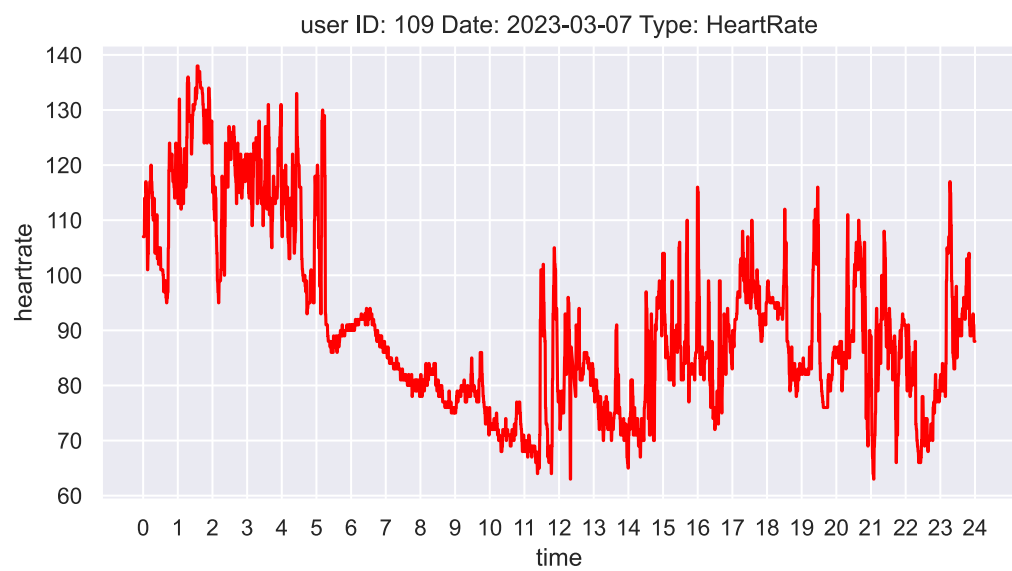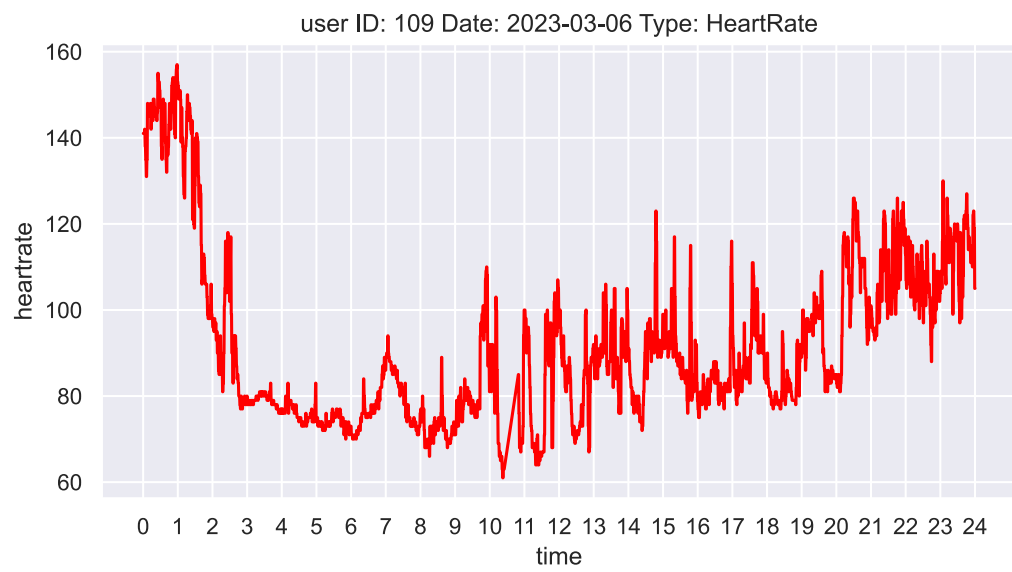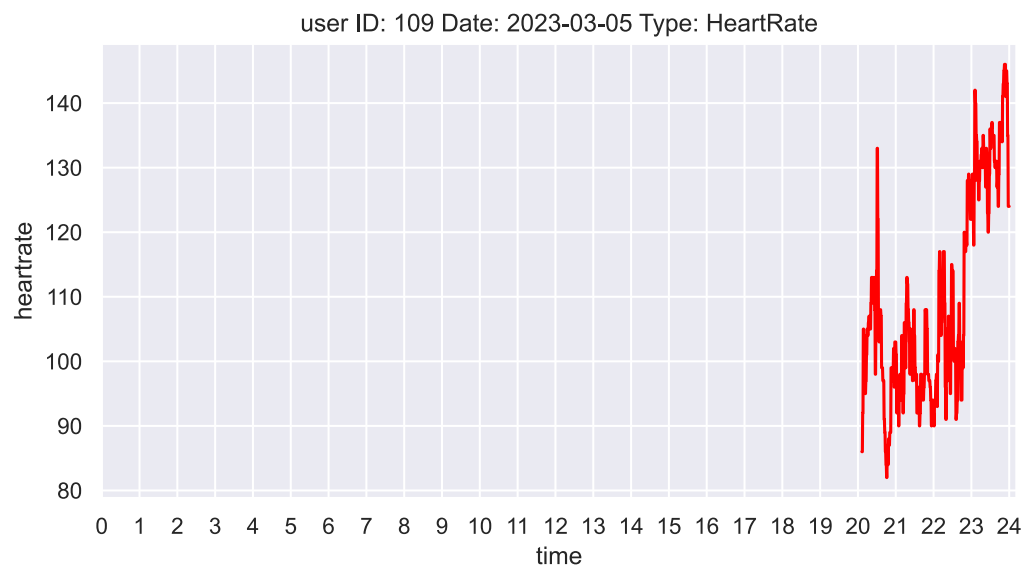
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user ID: 109 Date: 2023-03-02 Type: HeartRate

user ID: 109 Date: 2023-03-03 Type: HeartRate

user ID: 109 Date: 2023-03-05 Type: HeartRate

user ID: 109 Date: 2023-03-06 Type: HeartRate

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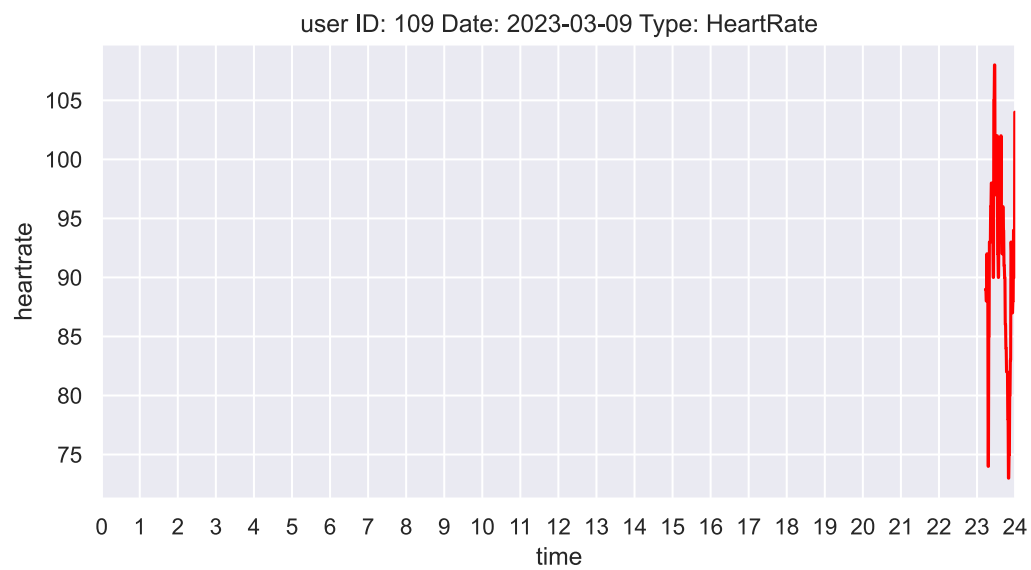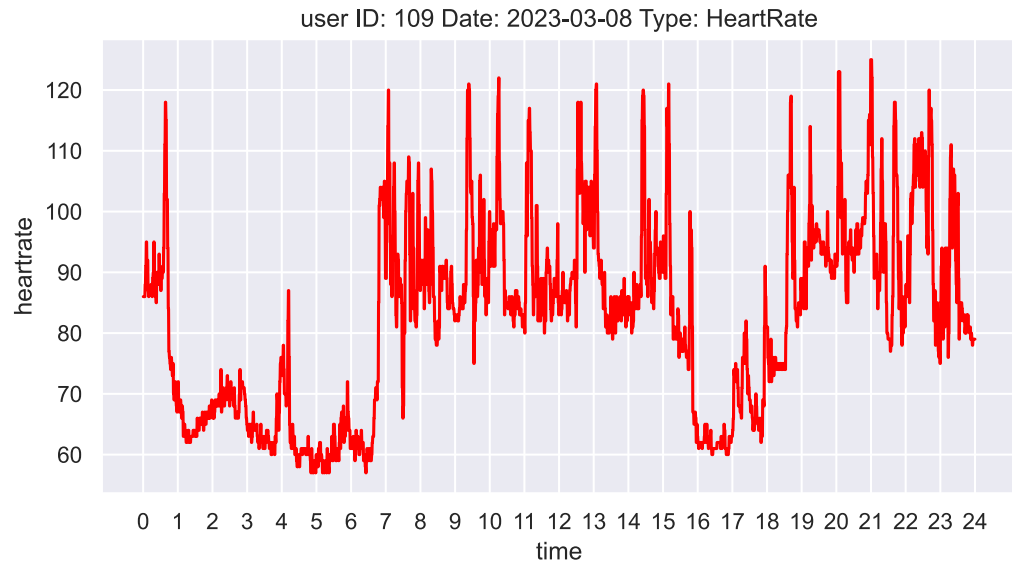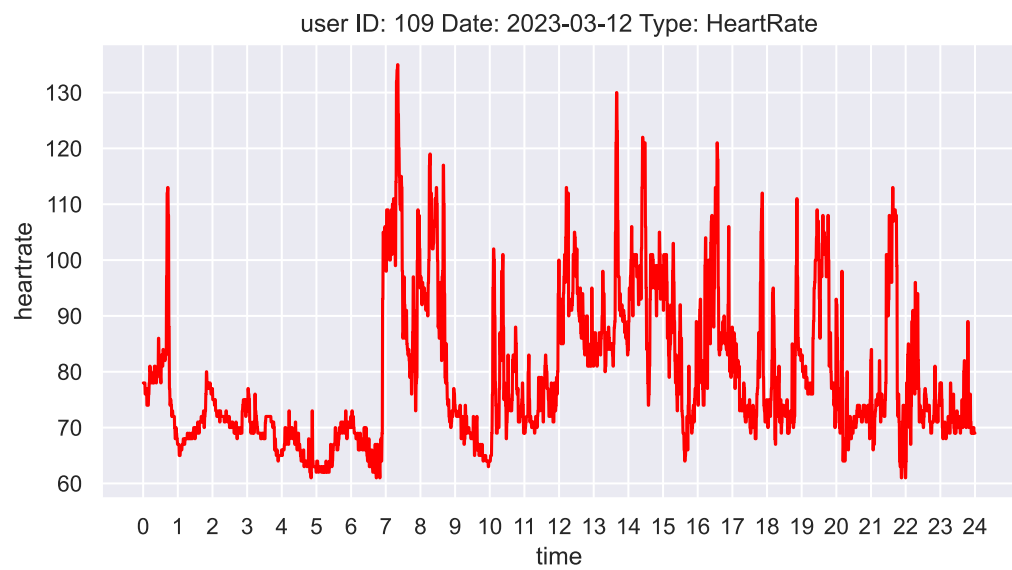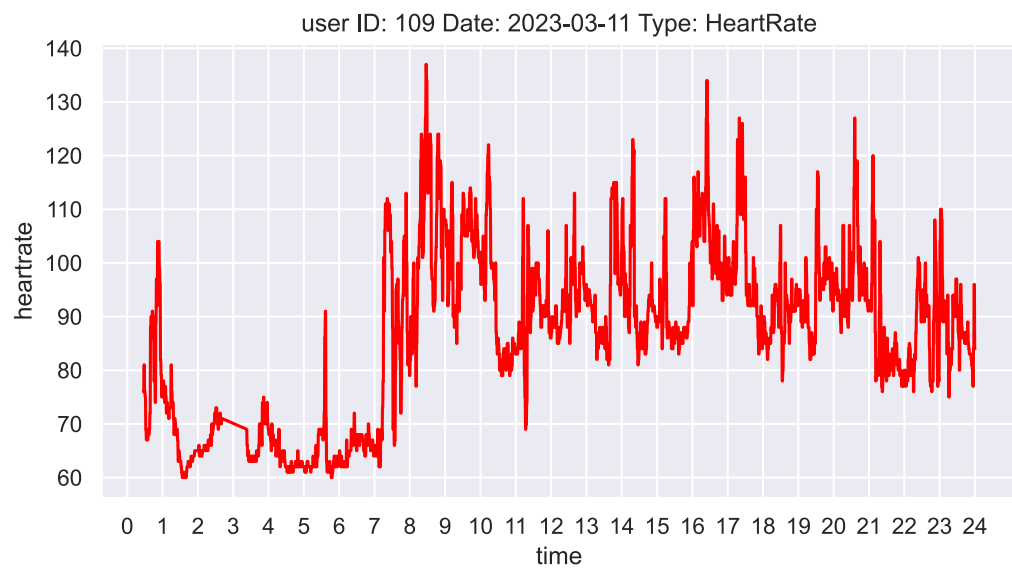user ID: 109 Date: 2023-03-10 Type: HeartRate

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In [ ]: