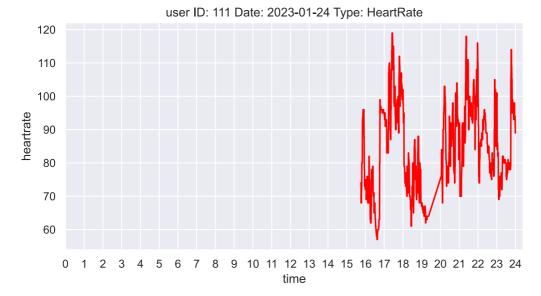
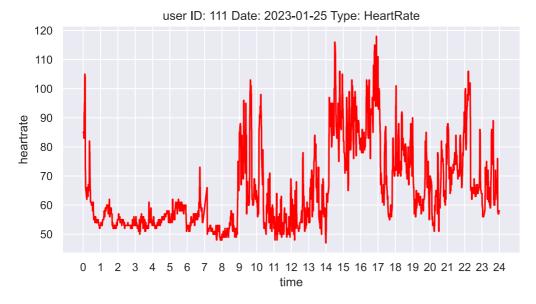
```
In [1]: import pandas as pd
        import matplotlib.pyplot as plt
         from astropy.stats.circstats import circmean
         from functools import reduce
         import datetime
         import pickle
         import time
         import plotly.express as px
         import numpy as np
  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

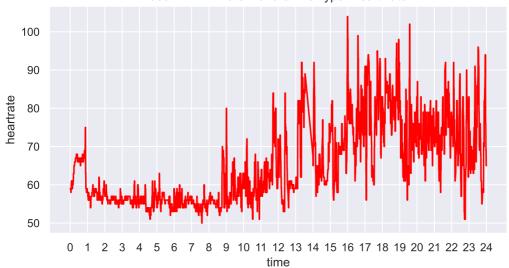
## Heart Rate graphs printer

```
cursor.execute("SELECT * FROM heartrate graphs data WHERE id=111")
In [10]:
         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()
```

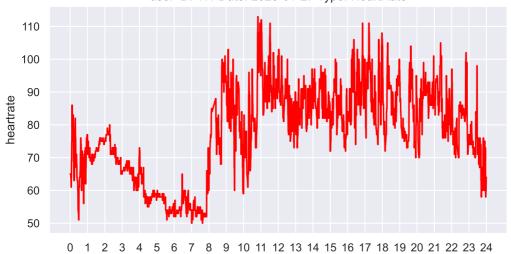




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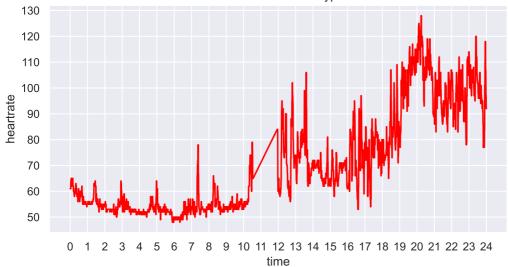


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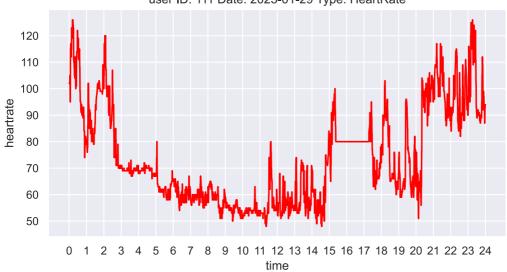


time

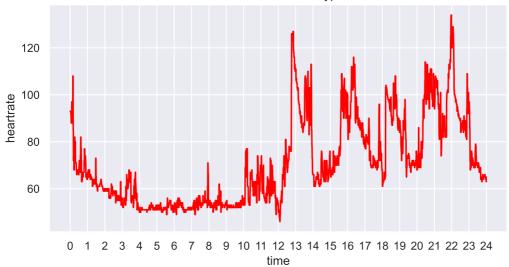
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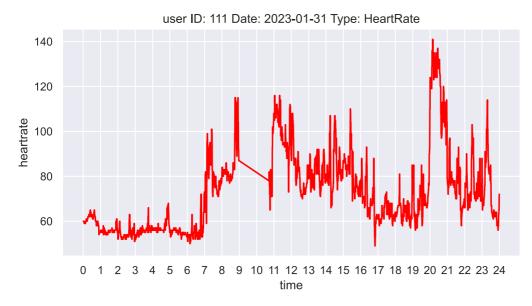


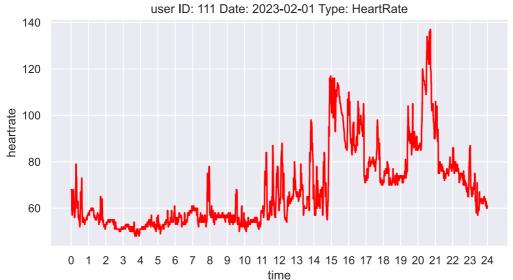
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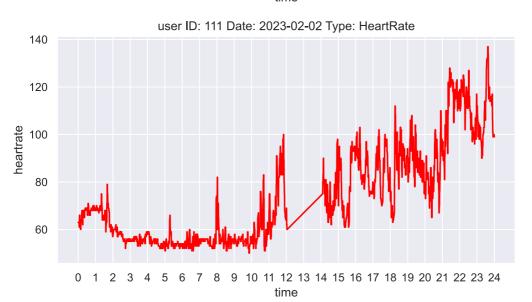


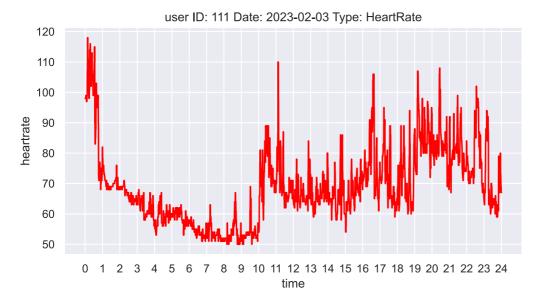
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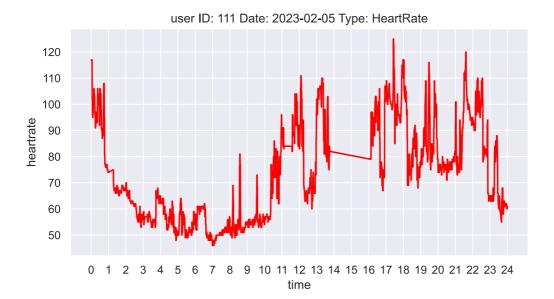
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140

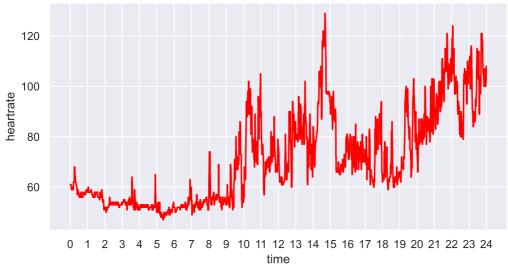
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80

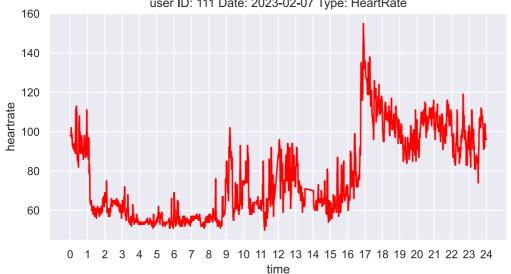
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 time



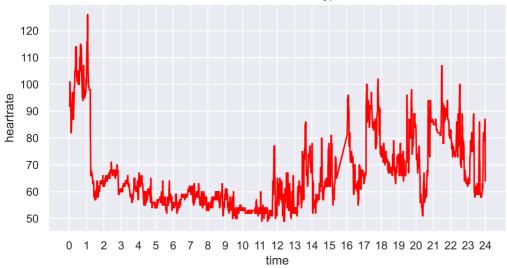




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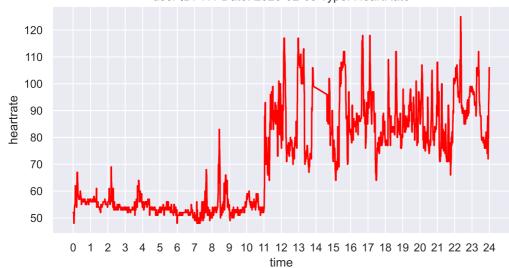


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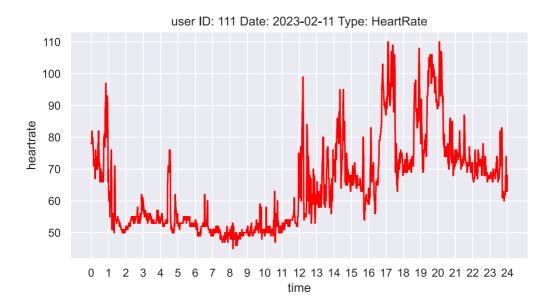


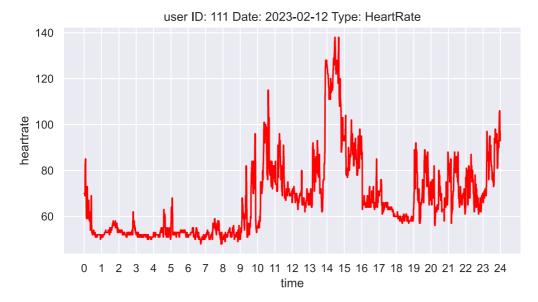
3 2 8

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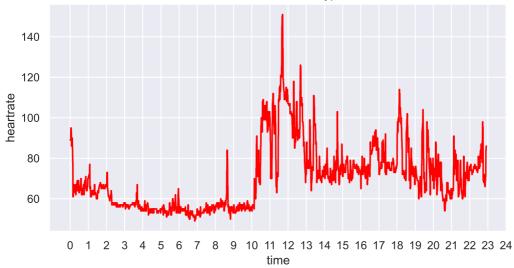


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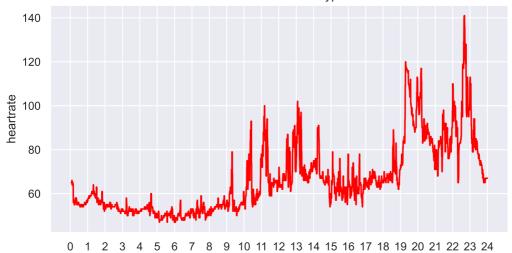




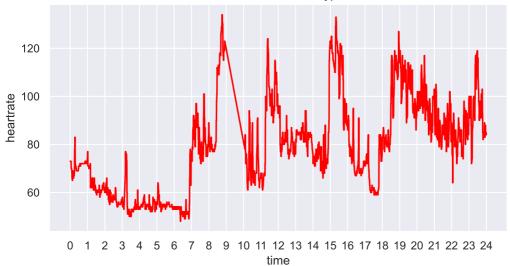
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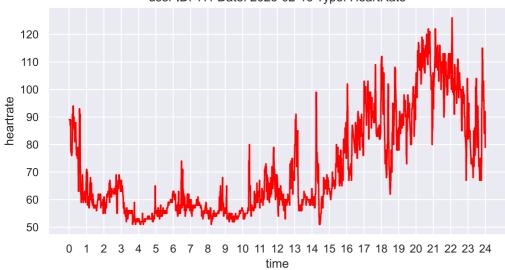
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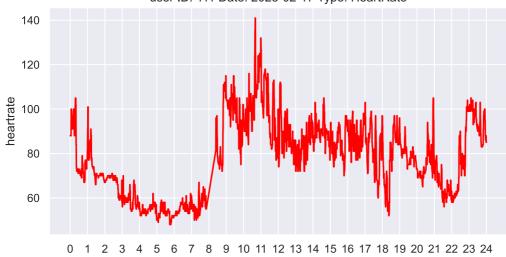
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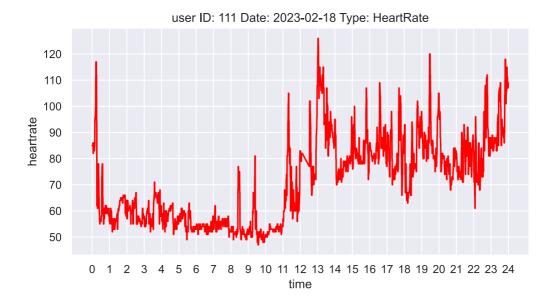
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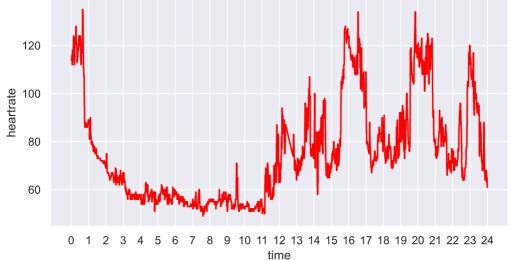
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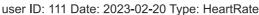


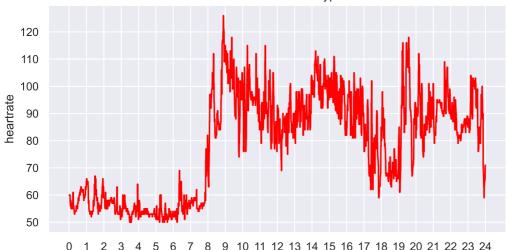
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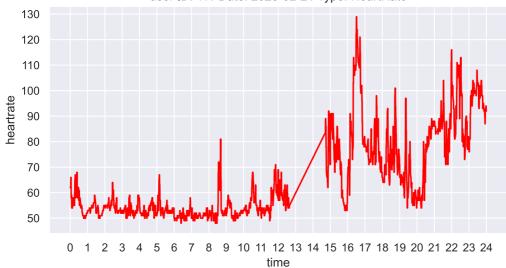




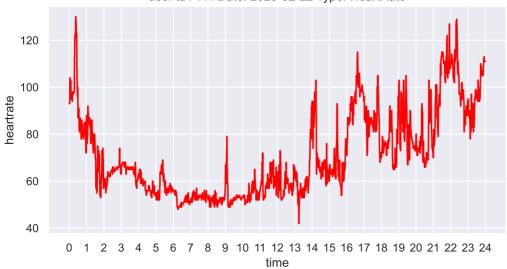


3 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 5 time

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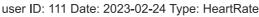


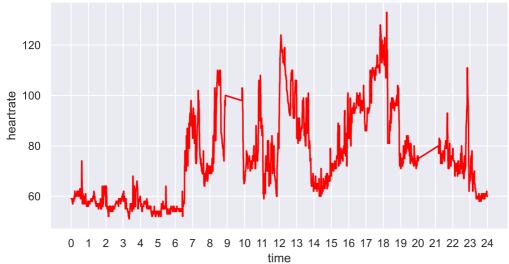
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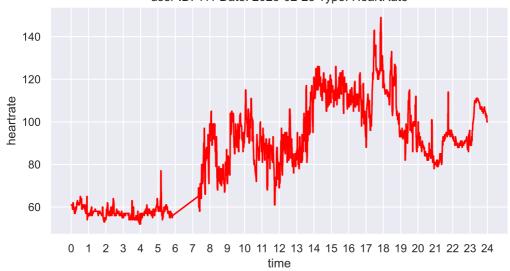
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time

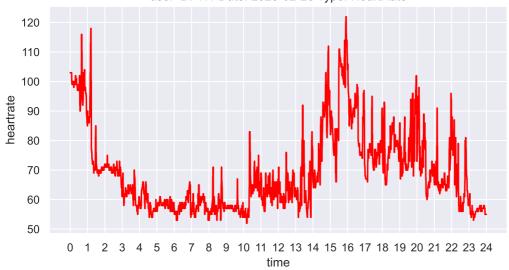




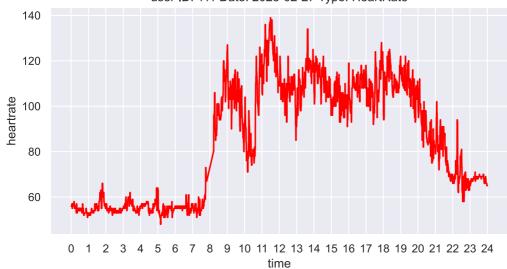
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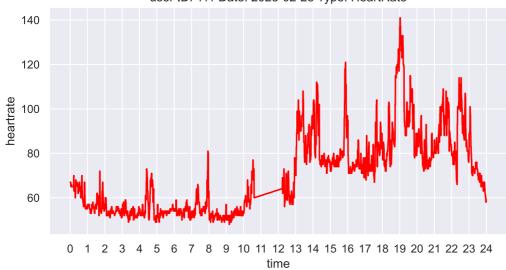
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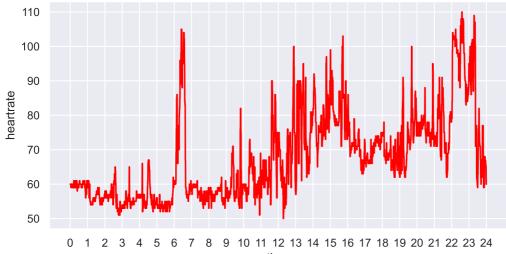
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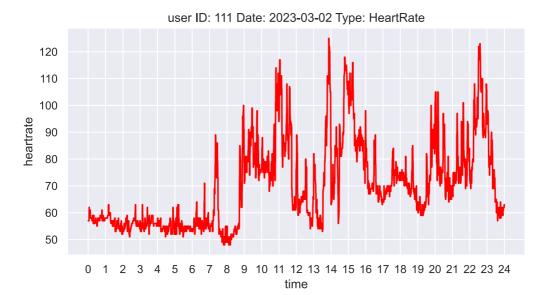
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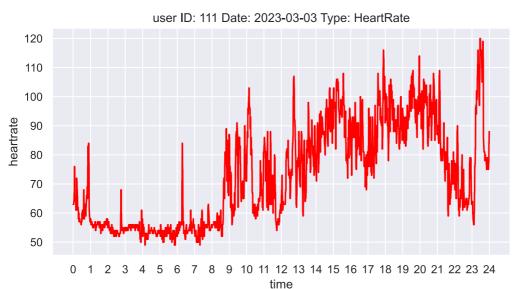


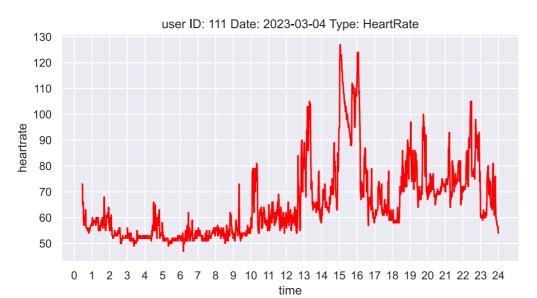
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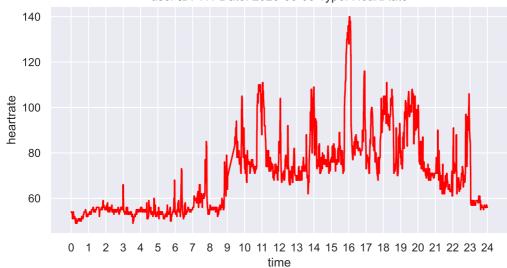
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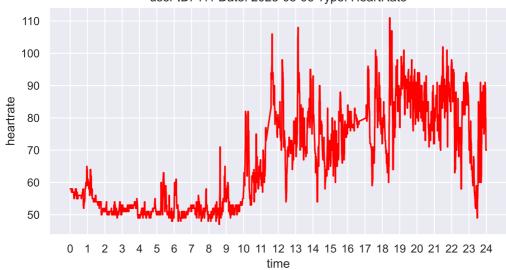




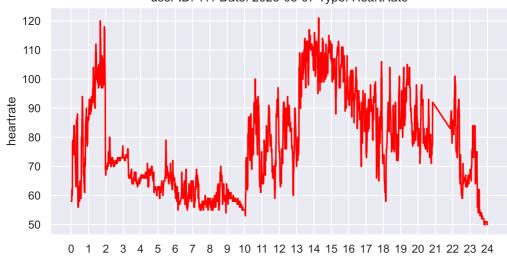
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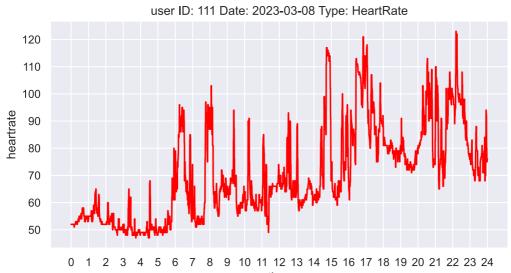
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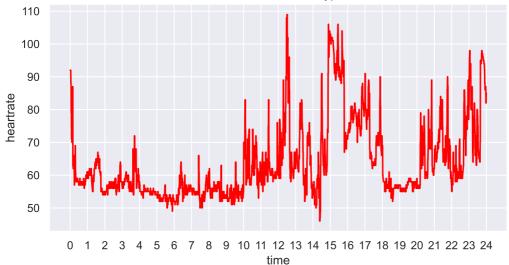
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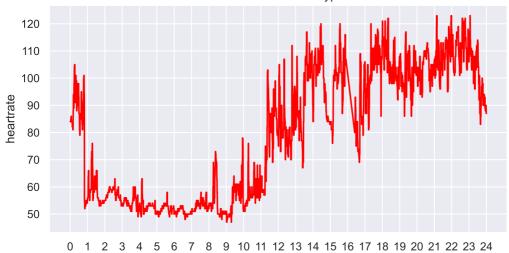
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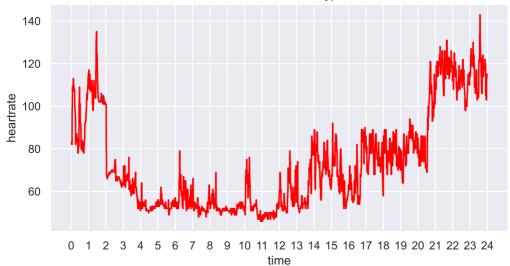


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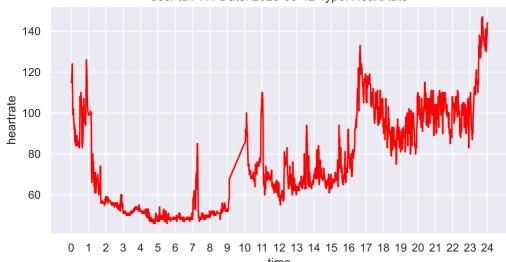


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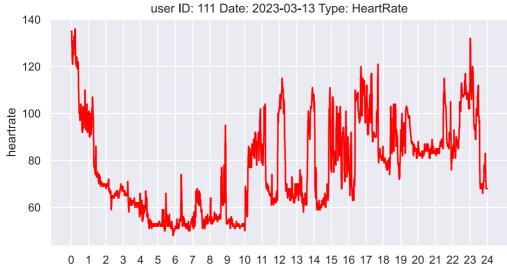
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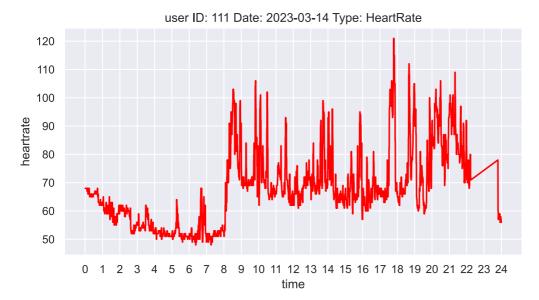
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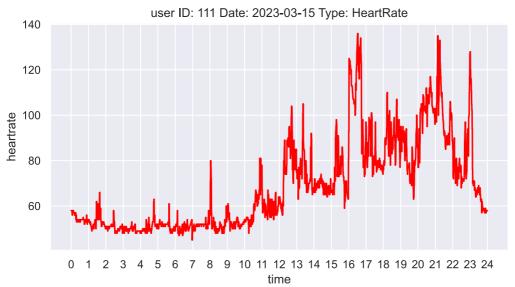


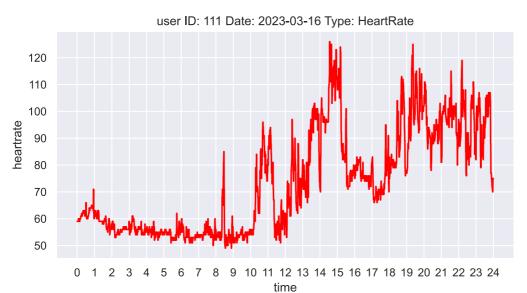
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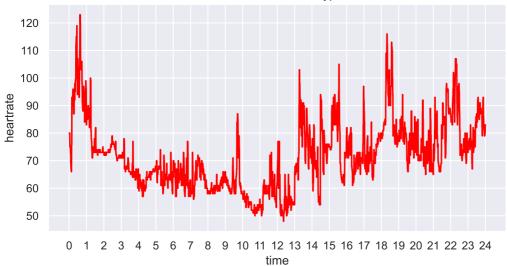
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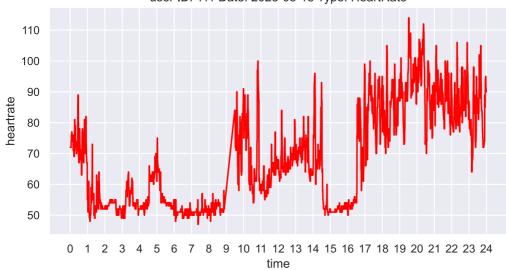




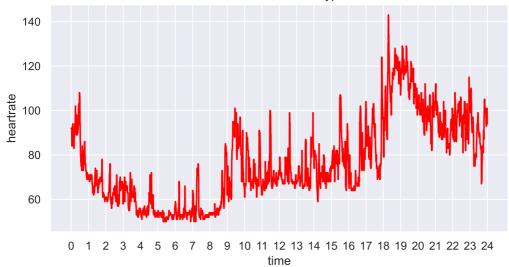
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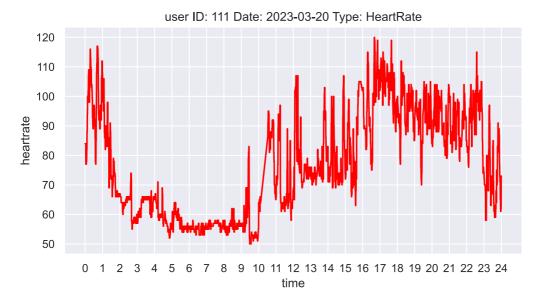


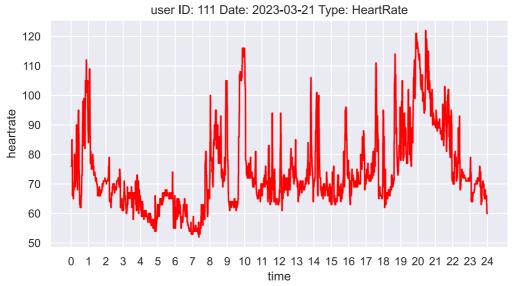
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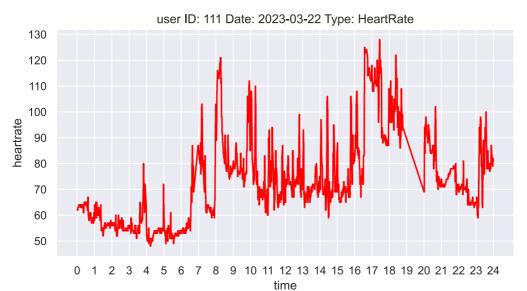


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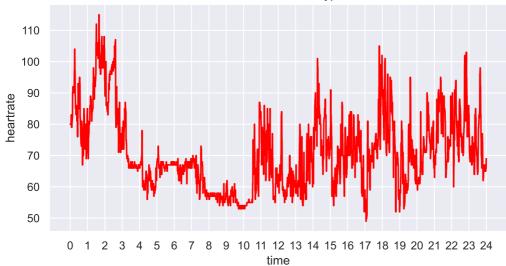




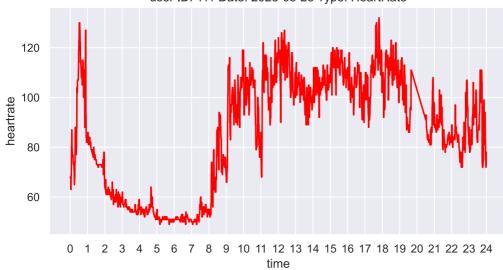


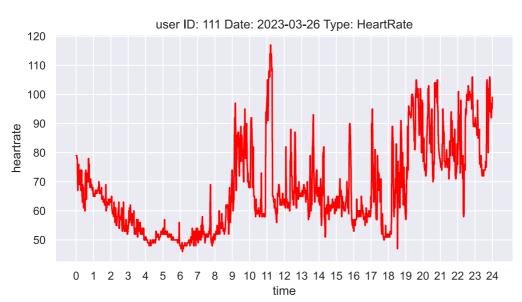


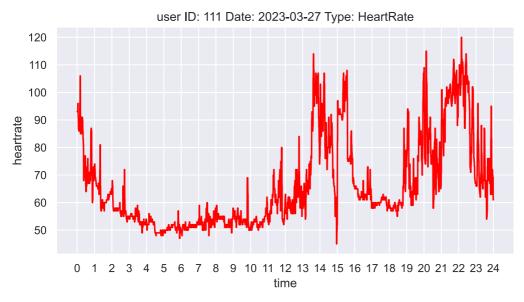
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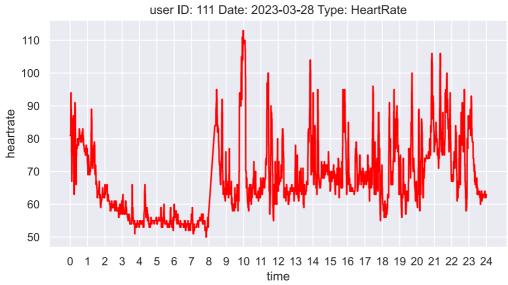


user ID: 111 Date: 2023-03-25 Type: HeartRate









In [ ]: