C:\Users\whitn\Anaconda2\envs\ml4qs2\python.exe C:/Users/whitn/OneDrive/Documenten/Groupwork\_TommyErik/ML4QS/ML4QS-master/PythonCode/crowdsignals\_ch5.py

C:/Users/whitn/OneDrive/Documenten/Groupwork\_TommyErik/ML4QS/ML4QS-master/PythonCode/crowdsignals\_ch5.py:34: FutureWarning: to\_datetime is deprecated. Use pd.to\_datetime(...)

dataset.index = dataset.index.to\_datetime()

===== k medoids clustering =====

------------------This is iteration number: 0

k = 2

silhouette = 0.608664191567

k = 3

silhouette = 0.623677634413

k = 4

silhouette = 0.621140783058

k = 5

silhouette = 0.648676039696

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.630414152506

k = 8

silhouette = 0.622664712802

k = 9

silhouette = 0.0586058329279

------------------This is iteration number: 1

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.63560728718

k = 4

silhouette = 0.671527290996

k = 5

silhouette = 0.658127868546

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.64323059695

k = 8

silhouette = 0.0876200044978

k = 9

silhouette = 0.551382929415

------------------This is iteration number: 2

k = 2

silhouette = 0.654979440751

k = 3

silhouette = 0.648441986639

k = 4

silhouette = 0.620644006948

k = 5

silhouette = 0.663107231702

k = 6

silhouette = 0.641884106767

k = 7

silhouette = 0.64323059695

k = 8

silhouette = 0.624170307356

k = 9

silhouette = 0.61370709818

------------------This is iteration number: 3

k = 2

silhouette = 0.615962931166

k = 3

silhouette = 0.643084822285

k = 4

silhouette = 0.668383734459

k = 5

silhouette = 0.667690104353

k = 6

silhouette = 0.640498512525

k = 7

silhouette = 0.643407911374

k = 8

silhouette = 0.624547398941

k = 9

silhouette = 0.619689713038

------------------This is iteration number: 4

k = 2

silhouette = 0.615962931166

k = 3

silhouette = 0.646856507265

k = 4

silhouette = 0.632218702949

k = 5

silhouette = 0.656945723552

k = 6

silhouette = 0.6321083724

k = 7

silhouette = 0.625291731752

k = 8

silhouette = 0.62488479744

k = 9

silhouette = 0.623807368056

------------------This is iteration number: 5

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.634409245583

k = 4

silhouette = 0.622851848638

k = 5

silhouette = 0.626928408937

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.625291731752

k = 8

silhouette = 0.577111968607

k = 9

silhouette = 0.552622316385

------------------This is iteration number: 6

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.63560728718

k = 4

silhouette = 0.646860479527

k = 5

silhouette = 0.64765722736

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.644244564198

k = 8

silhouette = 0.549586615206

k = 9

silhouette = 0.612582075561

------------------This is iteration number: 7

k = 2

silhouette = 0.668955903316

k = 3

silhouette = 0.626249596185

k = 4

silhouette = 0.629108581147

k = 5

silhouette = 0.628508619617

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.594962803575

k = 8

silhouette = 0.625366257518

k = 9

silhouette = 0.597748230625

------------------This is iteration number: 8

k = 2

silhouette = 0.668955903316

k = 3

silhouette = 0.646856507265

k = 4

silhouette = 0.618510623742

k = 5

silhouette = 0.626928408937

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.643407911374

k = 8

silhouette = 0.630437278058

k = 9

silhouette = 0.613932040923

------------------This is iteration number: 9

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.627709823966

k = 4

silhouette = 0.641972752726

k = 5

silhouette = 0.623809954359

k = 6

silhouette = 0.646533578118

k = 7

silhouette = 0.625291731752

k = 8

silhouette = 0.626306759773

k = 9

silhouette = 0.621786180098

------------------This is iteration number: 10

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.63560728718

k = 4

silhouette = 0.610829879514

k = 5

silhouette = 0.60697612895

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.626777240621

k = 8

silhouette = 0.612629408915

k = 9

silhouette = 0.615217248579

------------------This is iteration number: 11

k = 2

silhouette = 0.615962931166

k = 3

silhouette = 0.652384410216

k = 4

silhouette = 0.622851848638

k = 5

silhouette = 0.658127868546

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.625291731752

k = 8

silhouette = 0.628234789789

k = 9

silhouette = 0.607140614654

------------------This is iteration number: 12

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.643167585121

k = 4

silhouette = 0.632276042418

k = 5

silhouette = 0.676169568559

k = 6

silhouette = 0.639485770791

k = 7

silhouette = 0.654423030479

k = 8

silhouette = 0.623186386701

k = 9

silhouette = 0.585127836069

------------------This is iteration number: 13

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.656464656748

k = 4

silhouette = 0.643607541373

k = 5

silhouette = 0.658191820198

k = 6

silhouette = 0.639485770791

k = 7

silhouette = 0.641571677095

k = 8

silhouette = 0.623998200929

k = 9

silhouette = 0.623891461288

------------------This is iteration number: 14

k = 2

silhouette = 0.654979440751

k = 3

silhouette = 0.643084822285

k = 4

silhouette = 0.629314354688

k = 5

silhouette = 0.642870717166

k = 6

silhouette = 0.639485770791

k = 7

silhouette = 0.626777240621

k = 8

silhouette = 0.622285480986

k = 9

silhouette = 0.619210808548

------------------This is iteration number: 15

k = 2

silhouette = 0.654979440751

k = 3

silhouette = 0.649103043101

k = 4

silhouette = 0.632331580106

k = 5

silhouette = 0.663715560913

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.625291731752

k = 8

silhouette = 0.610369947258

k = 9

silhouette = 0.606825349239

------------------This is iteration number: 16

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.648441986639

k = 4

silhouette = 0.639706230831

k = 5

silhouette = 0.659593941128

k = 6

silhouette = 0.631966783483

k = 7

silhouette = 0.64323059695

k = 8

silhouette = 0.629171305666

k = 9

silhouette = 0.62010825476

------------------This is iteration number: 17

k = 2

silhouette = 0.602663292619

k = 3

silhouette = 0.586348625028

k = 4

silhouette = 0.671527290996

k = 5

silhouette = 0.658191820198

k = 6

silhouette = 0.639485770791

k = 7

silhouette = 0.626777240621

k = 8

silhouette = 0.597756569976

k = 9

silhouette = 0.614802542025

------------------This is iteration number: 18

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.643084822285

k = 4

silhouette = 0.5980183313

k = 5

silhouette = 0.658127868546

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.657463213959

k = 8

silhouette = 0.632093057415

k = 9

silhouette = 0.58897659045

------------------This is iteration number: 19

k = 2

silhouette = 0.654979440751

k = 3

silhouette = 0.64386321386

k = 4

silhouette = 0.672981719987

k = 5

silhouette = 0.668168701266

k = 6

silhouette = 0.639485770791

k = 7

silhouette = 0.625291731752

k = 8

silhouette = 0.624029172801

k = 9

silhouette = 0.622978094979

------------------This is iteration number: 20

k = 2

silhouette = 0.668955903316

k = 3

silhouette = 0.62400307261

k = 4

silhouette = 0.631272536976

k = 5

silhouette = 0.658127868546

k = 6

silhouette = 0.639485770791

k = 7

silhouette = 0.644498293734

k = 8

silhouette = 0.614576307411

k = 9

silhouette = 0.605940820858

------------------This is iteration number: 21

k = 2

silhouette = 0.668955903316

k = 3

silhouette = 0.649103043101

k = 4

silhouette = 0.619292586752

k = 5

silhouette = 0.668804621293

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.643407911374

k = 8

silhouette = 0.592884882381

k = 9

silhouette = 0.618321391344

------------------This is iteration number: 22

k = 2

silhouette = 0.668955903316

k = 3

silhouette = 0.645206585254

k = 4

silhouette = 0.632331580106

k = 5

silhouette = 0.633496954251

k = 6

silhouette = 0.639485770791

k = 7

silhouette = 0.64323059695

k = 8

silhouette = 0.641366399751

k = 9

silhouette = 0.602412465253

------------------This is iteration number: 23

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.63982697472

k = 4

silhouette = 0.632603469242

k = 5

silhouette = 0.653944913581

k = 6

silhouette = 0.639485770791

k = 7

silhouette = 0.630414152506

k = 8

silhouette = 0.603180304352

k = 9

silhouette = 0.557298356699

------------------This is iteration number: 24

k = 2

silhouette = 0.654979440751

k = 3

silhouette = 0.640356055778

k = 4

silhouette = 0.652187158345

k = 5

silhouette = 0.616501680988

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.64323059695

k = 8

silhouette = 0.616913180524

k = 9

silhouette = 0.597730378296

------------------This is iteration number: 25

k = 2

silhouette = 0.668955903316

k = 3

silhouette = 0.643084822285

k = 4

silhouette = 0.621140783058

k = 5

silhouette = 0.658127868546

k = 6

silhouette = 0.641887889877

k = 7

silhouette = 0.624116897175

k = 8

silhouette = 0.559550090978

k = 9

silhouette = 0.606339918471

------------------This is iteration number: 26

k = 2

silhouette = 0.615962931166

k = 3

silhouette = 0.643167585121

k = 4

silhouette = 0.645753507782

k = 5

silhouette = 0.668168701266

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.643407911374

k = 8

silhouette = 0.626480311327

k = 9

silhouette = 0.548876062882

------------------This is iteration number: 27

k = 2

silhouette = 0.654979440751

k = 3

silhouette = 0.643084822285

k = 4

silhouette = 0.670369786516

k = 5

silhouette = 0.623809954359

k = 6

silhouette = 0.630601118516

k = 7

silhouette = 0.639504422521

k = 8

silhouette = 0.625600266497

k = 9

silhouette = 0.618940018386

------------------This is iteration number: 28

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.636082716844

k = 4

silhouette = 0.646291047447

k = 5

silhouette = 0.663715560913

k = 6

silhouette = 0.646565947034

k = 7

silhouette = 0.641075398388

k = 8

silhouette = 0.632799080032

k = 9

silhouette = 0.610609372333

------------------This is iteration number: 29

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.640432111527

k = 4

silhouette = 0.613503043274

k = 5

silhouette = 0.623809954359

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.643407911374

k = 8

silhouette = 0.641348147658

k = 9

silhouette = 0.524801966843

------------------This is iteration number: 30

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.643084822285

k = 4

silhouette = 0.652969966012

k = 5

silhouette = 0.623809954359

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.64323059695

k = 8

silhouette = 0.625432204342

k = 9

silhouette = 0.537783102269

------------------This is iteration number: 31

k = 2

silhouette = 0.654979440751

k = 3

silhouette = 0.646308199985

k = 4

silhouette = 0.614372167099

k = 5

silhouette = 0.623809954359

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.643407911374

k = 8

silhouette = 0.624442392685

k = 9

silhouette = 0.542727974237

------------------This is iteration number: 32

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.64547418715

k = 4

silhouette = 0.621802906477

k = 5

silhouette = 0.623809954359

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.630414152506

k = 8

silhouette = 0.622794559002

k = 9

silhouette = 0.622436849621

------------------This is iteration number: 33

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.646308199985

k = 4

silhouette = 0.650354445768

k = 5

silhouette = 0.658127868546

k = 6

silhouette = 0.639485770791

k = 7

silhouette = 0.625291731752

k = 8

silhouette = 0.644371157991

k = 9

silhouette = 0.609806540567

------------------This is iteration number: 34

k = 2

silhouette = 0.654979440751

k = 3

silhouette = 0.635779296748

k = 4

silhouette = 0.632331580106

k = 5

silhouette = 0.659593941128

k = 6

silhouette = 0.639485770791

k = 7

silhouette = 0.644498293734

k = 8

silhouette = 0.640550840742

k = 9

silhouette = 0.622447670256

------------------This is iteration number: 35

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.63560728718

k = 4

silhouette = 0.662522866704

k = 5

silhouette = 0.653103810821

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.645202823566

k = 8

silhouette = 0.627256302399

k = 9

silhouette = 0.556006582562

------------------This is iteration number: 36

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.646856507265

k = 4

silhouette = 0.629108581147

k = 5

silhouette = 0.653944913581

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.630414152506

k = 8

silhouette = 0.625366257518

k = 9

silhouette = 0.582761120696

------------------This is iteration number: 37

k = 2

silhouette = 0.673655677075

k = 3

silhouette = 0.656464656748

k = 4

silhouette = 0.665658922139

k = 5

silhouette = 0.659593941128

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.624116897175

k = 8

silhouette = 0.625366257518

k = 9

silhouette = 0.568895888559

------------------This is iteration number: 38

k = 2

silhouette = 0.615962931166

k = 3

silhouette = 0.648716273498

k = 4

silhouette = 0.621140783058

k = 5

silhouette = 0.658127868546

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.643407911374

k = 8

silhouette = 0.552513881356

k = 9

silhouette = 0.607216824871

------------------This is iteration number: 39

k = 2

silhouette = 0.668955903316

k = 3

silhouette = 0.643084822285

k = 4

silhouette = 0.641972752726

k = 5

silhouette = 0.658127868546

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.625291731752

k = 8

silhouette = 0.616913180524

k = 9

silhouette = 0.584213560438

------------------This is iteration number: 40

k = 2

silhouette = 0.621564473788

k = 3

silhouette = 0.648933699393

k = 4

silhouette = 0.632603469242

k = 5

silhouette = 0.626928408937

k = 6

silhouette = 0.640498512525

k = 7

silhouette = 0.527811637128

k = 8

silhouette = 0.625432204342

k = 9

silhouette = 0.614343364769

------------------This is iteration number: 41

k = 2

silhouette = 0.668955903316

k = 3

silhouette = 0.643167585121

k = 4

silhouette = 0.638123204993

k = 5

silhouette = 0.623809954359

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.64323059695

k = 8

silhouette = 0.624177465562

k = 9

silhouette = 0.617508342144

------------------This is iteration number: 42

k = 2

silhouette = 0.668955903316

k = 3

silhouette = 0.656464656748

k = 4

silhouette = 0.636025545971

k = 5

silhouette = 0.654427179798

k = 6

silhouette = 0.641887889877

k = 7

silhouette = 0.64323059695

k = 8

silhouette = 0.627161889104

k = 9

silhouette = 0.61576584991

------------------This is iteration number: 43

k = 2

silhouette = 0.615962931166

k = 3

silhouette = 0.624796252734

k = 4

silhouette = 0.607132150024

k = 5

silhouette = 0.658127868546

k = 6

silhouette = 0.636936521963

k = 7

silhouette = 0.64323059695

k = 8

silhouette = 0.624029172801

k = 9

silhouette = 0.549259508171

Printing the silhouette values just in case :

[0.65715705427662452, 0.64080557697893736, 0.63630746511371017, 0.64778102608292909, 0.63808561241246753, 0.63365324751805263, 0.60583993539620662, 0.5839224208235485]

The highest average silhouette score is 0.657157054277

which you get from k = 2

The highest average silhouette score is 0.657157054277

which you get from k = 2

\multirow{2}{\*}{ gyr\_phone\_x } & mean & -0.06 & 1.13 \\

& std & 0.42 & 0.50 \\

\multirow{2}{\*}{ gyr\_phone\_y } & mean & 0.01 & 0.32 \\

& std & 0.32 & 0.56 \\

\multirow{2}{\*}{ gyr\_phone\_z } & mean & -0.04 & 0.99 \\

& std & 0.34 & 0.50 \\

labelOnTable & percentage & 100.00 \% & 0.00 \% \\

labelSitting & percentage & 99.60 \% & 0.40 \% \\

labelWashingHands & percentage & 96.49 \% & 3.51 \% \\

labelWalking & percentage & 84.54 \% & 15.46 \% \\

labelStanding & percentage & 98.58 \% & 1.42 \% \\

labelDriving & percentage & 99.72 \% & 0.28 \% \\

labelEating & percentage & 99.49 \% & 0.51 \% \\

labelRunning & percentage & 55.05 \% & 44.95 \% \\