

1) Individual data analysis task

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Analyzed file: ECG_Group 4_Data 2.csv

Recall from the “BEGY6103_Lab 01_Instruction and Report Requirements”, you need to plot the figures channel 1 - ECG vs time, and channel 40 – heart rate vs time first, then fill out the measurement values and computational means into the following tables.

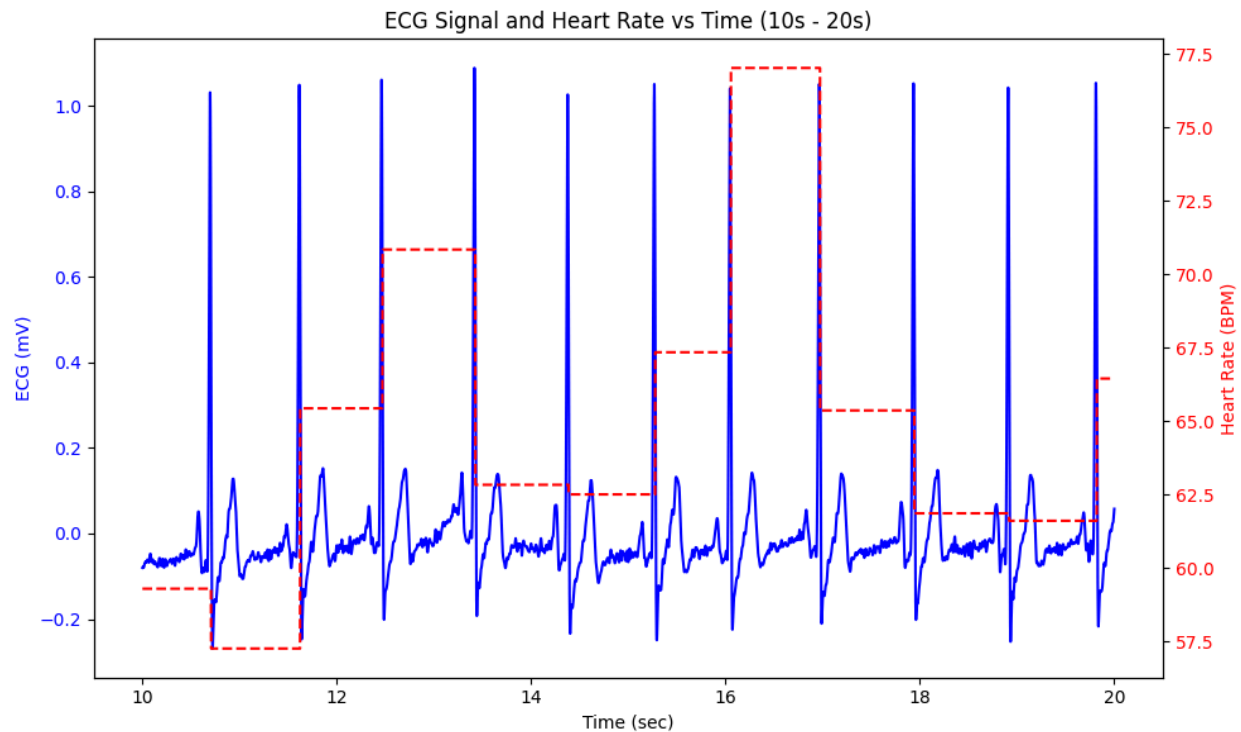


Figure (1): Segment of the ECG signal over the time period [10,20] seconds visualizing the electrical activity (left vertical axis), heart rate (right vertical axis), and time (horizontal axis).

Table 1 Durations and Amplitudes of ECG Waves

ECG waves	Duration (ms)			
	Sample 1	Sample 2	Sample 3	Mean
P wave	77	84	71	77.33
QRS complex	80	70	85	78.33
T wave	167	170	160	165.67
ECG waves	Amplitude (mV)			
	Sample 1	Sample 2	Sample 3	Mean

P wave	0.0516	0.0213	0.0637	0.0455
QRS complex	1.301	1.2963	1.2625	1.2866
T wave	0.1281	0.1525	0.1513	0.1439

Table 2 Durations of ECG Intervals

ECG intervals	Duration (ms)			
	Sample 1	Sample 2	Sample 3	Mean
P-R interval	125	134	135	131.33
Q-T interval	342	345	340	342.33
R-R interval	925	840	958	907.67

Table 3 Heart Rates

Heart rate (BPM)	Sample 1	Sample 2	Sample 3	Mean
	57.26	65.43	70.85	64.51

Kara

Analyzed file: ECG_Group 4_Data 3.csv

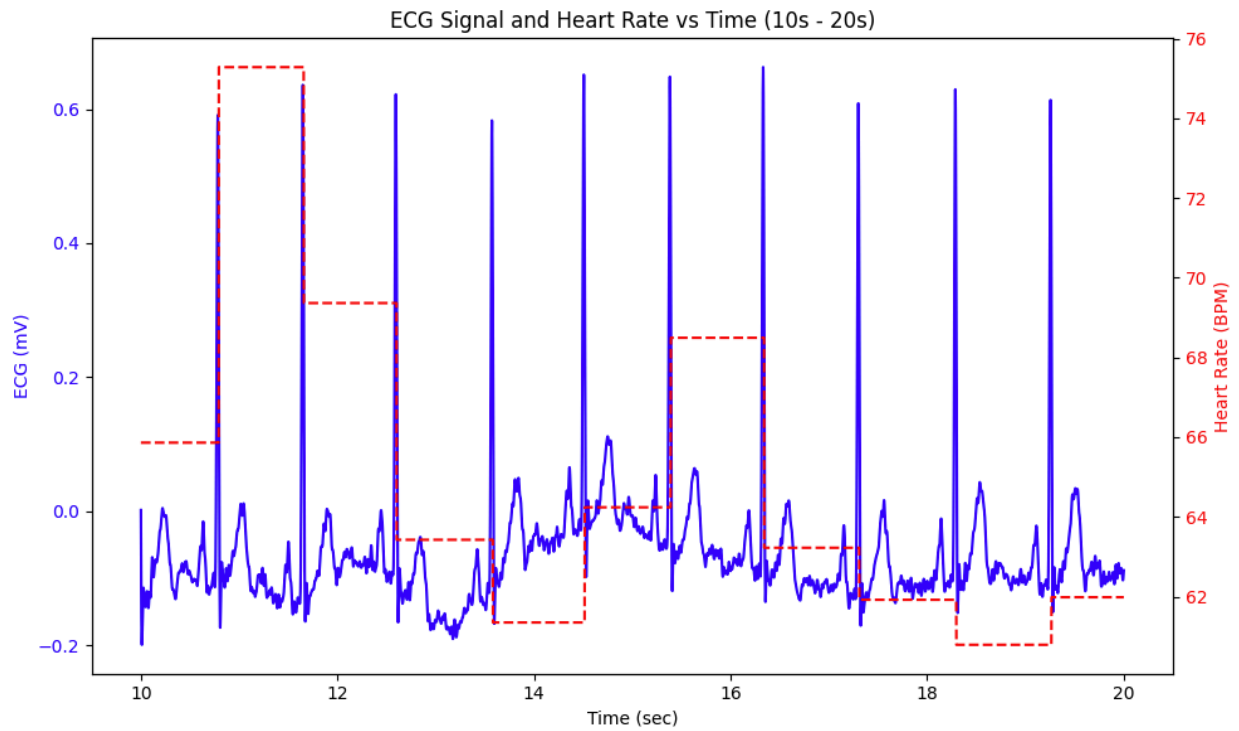


Figure (2): Segment of the ECG signal over the time period [10,20] seconds visualizing the electrical activity (left vertical axis), heart rate (right vertical axis), and time (horizontal axis).

Table 1 Durations and Amplitudes of ECG Waves

ECG waves	Duration (ms)			
	Sample 1	Sample 2	Sample 3	Mean
P wave	95	130	100	108.33
QRS complex	80	85	75	80
T wave	210	259	210	226.33
ECG waves	Amplitude (mV)			
	Sample 1	Sample 2	Sample 3	Mean
P wave	-0.0156	-0.0458	0.0012	-0.0201
QRS complex	0.591	0.636	0.622	0.616
T wave	0.0113	0.0031	-0.0388	-0.0081

Table 2 Durations of ECG Intervals

ECG intervals	Duration (ms)			
	Sample 1	Sample 2	Sample 3	Mean
P-R interval	165	185	175	175
Q-T interval	380	359	395	378
R-R interval	865	946	978	929.67

Table 3 Heart Rates

Heart rate (BPM)	Sample 1	Sample 2	Sample 3	Mean
	69.36	63.43	61.35	64.713

Bassant

Analyzed file: ECG_Group 4_Data 1.csv

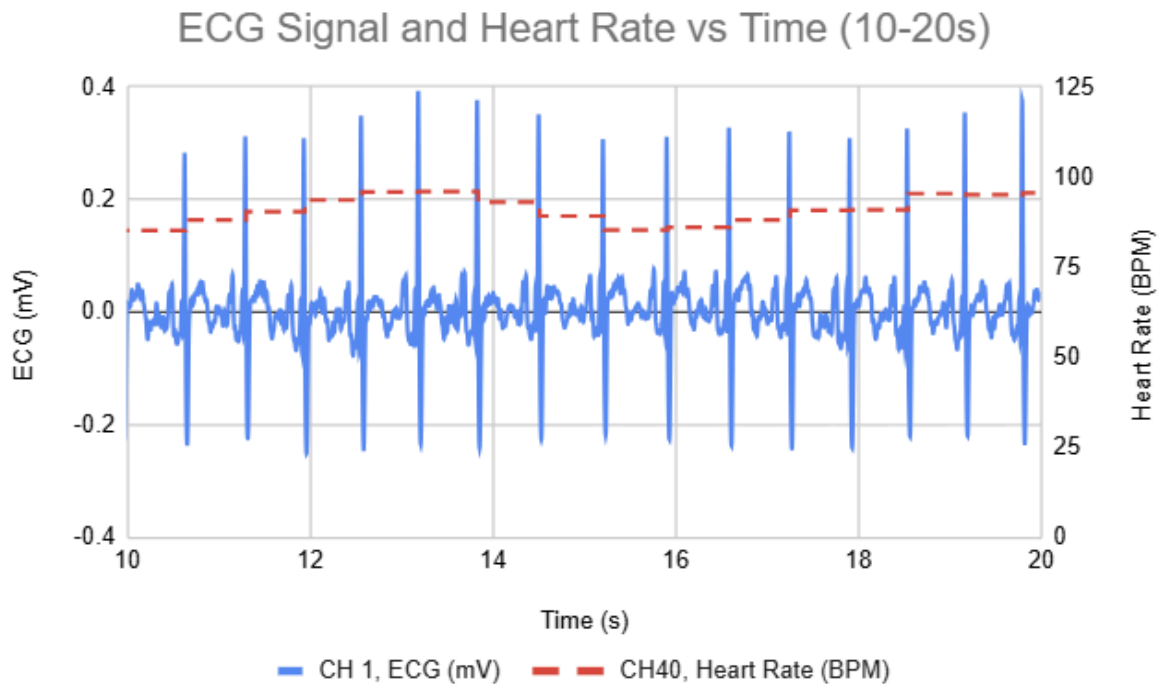


Figure (3): Segment of the ECG signal over the time period [10,20] seconds visualizing the electrical activity (left vertical axis), heart rate (right vertical axis), and time (horizontal axis).

Table 1 Durations and Amplitudes of ECG Waves

ECG waves	Duration (ms)			
	Sample 1	Sample 2	Sample 3	Mean
P wave	18	15	19	17.33
QRS complex	80	77	81	79.33
T wave	28	23	18	23
ECG waves	Amplitude (mV)			
	Sample 1	Sample 2	Sample 3	Mean
P wave	0.01892	0.033	0.0187	0.02354
QRS complex	0.517	0.5359	0.556	0.5363
T wave	0.0222	0.0372	0.01434	0.02458

Table 2 Durations of ECG Intervals

ECG intervals	Duration (ms)			
	Sample 1	Sample 2	Sample 3	Mean
P-R interval	20	16	22	19.33
Q-T interval	106	148	115	123
R-R interval	663	640	625	642.67

Table 3 Heart Rates

Heart rate (BPM)	Sample 1	Sample 2	Sample 3	Mean
	88.1	89.3	93.4	90.267

Reem Aboutaleb

Analyzed file: ECG_Group 4_Data 4.csv

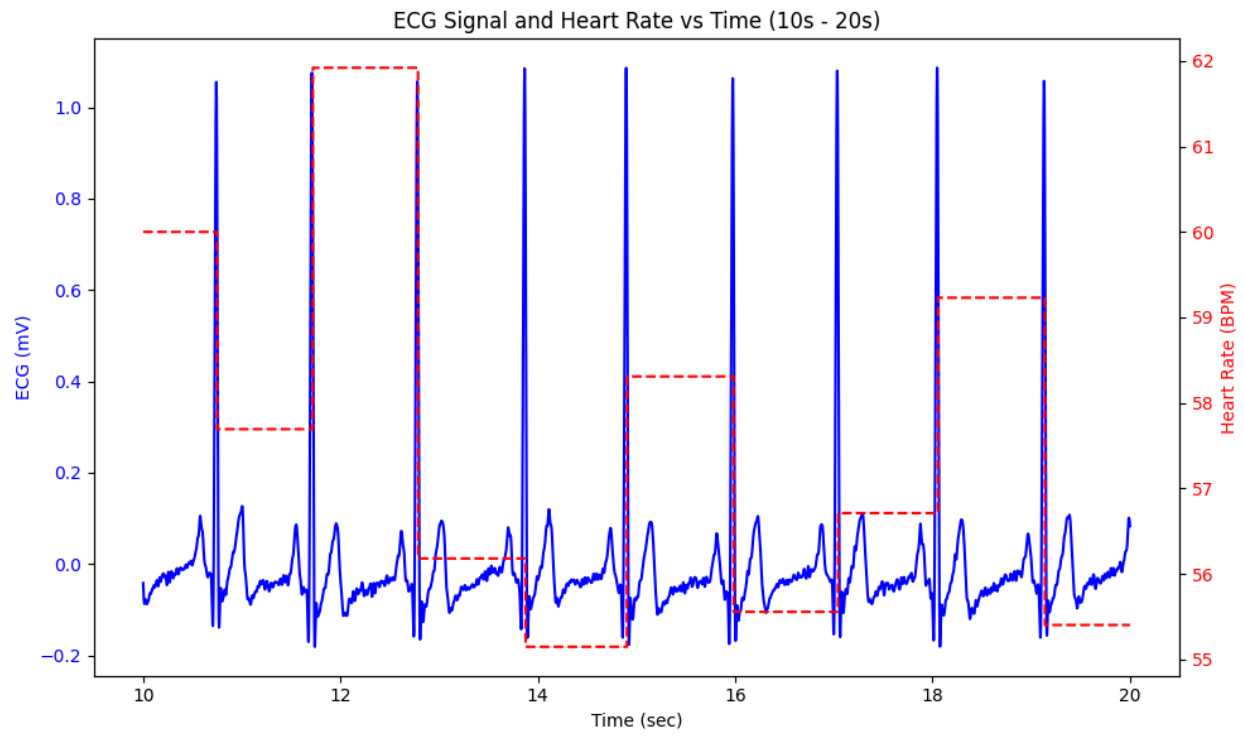


Figure (1): Segment of the ECG signal over the time period [10,20] seconds visualizing the electrical activity (left vertical axis), heart rate (right vertical axis), and time (horizontal axis).

Table 1 Durations and Amplitudes of ECG Waves

ECG waves	Duration (ms)			
	Sample 1	Sample 2	Sample 3	Mean
P wave	95.0	120.0	100.0	105.0
QRS complex	80.0	90.0	75.0	81.7
T wave	210.0	215.0	210.0	211.7
ECG waves	Amplitude (mV)			
	Sample 1	Sample 2	Sample 3	Mean
P wave	0.105	0.09	-0.025	0.057
QRS complex	1.055	0.03	0.072	0.386
T wave	0.127	1.10	1.056	0.761

Table 2 Durations of ECG Intervals

ECG intervals	Duration (ms)			
	Sample 1	Sample 2	Sample 3	Mean
P-R interval	150.0	160.0	155.0	155.0
Q-T interval	360.0	370.0	365.0	365.0
R-R interval	800.0	790.0	805.0	798.3

Table 3 Heart Rates

Heart rate (BPM)	Sample 1	Sample 2	Sample 3	Mean
	57.6	59.1	58.7	58.5

Mariam Zoair

Analyzed file: ECG_Group 4_Data 5.csv

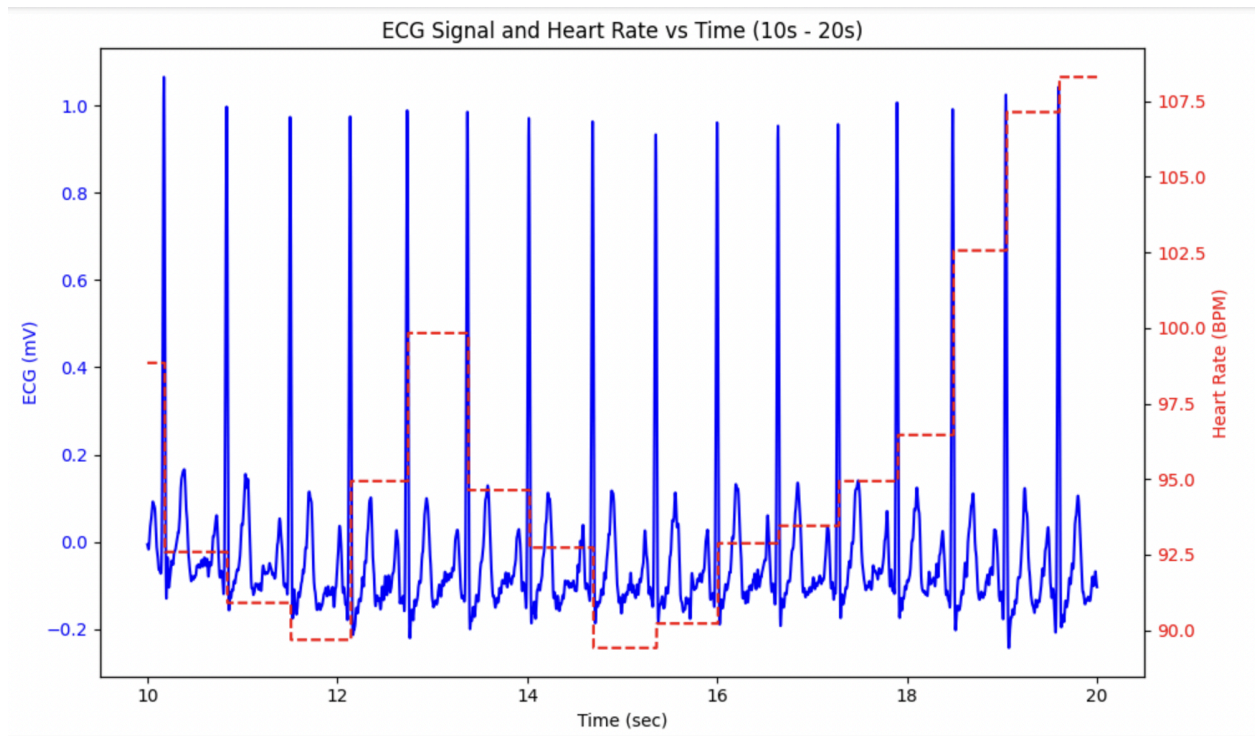


Figure (1): Segment of the ECG signal over the time period [10,20] seconds visualizing the electrical activity (left vertical axis), heart rate (right vertical axis), and time (horizontal axis).

Table 1 Durations and Amplitudes of ECG Waves

ECG waves	Duration (ms)			
	Sample 1	Sample 2	Sample 3	Mean
P wave	95	130	100	108.33
QRS complex	80	85	75	80
T wave	210	259	210	226.33
ECG waves	Amplitude (mV)			
	Sample 1	Sample 2	Sample 3	Mean
P wave	- 0.036	0.974	- 0.057	0.293
QRS complex	0.352	0.038	0.027	0.139
T wave	0.155	0.115	0.892	0.387

Table 2 Durations of ECG Intervals

ECG intervals	Duration (ms)			
	Sample 1	Sample 2	Sample 3	Mean
P-R interval	175	215	175	188.33
Q-T interval	385	474	385	414.67
R-R interval	1000	950	1050	1000

Table 3 Heart Rates

Heart rate (BPM)	Sample 1	Sample 2	Sample 3	Mean
	60.0	63.16	57.14	60.10

2) Group based statistical analysis task

Table 4 Group Statistical Analysis of Durations and Amplitudes for ECG Waves

ECG waves	Duration (ms)							
	Mean value from Saeed	Mean value from Kara	Mean value from Bassant	Mean value from Reem	Mean value from Mariam	Group mean	Standard deviation	Range [min, max]
P wave	77.33	108.33	17.33	105.0	108.33	83.264	39.088	[17.3, 108.33]
QRS complex	78.33	80	79.33	81.7	80	79.872	1.229	[78.3, 81.7]
T wave	165.67	226.33	23.00	211.7	226.33	170.61	86.184	[23, 226.33]
ECG waves	Amplitude (mV)							
	Mean value from Saeed	Mean value from Kara	Mean value from Bassant	Mean value from Reem	Mean value from member 5	Group mean	Standard deviation	Range [min, max]
P wave	0.0455	-0.0201	0.0187	0.057	0.293	0.0788	0.1233	[-0.0201, 0.293]
QRS complex	1.2866	0.616	0.556	0.386	0.139	0.5967	0.4277	[0.139, 1.2866]
T wave	0.1439	-0.0081	0.01434	0.761	0.387	0.2596	0.3213	[-0.0081, 0.761]

Table 5 Group Statistical Analysis of Durations for ECG Intervals

ECG intervals	Duration (ms)							
	Mean value from Saeed	Mean value from Kara	Mean value from Bassant	Mean value from Reem	Mean value from Mariam	Group mean	Standard deviation	Range [min, max]
P-R interval	131.33	175.00	19.33	155.00	188.33	133.80	67.51	[19.33, 188.33]

Q-T interval	342.33	378.00	123.00	365.00	414.67	324.6 0	115.71	[123.00, 414.67]
R-R interval	907.67	929.67	642.67	798.3	1000	855.6 6	139.34	[642.67, 1000.0]

Table 6 Group Statistical Analysis of Heart Rates

Heart rate (BPM)	Mean value from Saeed	Mean value from Kara	Mean value from Bassant	Mean value from Reem	Mean value from Mariam	Group mean	Standard deviation	Range [min, max]
	64.51	64.71	90.27	58.50	60.10	67.62	12.95	[58.5, 90.27]