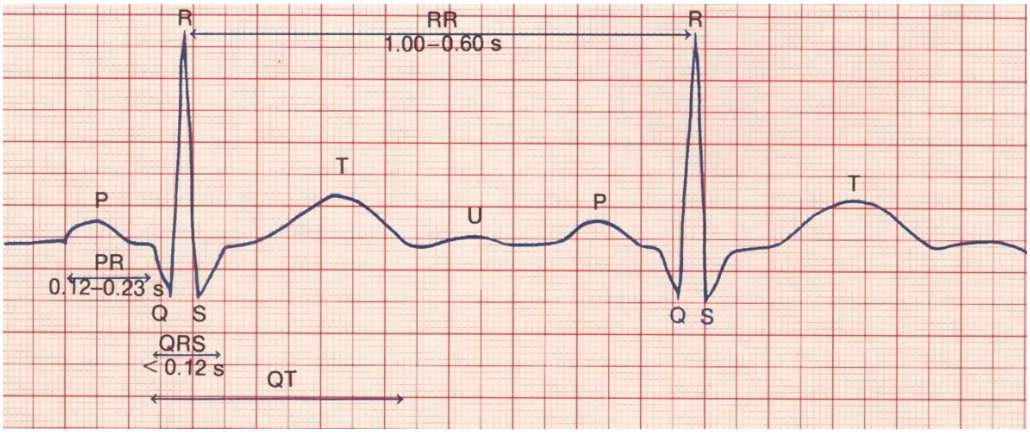
Digital Signal Processing Laboratory
Lab 8 Exercises

1. Please load a default electrocardiogram (ECG) signal, wecg, in MATLAB (the size of "wecg" is 2048×1). The sampling frequency, f_s , of this ECG signal is 180 Hz. You can calculate the sampling time interval by $1/f_s$. Please write a MATLAB program to complete the following tasks.
   (a) Plot the time-domain ECG signal.
   (b) Transfer the time-domain ECG signal to frequency-domain using FFT, and plot the power spectrum of the ECG signal.
   (c) Before taking the FFT, apply a hamming window with a length of 1024 points on the original ECG signal, and then plot the power spectrum.
   (d) Compare the heart rates obtained from (b) and (c) with the result, which is calculated by an average RR interval obtained in Lab 7 exercise.



報告繳交注意事項：

1. 報告中請標示學號與姓名，並將檔名改為學號_姓名(ex.B11102200_陳XX)。
2. 撰寫報告方式：(1)使用 MATLAB Live Script 撰寫程式，須執行結果，並輸出成 pdf 檔，上傳至 moodle 系統。(2)使用 m 檔撰寫程式，請將程式碼與執行結果截圖，複製貼上於 word 中，並轉成 pdf 檔案，上傳至 moodle 系統。
3. 評分標準：
   (1)實驗課當天(TUE)繳交：85 ± 10 分
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