Video Compression HW2 Answer Sheet

Name: 陳正宗 Student ID: 0756823 Department: 資訊組

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| * Perform 8x8 DCT and quantization with a uniform quantizer with step-size n on an image (grey scale).. (The rounding is used after dividing by the quantization step-size, as shown below).  * Decode the results (inverse quantization and inverse DCT) and calculate the MSE with respect to the original matrix when: (N=10, N=20)   C:\Users\Admin\Documents\MATLAB\vc_hw2_1.jpg  **N=10, MSE = 5.655045**  **N=20, MSE = 16.34142** |
| * Implement the following motion search on two images (grey scale).    + Use three-step search with search window size +/-7 to find the motion vectors of target frame from the reference frame. (block size: 16x16)   + Use full search with search window size +/-7 to find the motion vectors of target frame from the reference frame. (block size: 16x16) * Compare the mean of absolute difference (MAD) between these two algorithms and show the motion fields, respectively (sample motion field as shown below).   **Current Frame:** **Previous Frame:**  C:\Users\Admin\Documents\MATLAB\002.bmpC:\Users\Admin\Documents\MATLAB\001.bmp  **Three step search:**  C:\Users\Admin\Documents\MATLAB\vc_hw2_2_ThreeStepSearch.jpg  **Full Search:**  C:\Users\Admin\Documents\MATLAB\vc_hw2_2_FullSearch.jpg |