UNIVERSITI TEKNOLOGI MARA

OMR GRADER MOBILE APP USING IMAGE PROCESSING

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STUDENT'S DECLARATION

I certify that this final report project proposal and the project to which it refers is the product of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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ABSTRACT

Optical Mark Recognition (OMR) sheets have been used by many educational institutions. Marking process approach varied either using automatic OMR machine or manually marking the answers. By using the image processing techniques, researchers came up with solutions to automatically mark the answers without the need of OMR machine. In this project, OMR Grader Mobile Application is system prototype for OMR answer grading that had been developed to approach the automatic way of process the OMR answer without OMR machines based on image processing. The prototype developed is using OpenCV library for image processing purposes. Rapid Application Development (RAD) model is used in this project There are four phases in this development model, the requirement gathering, user design, development and cutover. The developed prototype main concerned is about accuracy. To know the accuracy of the system, accuracy test is used. There are three categories for the test, camera resolution test, grid lines alignment test and light intensity test. For the samples, five files were tested for each category. The camera resolution test included three camera resolutions, 0.3 MP with the 20 percent accurate, 0.7 MP with 100 percent accurate and 5.0 MP with 40 percent accurate. The test for grid lines alignment consists of three conditions, correctly aligned with 100 percent accuracy, slightly aligned with 40 percent accuracy and completely misaligned with 0 percent accuracy. The test result for light intensity for dark surrounding is 40 percent accurate, for the home light conditions is 100 percent accuracy and 80 percent accuracy for uneven lighting. For future works, the warp perspective functions should be applied to image processing algorithm to make the answer detection accuracy much precise.

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