# National University of Science and Technology

### Think in Other Terms

**FACULTY OF APPLIED SCIENCES**

**DEPARTMENT OF COMPUTERSCIENCE**

**PROJECT REPORT**

**FOR**

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**PROJECT TITLE:**

**SEMI-AUTOMATED DOMESTIC WATER METER READER**
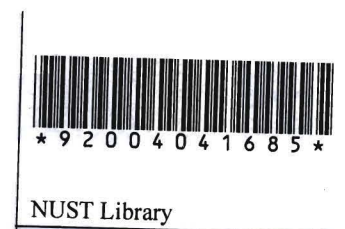
This project report is submitted in partial fulfillment of the requirements of the BSc (Hons)

Computer Science at the National University of Science and Technology

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## ABSTRACT

This project gives a solution for the municipality's manual water meter reading process by taking digital images of the meters and using OCR techniques to automatically read the meters. The research uses Tesseract and Leptonica libraries for the classifier training and validation. The results of the best performance test on the test data from the testing sessions is 63.5% accuracy. A prototype that reads meters from digital images is then developed. Once the meter region is detected on an image, template matching techniques are used to locate the meter reading. The meter reading region is then binarized and presented to an OCR engine for text reading. It is this reading that can then be transmitted to utility providers for customer billing. Various integrity checks are proposed to ensure the transmitted data is accurate to avoid losses to utility providers and customers. The research presents this prototype to demonstrate the ability to use current technologies to solve common problems within the society.