



**INFORMATICS INSTITUTE OF TECHNOLOGY**

IN COLLABORATION WITH THE

**UNIVERSITY OF WESTMINSTER, UK**

**THEEASYPiECE | AUTOMATED RDBMS USING HAND-  
DRAWN ENTITY RELATIONSHIP DIAGRAMS.**

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## Abstract

In modern society, automation plays one of the main roles in the software industry. Humans tend to develop automated systems in order to make things easier, accurate and efficient. When it comes to building a product that involves databases, the software engineers should have a visual representation to understand how each element of the product is interacting with each other. For this purpose they use diagrams. Such diagrams are initially drawn with either by hand or using a basic tool before it is processed further. ER diagrams are one of the most important and commonly used diagrams to represent how the entities of the database interact with each other. When a diagram has been drawn by hand or a tool, in order to create the respective SQL query, a developer will have to do manually by looking at the ER diagrams. This process is time-consuming and tedious. This research presents an automated system that will take a hand-drawn or a digitalized image of an ER diagram and convert it into a SQL query for MYSQL database with great accuracy. Additionally, in order to improve the accuracy of the system, a text requirement input was used. Image Processing and Natural Language Processing technologies were the main technologies that were used in the development of the research. The target audience of this research is software engineers, academics and business analysts.

**Keywords:** Image processing, Natural Language Processing, OCR, OpenCV, NLTK, Machine Learning