



Department Name: Computer Engineering Department

Project Type: Hardware

Project title: Automated Sample Preparation System

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Project's Abstract:

Preparing samples used for laboratory tests manually lacks precision and wastes time, but most importantly, it could jeopardize the laboratory technician's life as some samples carry contagious diseases. Thus, the presence of an automated sample preparation system has become a necessity.

We will be working on designing a system capable of performing this task automatically. The laboratory technician inserts the test tube containing the sample, and prepares the reagents to be used in the process. Once the laboratory technician specifies all the requirements, the process of preparing the final sample begins, an automated needle will draw in from each tube the amount specified earlier by the laboratory technician. Afterwards, the needle expels the carried substance into the tube that is labelled to hold the final sample. Each iteration in the process comprises adding an amount of a substance into the final sample tube, and cleaning the needle to make it ready for carrying another substance.