

## 0.1 Introduction

3D printers have taken over the world over the last decade and they have found use in industry, as well as in homes. The convenience of producing plastic parts at homes gathered attention of many hobbyists and makers. In industry, the ever-increasing production speed of 3D printers have made them suitable for rapid-prototyping, saving immense amount of time for product development and time-to-market. Civil engineers also found use cases for 3D printers: Mayorship of Istanbul has built its own 3D printed local service buildings within a week with a fraction of cost and build complexity.

In this feasibility study, the focus will be on an FDM printer's hotend temperature measurement with a thermistor.

Hotend temperature must be kept stable as fluctuations in hotend temperature would cause quality issues on the product, e.g. uneven surface finish and/or material deposition or nozzle clog. Therefore, the frequency at which the temperature is measured plays an important role.