Project 1

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Abstract

Introduction

Computing has had and still have an undeniable influence on science. has allowed scientist to explore everything from the tiniest scale of an atom, to tropical cyclones and galaxies. Therefore understanding the inner workings behind a computer program is critical in order to avoid unwanted errors. Errors which in the worst case can have catastrophic consequences [1].

Our aim is to investigate some of the common errors one might face if one doesn't think when developing code. To begin with we will look at a how to solve a second order differential equation, specifically the general one dimmensional Poisson's equation (1).

$$f(x) = -\frac{\partial^2 u}{\partial x^2} \tag{1}$$

Method

In order to solve 1 numerically, we need to discretize our problem. To make our computation simpler we assume Dirichlet boundary conditions.

References

1. Arnold, D. N. *The sinking of the Sleipner A offshore platform* `http : / / www - users . math . umn . edu / ~arnold / /disasters / sleipner . html`. (accessed: 01.09.2019).