Technical Specifications

# Introduction:

What’s Shakin’, Baby is a script designed to run with ESRI’s ArcMap application. It takes in elevation and earthquake intensity data and creates a hazard map according to slope and peak ground acceleration.

# Background:

## How its Built

The script was programed using a combination of ArcMap’s model build, python, and Notepad++. A geoprocessing model was first developed in ArcMap’s model builder to find the slope, create an interpolated intensity terrain, and multiply these two items together. This model was than exported to a Python Script and this script was looped through the earthquake intensity data.

## Who Built it

What’s Shakin’, Baby was designed as part of a Brigham Young University Civil Engineering class project. The primary programmers were Ryan Moore and William Garner.

# Software and Hardware Requirements

The software is designed for use with ArcMap version 10.2. Software and Hardware requirements are the same as ArcMap Version 10.2 and can be found on the ESRI website at <http://resources.arcgis.com/en/help/system-requirements/10.2/index.html#//015100000002000000>.

# Licensing

This program is licensed according to the MIT License developed by the open Source initiative.

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# Installation

Minimum installation requires the installation ArcMap 10.2 and the download of a selected folders.

# Distribution and Technical Support– Where can I get one?

For technical support and to obtain a copy please contact William Garner at [will.j.garner@gmail.com](mailto:will.j.garner@gmail.com) or Ryan Moore at [leroytheotter@gmail.com](mailto:leroytheotter@gmail.com).

Software Design

# Purpose

Earthquakes cause significant damage and loss of life. These damages can be mitigated by construction in areas less hazardous to earthquakes What’s Shakin’, Baby is a script designed define the hazard level of a location of interest and thus providing a safer area for construction.

# Structure

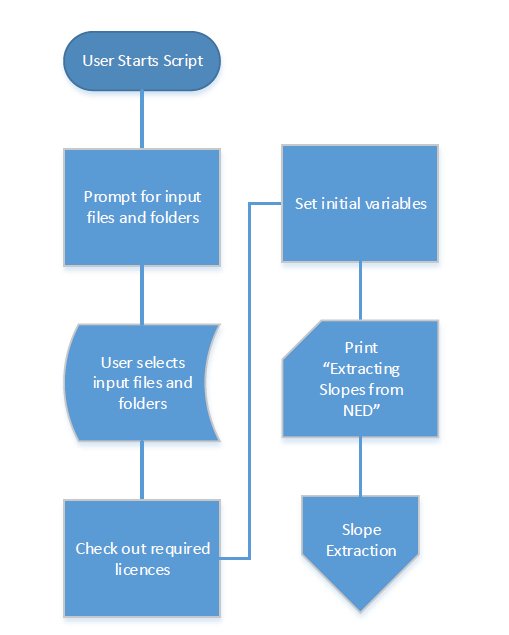


Figure 1: Script Setup and Initialization

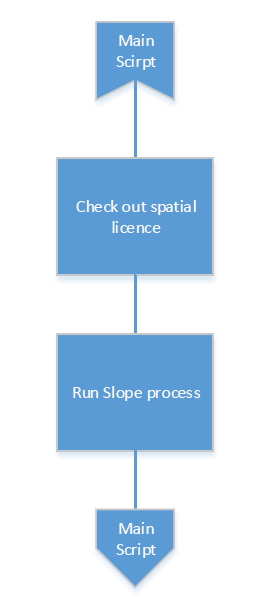


Figure 2: Slope Extraction Function

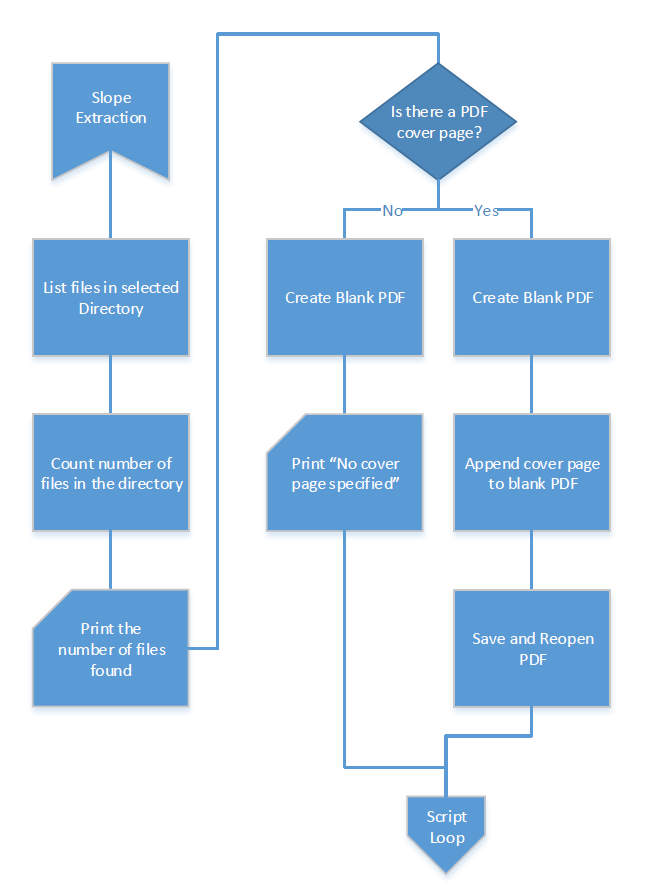


Figure 3: File Location and PDF Output Setup

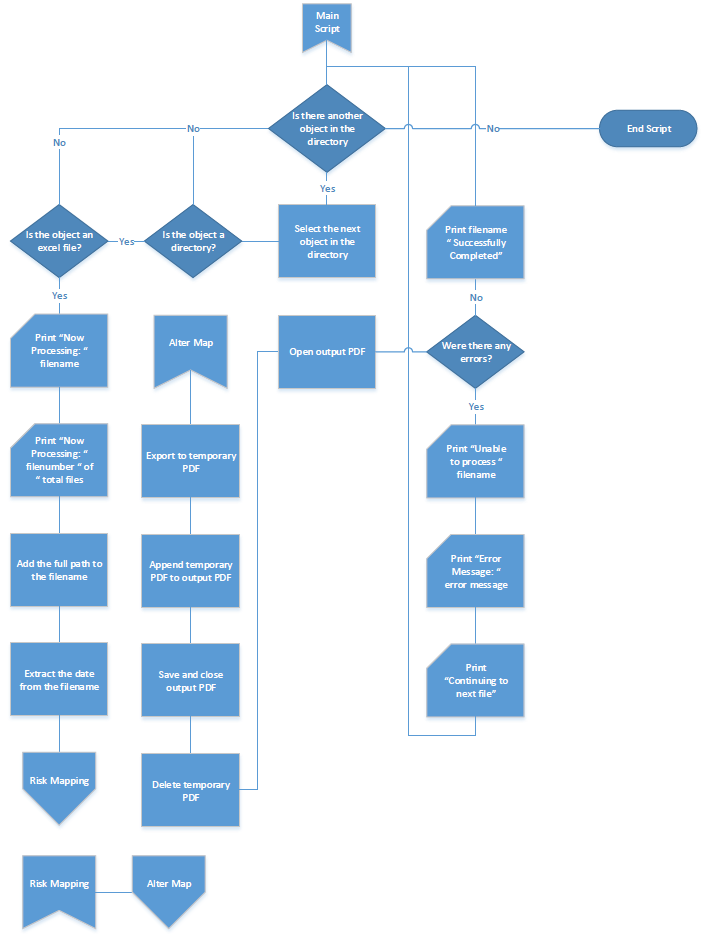


Figure 4: Main Loop

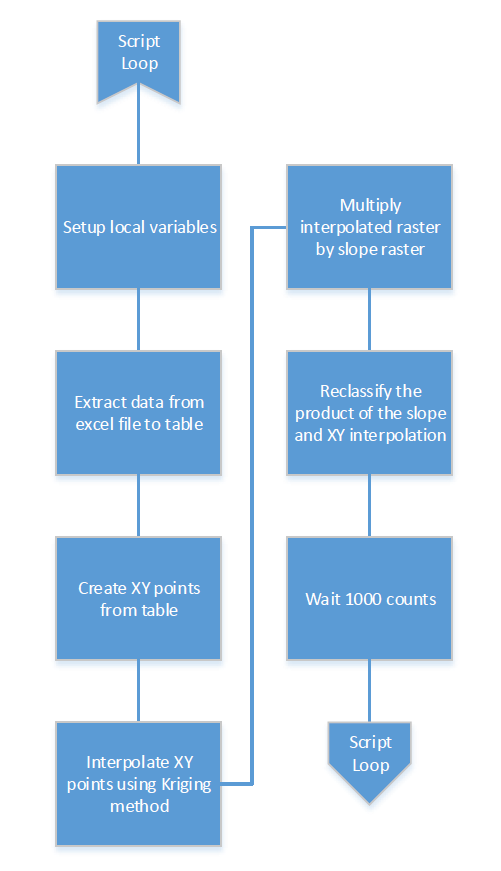


Figure 5: Risk Mapping Function

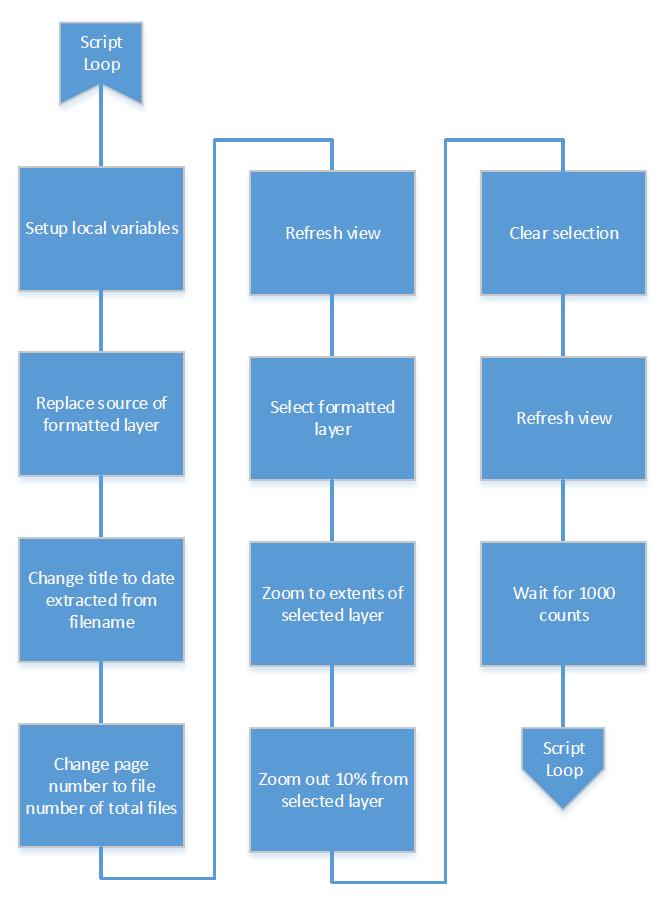


Figure 6: Alter Map Function

## Main Files

## Classes and Functions

UML Class Diagram

## Why is it structured this way?

# Interface Elements

UML Sequence diagram