# Project Report

**For**

**ACLED DATA ANALYSIS SYSTEM.**

By GROUP 58

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# Purpose

Group 58 as part of our second year recess project prepares this report document and we confirm that it is the original work done by group 58 members.

The main purpose of this report is to bring out the analysis, software used, Hardware used, skills learnt and challenges faced by Group 58 during analysis of ACLED data.

This report describes what we learnt from the development of this project during the second year recess term.

# Intended Audience

This document is primarily for the organization that will put this project to use particularly ACLED. However, project managers and supervisors may read the report.

# Objective

ACLED data contain information on specific dates and locations of conflict events, the types of events, the groups involved, reported fatalities and changes in territorial control. ACLED covers political violence in all African countries.

The main objective of this report is to

* Determine the fatality rate in Uganda and in different regions.
* Assess the impact of violent incidents in different parts of Uganda.
* Determine level of peace in Uganda.
* Show what parties caused the most insurgencies.

# Software used during the project

The following table shows the software used and the purpose. The following software’s were used during development of the project.

|  |  |
| --- | --- |
| **Software** | **Usage** |
| Microsoft windows | Main Operating system |
| Microsoft word | Word processor |
| Microsoft Visio | Diagram drawings |
| Sniping tool for windows | Taking screenshots of images for documentation purpose |
| NetBeans IDE | Integrated development environment, PHP for this case |
| R studio | Integrated development environment for R programs |
| Apache 2 | HTTP server software |
| PHP | Server side scripting |
| Opencpu | Custom R HTTP server for running R functions remotely |
| MySQL | Database management software |
| Microsoft Excel | Spreadsheet |

# Hardware used during the project

The following hardware used during the project. The table below shows the hardware used and the purpose.

|  |  |
| --- | --- |
| **Hardware** | **Purpose** |
| Laptop | Used to access the system and also to develop the system |
| Mouse | Navigation on the GUI of the system |

# Skills learnt

Development of the ACLED data analysis system enabled the group 58 members to acquire some skills in the process. During development, we learnt the following skills.

* Development of the system as a team
* Communication skills with supervisors
* Time management
* Source code management using GitHub
* Documentation of software including
  + Concept paper
  + Software requirements specification
  + Software design document
  + Analysis report
  + Project Report
* R programming
* Data analysis
* PHP programming
* Web application development
* Apache Web Server management
* Writing R packages
* Database management using MySQL
* Data security and safety
* NetBeans IDE usage
* Diagram drawing with Microsoft Visio
* System integration with R, PHP, HTML5, CSS3, and JavaScript
* Using PHP code-Igniter framework
* Using bootstrap CSS library
* Using JQuery JavaScript library
* R studio IDE usage

# Challenges faced

## Technical challenges

Now we know how much is important to be ready for all kinds of related technical problems. Once our meetings were cancelled, since we could not get things to work as expected. The main reason was that we were still not experienced enough will all the kinds of problems that could happen.

# Project Experiences

## Positive Experiences

### Discussions

Since the complete project was done in one place, we decided to use the discussion as the primary way of communication. Discussion was great since we did not have to spend lots of time and everyone involved in a communication could get the same amount of time and attention as it was required.

We also used e-mail as the primary way of exchanging the files since it uses push technology and notifies the user as soon as some change occurs. It is also much easier to use if all of the participants do not have constant Internet connection but have only limited access to the Internet as it was in our case.

### Good interface design

Since the interface between two major parts of the project was already defined at the first week of the project and the final version was concluded two weeks later, we knew exactly what we must do and we had no problems with final integration that was the most feared part of the project.

### Large amount of motivation

We managed to get the quite high team spirit and everyone involved into a project was doing his best. No one had to do things that he was not able to do and everyone had the same goal, to be finished on time with satisfying results. This kind of team spirit got some things moving and finished on time even if there was extremely little amount of time given.

### Transparency

A lot of motivation was raised since the complete project was well defined at the beginning and since everyone knew exactly what was expected from then and what should their output be. Without each team member knowing exact requirements team spirit could have been lost.

## Negative Experiences

### System integration

We faced challenges in attempts to integrate PHP and R code during the design of the system. However, we later resorted to a fair option of using Opencpu R package for this purpose.

### Data collection

Data that we needed for this project was hard to find. We found multiple datasets that did not meet the requirements given by the supervisors. We however later found the data.

### Time factor

We had a challenge of having limited time due to strikes by non-teaching staff as all faculties were closed and we could not access some facilities we needed during this project.

# Conclusion

Special thanks to the members of group 58 for their consistent efforts during this project from the data collection to this final stage of writing this report. Appreciation to the Recess supervisors for giving tutoring and guidance of this project.

We are grateful to have successfully amid the challenges we faced completed this project