



# Introduction to Develop Some Software Programs for Dealing with Neutrosophic Sets

A. A. Salama<sup>1</sup>, Haitham A. El-Ghareeb<sup>2</sup>, Ayman M. Manie<sup>3</sup> and Florentin Smarandache<sup>4</sup>

<sup>1,3</sup> Department of Mathematics and Computer Science, Faculty of Sciences, Port Said University, Egypt. Email: drsalama44@gmail.com

<sup>2</sup> Department of Information Systems, Faculty of Computers and Information Sciences, Mansoura University, Egypt

<sup>4</sup> Department of Mathematics, University of New Mexico Gallup, NM, USA , Email: smarand@unm.edu

**Abstract.** In this paper, we have developed an Excel package to be utilized for calculating neutrosophic data and analyze them. The use of object oriented programming techniques and concepts as they may apply to the design and development a new framework to implement neutrosophic data operations, the c# programming language, NET Framework and Microsoft Visual Studio are used to implement the neutrosophic classes. We have used Excel as it is a powerful tool that is widely accepted and used for statistical analysis. Figure 1 shows Class Diagram of the implemented

**Keywords:** Neutrosophic Data; Software Programs.

## 1 Introduction

The fundamental concepts of neutrosophic set, introduced by Smarandache in [8, 9] and Salama at el. in [1, 2, 3, 4, 5, 6, 7], provides a natural foundation for treating mathematically the neutrosophic phenomena which exist pervasively in our real world and for building new branches of neutrosophic mathematics. In this paper, we have developed an Excel package to be utilized for calculating neutrosophic data and analyze them. We have used Excel as it is a powerful tool that is widely accepted and used for statistical analysis. In this paper, we have developed an Excel package to be utilized for calculating neutrosophic data and analyze them. The use of object oriented programming techniques and concepts as they may apply to the design and development a new framework to implement neutrosophic data operations, the c# programming language, NET Framework and Microsoft Visual Studio are used to implement the neutrosophic classes.

## 2 Related Works

package. Figure 2 presents a working example of the package interface calculating the complement. Our implemented Neutrosophic package can calculate Intersection, Union, and Complement of the neutrosophic set. Figure 3 presents our neutrosophic package capability to draw figures of presented neutrosophic set. Figure 4 presents charting of Union operation calculation, and figure 5 Intersection Operation. neutrosophic set are characterized by its efficiency as it takes into consideration the three data items: True, Intermediate, and False.

We recollect some relevant basic preliminaries, and in particular, the work of Smarandache in [8, 9], and Salama at el. [ 1, 2, 3, 4, 5, 6, 7 ]. The c# programming language, NET Framework and Microsoft Visual Studio are used to implement the neutrosophic classes.

## 3 Proposed frameworks

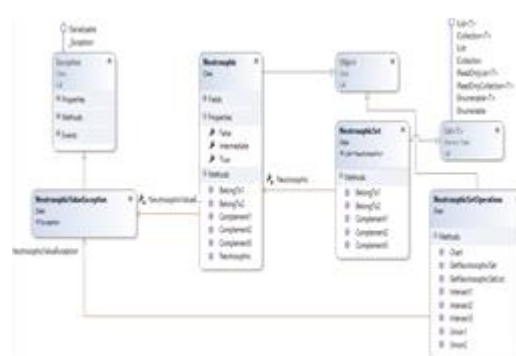


Figure 1: Neutrosophic Package Class Diagram.

We introduce the neutrosophic package class diagram

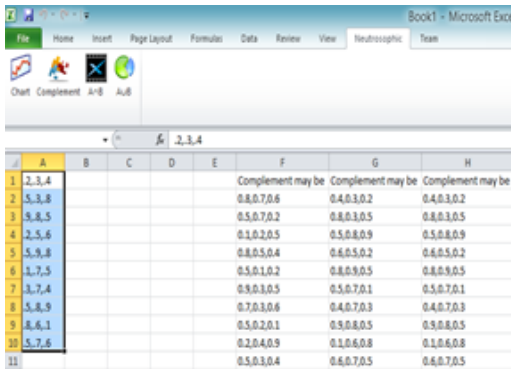


Figure 2: Neutrosophic Package Interface and Calculating Complement.

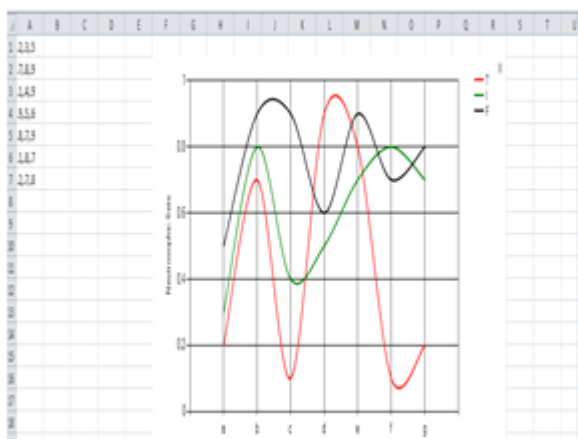


Figure 3: Neutrosophic Chart

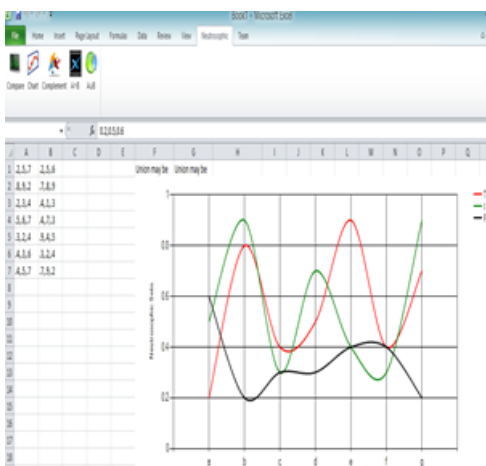


Figure 4: Neutrosophic Package Union Chart

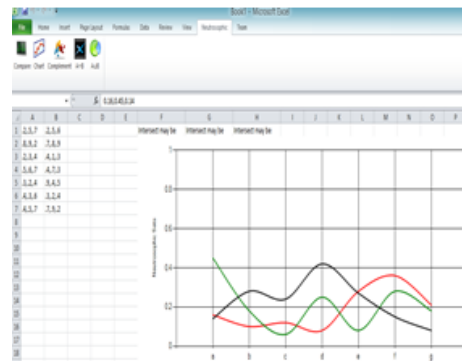


Figure 5: Neutrosophic Package Intersection Chart

#### 4 Conclusions and Future Work

In future studies we will develop some software programs to deal with the statistical analysis of the neutrosophic data.

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Received: June 1<sup>st</sup>, 2014. Accepted: June 12<sup>th</sup>, 2014.