PROJECT CHARTER

Project Information

Project ID	P18
Project Name	Element database and Analytical system
Project Manager	
Project Sponsor	Vladimir Brusic

Historic of Versions

Date	Author	Reason for new version	Version

Business Need, Problem or Opportunity

<What is the context for the project? Briefly state what business need, problem or opportunity is the project going to address.>

Access to affordable, healthy, and nutritious food is among the key determinants of health. Chemical elements are important for nutrition and health. Analysing the chemical composition of food is the method to judge the quality of food. Data representing elemental composition in various foods data are accumulating at an accelerating speed, but these data are scattered across literature and various web sites and are not available in a unified information system. This project will create the database to store the recording element and samples data in matrix， and build the analytical system (including functionalities for search, visualization, basic statistical analysis, and classification tasks).

Project Objectives

<List here your project objectives.>

1. **Data.** Data collection cleaning and standardization will be performed to provide the content of the database. Data will be collected from literature, company catalogues, data repositories, and directly from the researchers.
2. **Background knowledge**. Metadata will be developed to assist in understanding the type of samples and help classify them. Standardized nomenclature and ontologies will be used whenever possible. Reference values of elemental concentrations for various foods will be established to allow identification of contaminants, measurement artefacts and out-of-range elements (harmful, or nutrients).
3. **Database and analysis system.** The software product will have the following elements:
    a. Software (user interface, database, analysis system, help pages, and visualization module)
    b. Testing and maintenance components (these will be basic for a prototype)

Expected Benefits

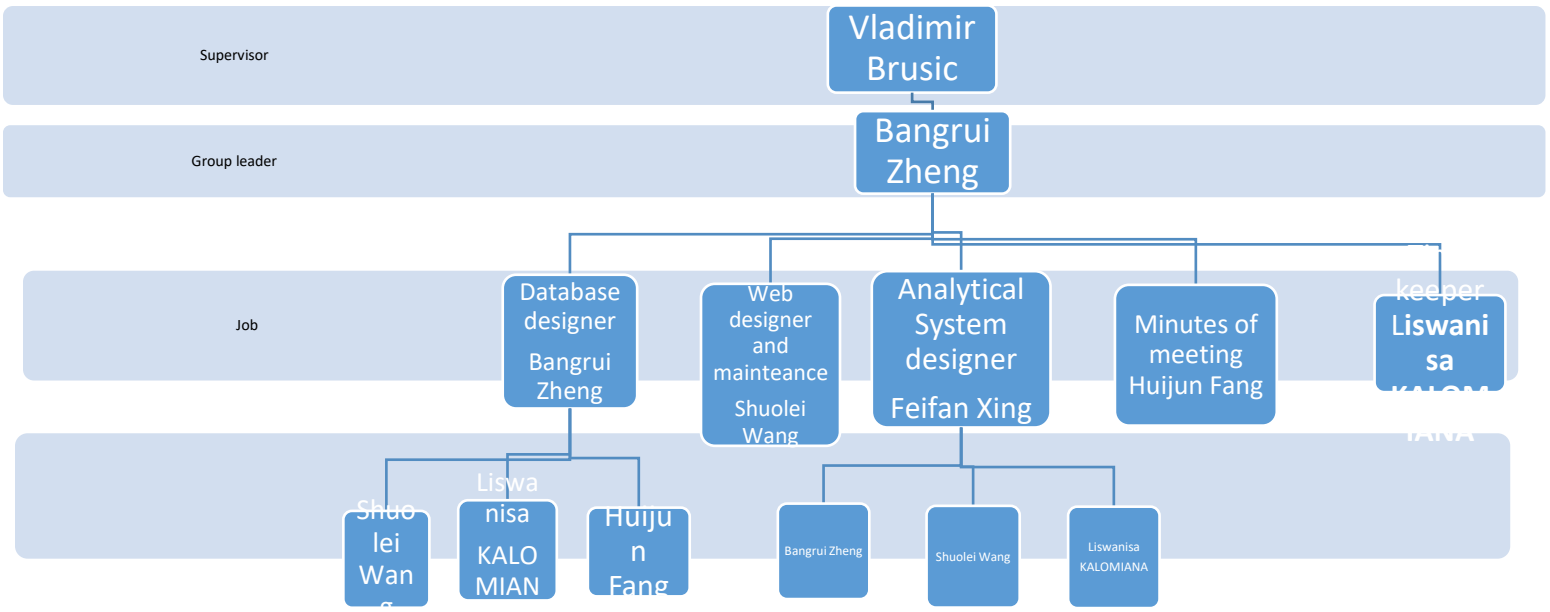
<Outline the key benefits to be realised by the project.>

If the project has been finished, the simple way to assess food quality even body situation.

1. The systematic database with element and sample will be established.
2. According to record and analyze the different state data, the analytical system have many application such as assessment of safety of foods, identification of origin of food, forensic analysis of food, as well as health applications in human and animal nutrition.
3. Elemental profiles in various foods enable the assessment of safety, security, and quality of food as well as prevention of food crime

Project Organization

<Use the diagram below to illustrate the project organization, such as steering committees and the project team.>



In Scope

<List what is in scope for the project>

1. Complex food data will be combined with elemental profiles of around **70** elements and stored in a database and analysed using an analytic system that will enable us to trace the origin and access the quality and also make an assessment of safety, security and quality of food.

2. Data collection will only be done through reading of literature, company catalogues , data repositories, and directly from the researchers rather than testing the elements ourselves and coming up with our on measurements.

3. This project will only utilize the Spiral model for software development.

4. The emphasis of this project is the development of robust software prototype that will fufill only the scientific need for elemental analysis in food.

5. One main goal of this project is to implement an analytical tool that will have a limited amount of features one of which will include feature selection for classification using neural networks.

Out of Scope

< List what is out of scope of the project >

1. While there are different types of software developing life cycles (SDLC) this project will not use the waterfall model, V-Shaped model, Iterative and Incremental method etc but will mainly focus on the spiral method (SDM) for software development.

2. As of 2016 there are around **118** confirmed elements in the periodic table. This is a huge number and not all profiles of these elements will be added to our database.

3. The robust software prototype will not be able to fulfil any needs outside the elemental analysis in food.

4. Any features outside the ones mentioned in point number five of the analytical tool are highly unlikely.

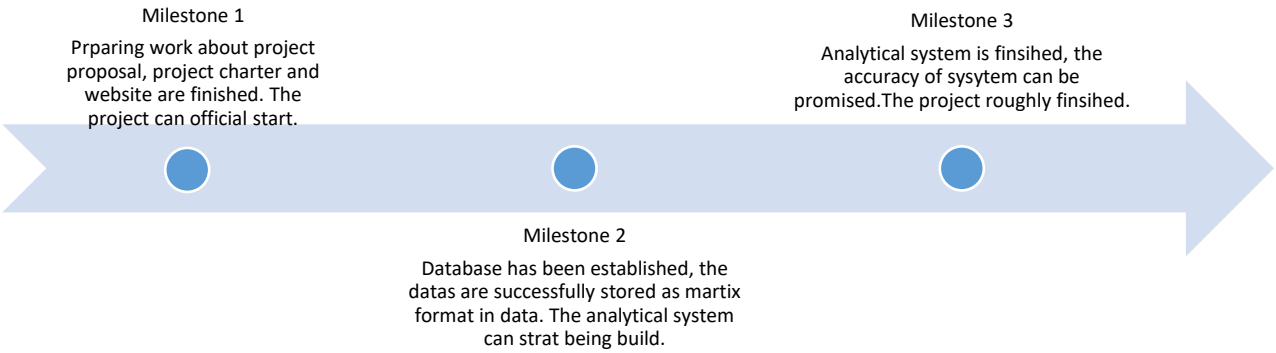
Key Deliverables

<List here the key deliverables of the project>

1. A systematic database with food sample and data. The data structure is matrix, the elements in rows and samples in columns.
2. An analytical system used to assess the elements and analyze the condition.
3. The interim group report.
4. Final group report.

High-Level Timescale

<Use the diagram below to identify your key milestones.>



<List any known constraints and deadlines impacting the schedule of the project.>

The known deadline:

1. Interim reports-13.11.2018
2. Final reports-11.04.2019
3. Prensentation-24.04.2091

High-Level Budget

<Identify what budget needs are anticipated, providing a rationale for each rubric.>

	Estimate	Comment
Revenue		
Capital		
Total Budget		

Key Project Assumptions

<Outline key project assumptions which can impact the project if proven false.>

ID	Assumption	Importance	Impact if false
1	The element has obvious difference between different kinds of food.		
2	The method to inspect element is more efficient than other detection method		

Key Project Risks

<Outline key project risks which can impact the project if they materialize.>

ID	Risk	Probability	Impact	Mitigation
1.	Delay in the development and implementation of the database	low	The project cannot be finished, or incomplete.	Through iterative improvement of the software solution, rigorous application of software engineering practices, and implementation of formal methods of managing and monitoring progress using ISO software quality principles [8].
2.	The accuracy of analytical system is very low.	medium	The quality of project will be influenced	While the database is partial accomplished, start doing the partial analyse as soon as possible. The faster speed to establish the database, the more time left to improve accuracy.
3.	After building database, the relationship between data exist logical or structure error.	low	The database has wrong may influence follow-up analytical work.	Detailed planning before establish the database, doing the E-R diagram, draw the relationship diagram and recognize the key in each relation.

Success Criteria

<List the criteria on which the success of the project will be measured.>

ID	Success Criteria
1.	**The large enough database is established.**
2.	**The data is in right format.**
3.	**The accuracy of analytical system can be proved to 75%.**
4.	**The requirements are all finished.**

Project Charter Sign-off

<List the names of the approvers of this Project Charter.>

Name	Role	Approved on	Signature