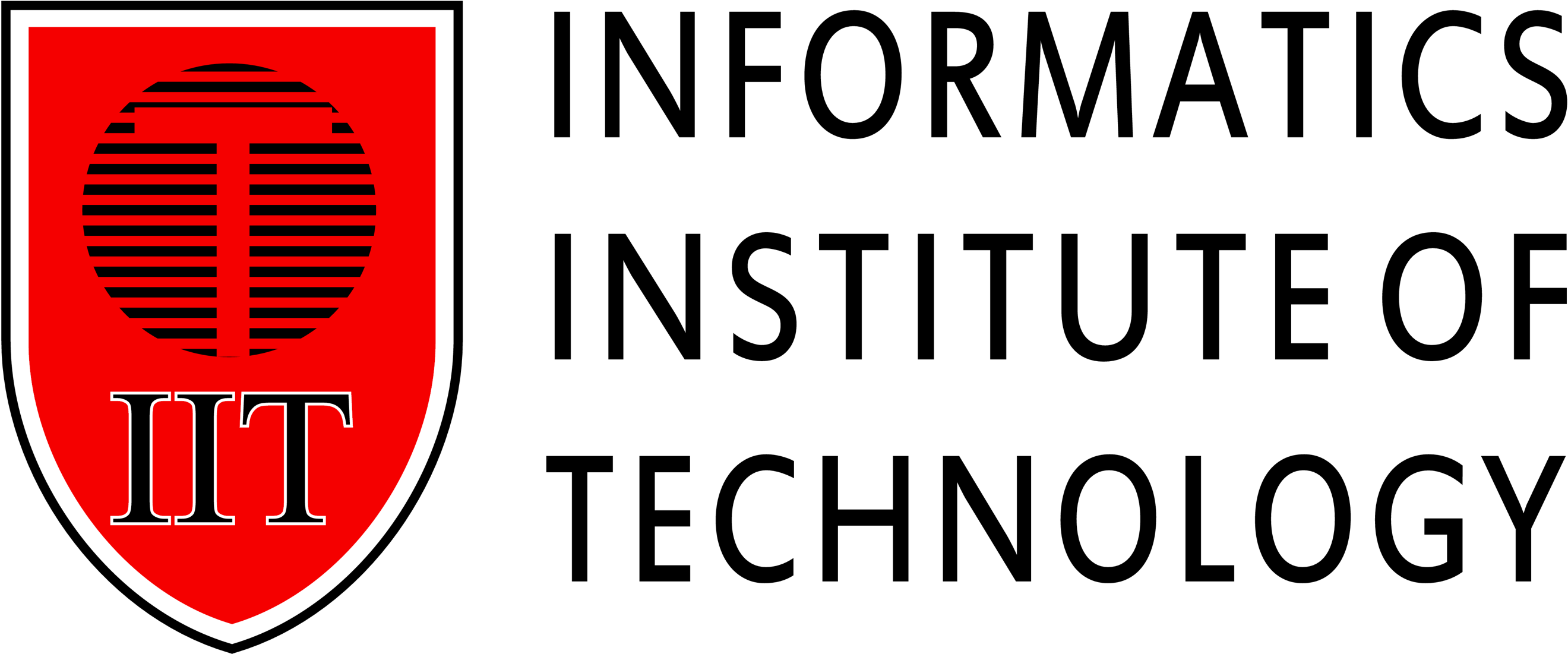
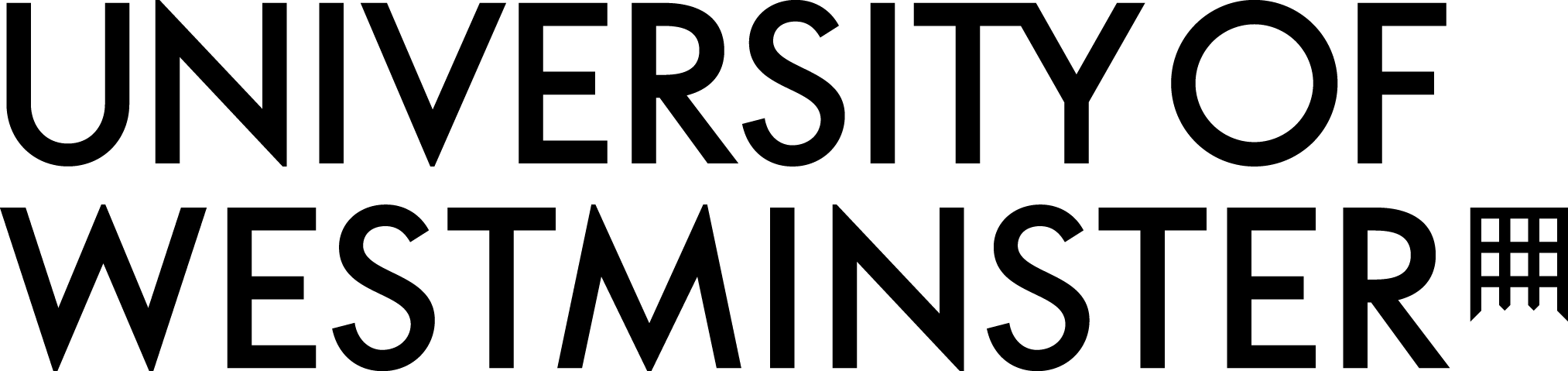
****

**INFORMATICS INSTITUTE OF TECHNOLOGY**

**In collaboration, with**

**UNIVERSITY OF WESTMINSTER (UoW)**

BSc/ BSc (Hons) in Computer Science

Final Year Project 2017/18

Project Initial Document

For

**User Experience enhancement in Scrum**

**using Gamification elements**

By

2014081

Vishwa Kanahcna Perera

Supervised by

Mr. Pumudu Fernando

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature of Supervisor Signature of Student

# Background

In Software Industry, Rapid Iterative Production Prototyping (RIPP) is an idea that was concaved out of dissatisfaction with waterfall software design approach which often caused to produce outdated products or inefficient product by the time it is being released to the market. In order to achieve higher outcome James Martin, Arthur of Rapid Application Development stated the philosophy focused on quickness in using techniques like prototyping, Iterative development and Time boxing.

Even recently, Agile methodologies are showing a reasonable growth in adaptation in project management area. Mostly due to its RAD development foundation. Under Agile there are different types of Variations in adaptation/Methodologies. Such as; Scrum, Extreme Programming (XP), Crystal, Dynamic Systems Development Method (DSDM), Lean Development, and Feature-Driven Development (FDD). Each methodology has a unique approach while having the common vision and core values which is stated in Agile Manifesto.

Figure 1: Common vision stated in Agile Manifesto (Agilemanifesto.org, 2017)

All these methodologies contain continuous planning, continuous implementation, continuous testing. In other terms, continuous evolution in both software and project. Methodology which will be chosen by the team varies according to the requirement classifications in the project. Among such, Scrum methodology has shown most effective productivity against the uncertain requirements and in places where there is a large part of the figuring out certain parts in the software.

Scrum is a well define software development process under above mention qualities. But the Problem that the author focus on is, Experience which the developer happens to go through in a Scrum. Even though theoretically it must be positive, there are occasions where developer undergo dissatisfactions due to certain qualities of the Scrum itself.

As an example; Since the product owner has the full authority in deciding which feature should be there and which should not be there, there occurs situations such product owner decided to remove a feature which the developers been developing for quite some time. At moments like this, Developer’s frustration builds up. The author himself has being in a situation as such during his Industrial training period.

This Motivated the author to take this as a final year project problem as it’s a requirement of BSc (hons) Computer Science. Also, author believes that using of proper gamification elements could be the solution for the user experience issues with in the Scrum methodology.

# Define the Problem

Reduction of motivation and user engagement with-in developers due to uncertain decision by product owner and Lack of resources within the team.

# Rationale

As Scrum was there for some time, there are several occasions where Scrum has been modified into some other hybrid methodologies, such as Disciplined Agile Delivery (DAD). Which is to tackle the filling in the process gaps that Scrum purposely ignores.

But as per combined solution, which is using of Gamification Elements on Scrum, in order to boost productivity first came into play when “Davi Gabriel da Silva” who is certified Scrum Master put forward his idea on avoiding bad practices on Scrum using gamification elements.

He explained that *“gamification is a living trend”* (Scrumalliance.org, 2017).

Gamification was initially introduced to the grab the attention of the customer and to boost the sales outcomes, in recent times almost every software which is built focusing the human interaction has somewhat of a gamification element included. Davi, further explained “*By the end of 2015, he predicts, more than 50 percent of organizations that have innovation processes will gamify them”* (Scrumalliance.org, 2017).

With saying that, purpose of the project is to, give out a positive experience for the developers who are practicing Scrum. To boost the enthusiasm and engagement of the developers which will then give out the productivity as a bi product. In modern days, work space enthusiasm is major concern as per retaining employees for a longer period of time. Which will support the upward progress of the company.

# Domain

As defined by the author,

# Aim

* To produce a new framework enhancing Scrum, where it’s possible to enhance out comes of a sprint.
* To apply gamification on Scrum framework to increase the productivity among Scrum team.
* To producing a positive motivation with in the team.
* To Increase the positive experience in using Scrum

# Objectives

## Research Objectives

* Gather information on different gamification mechanism;

in order to produce the best user experience first task would be analyzing all the gamification mechanisms which have we development up till now and to choose which is best suitable for the Scrum framework

* Analyze the Scrum framework in depth;

To apply gamification machines in the Scrum framework, knowing all the sensitive part in the framework is a must, and to avoid damages to the Scrum framework by any means

* Analyze current software which is practicing Scrum framework

There are several software’s which practices Scrum framework (JIRA, Bitrix24). Which include set of basic features which represent the core features of the Scrum. Analyzing which is necessary and which is additions is a must before producing a new system.

* Analyzing gamification mechanism in depth

It is said that not every gamification mechanism will fit in with everything, need to do a survey to find out which mechanism will be the most appropriating to enhance the experience Scrum for the developer

* Analyze existing systems with the gamification

In order to achieve the expected user experience, it’s always a plus point to analyze the pros and cons in the existing system, which may or may not include gamification aspect

* System comparison after the adaptation of the gamification

Checking the improvements and deteriorations of the system after the adaptations of the selected gamification mechanisms

## Common Objectives

# Scope

Develop a system which enhance the productivity of developers who are using Scrum Methodology. Deliverable would be the Browser plugin and a web application which include a Scrum management system. Browser extension is to allow user to have quick access/ quick view of the progress of himself to access the system in a high level. Web application is the full system which will hold base of the system, Project Management Application.

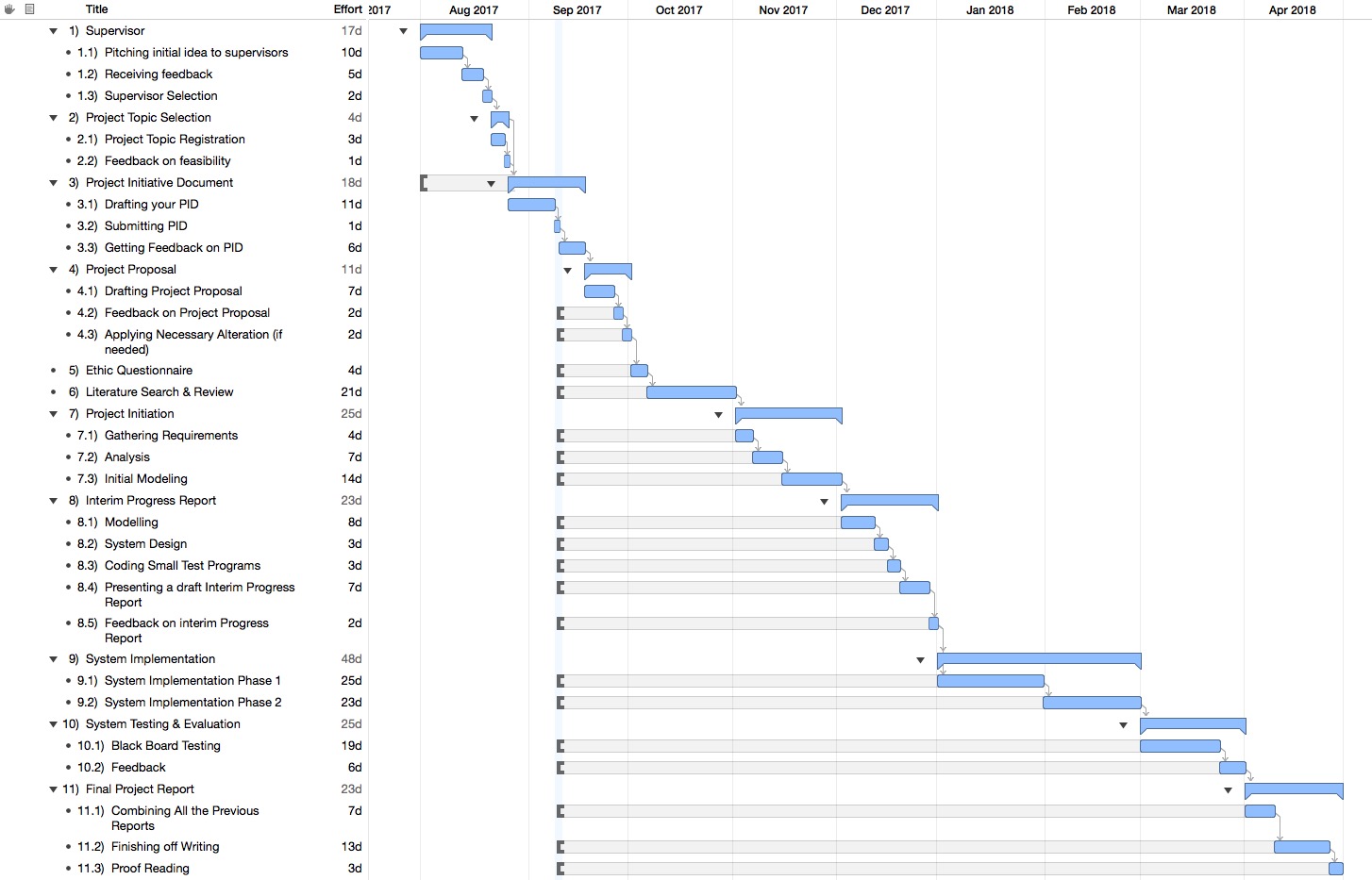
Scope does not include a fully developed project management application, and only quotients which are required to explain the gamification mechanisms will be developed.

# List of Requirements

Web browser (Chrome Preferred)

Average Computer (i3 Processor)

**Time Schedule**



# Bibliography

1. Mora, A., Riera, D., Gonzalez, C. and Arnedo-Moreno, J., 2015, September. A literature review of gamification design frameworks. In *Games and virtual worlds for serious applications (VS-Games), 2015 7th international conference on* (pp. 1-8). IEEE.
2. da Rocha Seixas, L., Gomes, A.S. and de Melo Filho, I.J., 2016. Effectiveness of gamification in the engagement of students. *Computers in Human Behavior*, *58*, pp.48-63.
3. Hsu, C.L., Chen, Y.C., Yang, T.N. and Lin, W.K., 2017. Do website features matter in an online gamification context? Focusing on the mediating roles of user experience and attitude. *Telematics and Informatics*, *34*(4), pp.196-205.
4. Dubois, D.J. and Tamburrelli, G., 2013, August. Understanding gamification mechanisms for software development. In *Proceedings of the 2013 9th Joint Meeting on Foundations of Software Engineering* (pp. 659-662). ACM.
5. Lombriser, P. and van der Valk, R., 2011. Improving the Quality of the Software Development Lifecycle with Gamification.
6. Buckley, P. and Doyle, E., 2017. Individualising gamification: an investigation of the impact of learning styles and personality traits on the efficacy of gamification using a prediction market. *Computers & Education*, *106*, pp.43-55.
7. Robson, K., Plangger, K., Kietzmann, J.H., McCarthy, I. and Pitt, L., 2015. Is it all a game? Understanding the principles of gamification. *Business Horizons*, *58*(4), pp.411-420.

# Citations

1. Lotz, M. 2013. Waterfall vs. Agile: Which is the Right Development Methodology for Your Project?. [ONLINE] Available at: https://www.seguetech.com/waterfall-vs-agile-methodology/. [Accessed 8 September 2017].
2. Chou, Y.K. 2013. The 8 Core Drives of Gamification (#2): Development and Accomplishment. [ONLINE] Available at: http://yukaichou.com/gamification-study/8-core-drives-gamification-2-development-accomplishment/. [Accessed 10 September 2017].
3. Schwaber, K., 1994. Scrum Development Process. Advanced Development Methods, 1, 23.
4. Hamari, J, Koivisto . J, Sarsa. H, (2014). Does Gamification Work? — A Literature Review of Empirical Studies on Gamification. In International Conference on System Science. Hawaii, 2014. Hawaii: IEEE. pp3025 - 3034.

New Citations

1. Agilemanifesto.org. (2017). *Manifesto for Agile Software Development*. [online] Available at: http://agilemanifesto.org/iso/en/manifesto.html [Accessed 7 Nov. 2017].
2. Scrumalliance.org. (2017). *Agile Gamification - Scrum Alliance*. [online] Available at: https://www.scrumalliance.org/community/articles/2014/august/agile-gamification [Accessed 9 Nov. 2017].

