ITSP200 – Deliverable 1

Group number and name	Group 4 – The Poll makers
Group member details	RNWYMJ192 – Poole; Liam (leader) J6H6SY5M7 – Jansen; Nadine P4PXK2T59 – Gumede; Luyanda BXMDLL7W9 - Mtshatsheni; Nompumelelo
Project title	Advanced Polling System
Submission date	22/03/2019
Signature of group leader	L.Poole

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2. System proposal

2.1 Overview

Our company consists of four I.T developers and we became aware of a problem, where students at their university has to vote for the best SRC candidate on their campus. The current system involves where students votes for a candidate in library and the main issue with the voting process is that students voted more than once and the system did not execute an error message to inform the students that they have reached their voting limit. This current system is not processing all the votes correctly and this system does not have any restrictions according to how much times a student should vote.
Our team took the current system into consideration and we decided to develop a new voting system for SRC students called the Advanced Polling System.

The Advanced Polling System is a terminal based system, which is designed to allow students that are enrolled at the campus to vote for an SRC candidate. Currently enrolled students will vote on campus, where there will be computers made available in the labs and in the library.

Our system will be able to retrieve and store the students' personal details in the database. The system will be password protected for admin users, where admin counts the most votes, delete, edit and modify student's details within the database. Students will have to log onto the system in order to vote for a candidate. Our system will as well send all the students that participated in the voting an email regarding the SRC winner.

2.2 Aim

The aim of our project is to develop a system that allows students to vote for Students Representative Council (SRC) candidates.

2.3 Objectives

- To research similar systems and find flaws and try to fix and come up with a solution to those problems.
- To research the language that will be used and learn what is needed to implement it into the code
- Produce an accurate system without problems and errors

2.4 User requirements

Functional requirements:

- System will provide a register function for the students to register with their details
- Provide an appropriate interface for the admin to nominate the selection of candidates who can be voted for
- Provide an interface for people who can vote for the candidates
- Have a login system to authenticate the students who will vote
- System will tally votes and nominate the winner with the most votes
- System must prevent users from voting more than once
- Be reliable

Non-functional requirements:

- Provide successful registering for the students and successfully store the data in the database in a little amount of time and be able to retrieve this information form the database without problems
- Have privacy when dealing with user information
- Be useable by many users simultaneously without any problems such as slow downs and crashes
- Remain stable all the time
- Have easy installation process
- Quick response time
- Self-explanatory user interface
- Have data integrity

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Technical requirements:

- The system will be coded in Java language
- The system will be running on windows operating system
- Facility for users to change their own passwords, if they don't know the old password
- High availability/reliability
- Be user friendly
- Create the database in MS Access needed to store the data

2.5 Required hardware and software

Hardware

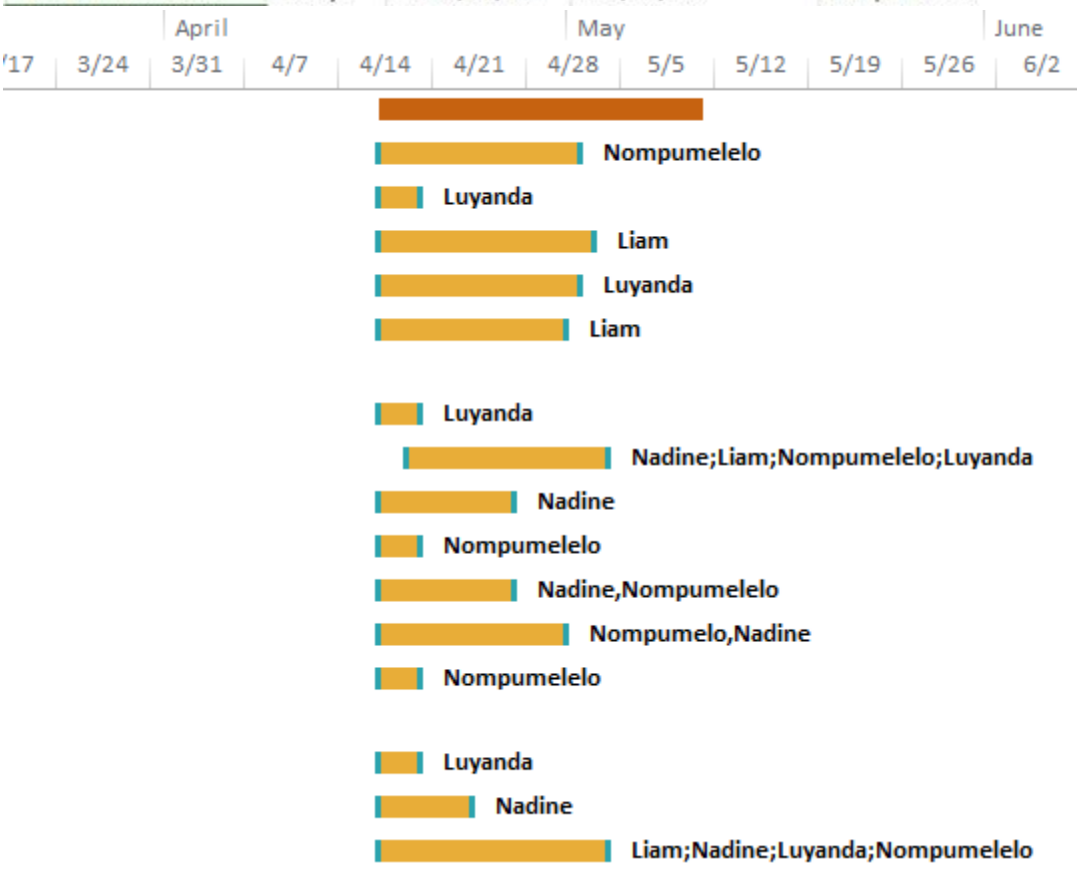
- Functional keyboard that allows users to input their details and a functional mouse to direct the users through the application.
- A desktop with sufficient RAM for the development of the application.
- An Internet connection which allows users to log into the system.

Software

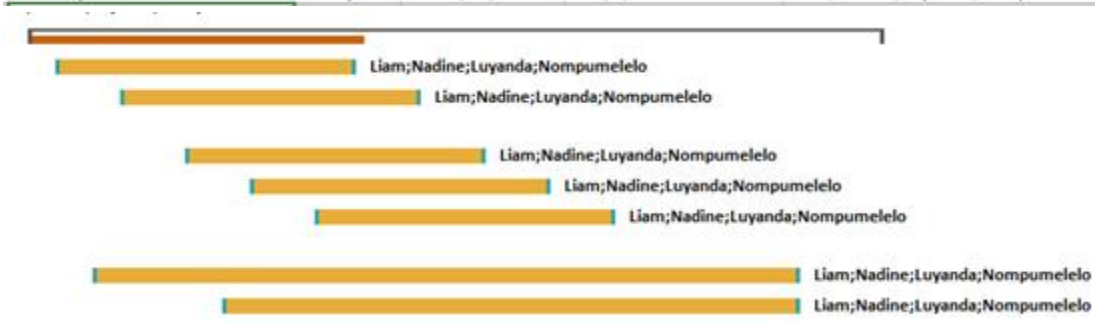
- Desktops with functional Windows OS (Windows 7 or higher).
- NetBeans 8.2 for the development of the registration forms.
- Google document that are used for sharing our work.
- MS Access to develop our database.

2.6 Schedule

Task Name	Duration	Start	Finish	Resource Names
Deliverable 1	24 days	Fri 2/15/19	Wed 3/20/19	
Overview	14 days	Tue 2/19/19	Fri 3/8/19	Nadine
Aim	8 days	Tue 2/19/19	Thu 2/28/19	Nadine
Objectives	3 days	Tue 2/19/19	Fri 2/22/19	Liam
User Requirements	6 days	Fri 2/22/19	Fri 3/1/19	Liam
Required hardware and software	14 days	Tue 2/19/19	Fri 3/8/19	Nadine
Schedule	13 days	Wed 2/27/19	Fri 3/15/19	Nompumelelo
Assumptions and contraints	16 days	Fri 2/22/19	Fri 3/15/19	Luyanda
Feasibility Study	16 days	Fri 2/22/19	Fri 3/15/19	Liam; Luyanda
Recommendations	13 days	Wed 2/27/19	Fri 3/15/19	Nompumelelo



Deliverable 2	18 days?	Wed 4/17/19	Fri 5/10/19	
Methodology	11 days	Wed 4/17/19	Wed 5/1/19	Nompumelelo
1.Introduction	3 days	Wed 4/17/19	Fri 4/19/19	Luyanda
1.1 Purpose	12 days	Wed 4/17/19	Thu 5/2/19	Liam
1.2 Scope	11 days	Wed 4/17/19	Wed 5/1/19	Luyanda
1.3 Definitions, acronyms and abbreviations	10 days	Wed 4/17/19	Tue 4/30/19	Liam
1.4 Overwiew	3 days	Wed 4/17/19	Fri 4/19/19	Luyanda
System Requirements	11 days	Fri 4/19/19	Fri 5/3/19	Nadine;Liam;Nompumelelo;Luyanda
2.1 System Perspecive	8 days	Wed 4/17/19	Fri 4/26/19	Nadine
2.2 Functional requirements	3 days	Wed 4/17/19	Fri 4/19/19	Nompumelelo
2.2.1 DFD	8 days	Wed 4/17/19	Fri 4/26/19	Nadine,Nompumelelo
2.2.2 ERD	10 days	Wed 4/17/19	Tue 4/30/19	Nompumelo,Nadine
2.3 Non-functional requirements	3 days	Wed 4/17/19	Fri 4/19/19	Nompumelelo
2.4 Technical requirements	3 days	Wed 4/17/19	Fri 4/19/19	Luyanda
2.5 User characteristcs	5 days	Wed 4/17/19	Tue 4/23/19	Nadine
2.6 Operational envireonment	13 days	Wed 4/17/19	Fri 5/3/19	Liam;Nadine;Luyanda;Nompumelelo



Deliverable 3	**66 days**	**Fri 5/10/19**	**Fri 8/9/19**	
Informaion System Design	26 days	Fri 5/10/19	Fri 6/14/19	Liam;Nadine;Luyanda;Nompumelelo
1.1 Logical Design	24 days	Mon 5/13/19	Thu 6/13/19	Liam;Nadine;Luyanda;Nompumelelo
1.1.1 Logical model data(ERD)	24 days	Mon 5/20/19	Thu 6/20/19	Liam;Nadine;Luyanda;Nompumelelo
1.1.2 Process model (DFD)	24 days	Mon 5/27/19	Thu 6/27/19	Liam;Nadine;Luyanda;Nompumelelo
1.2 Physical Design	24 days	Mon 6/3/19	Thu 7/4/19	Liam;Nadine;Luyanda;Nompumelelo
1.2.1 Technologies to be applied	24 days	Mon 6/10/19	Thu 7/11/19	Liam;Nadine;Luyanda;Nompumelelo
1.2.2 System testing	54 days	Fri 5/17/19	Wed 7/31/19	Liam;Nadine;Luyanda;Nompumelelo
1.2.3 System interface design	44 days	Fri 5/31/19	Wed 7/31/19	Liam;Nadine;Luyanda;Nompumelelo

Deliverable 4	**60 days**	**Mon 7/1/19**	**Fri 9/20/19**	**Liam;Nadine;Luyanda;Nompumelelo**
System Consruction	41 days	Fri 7/19/19	Fri 9/13/19	Liam;Nadine;Luyanda;Nompumelelo
Testing	42 days	Fri 7/19/19	Mon 9/16/19	Liam;Nadine;Luyanda;Nompumelelo


TIMELINE
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May
June
Start
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February 1
March 1
April 1
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Nadine
Nadine
Liam
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Luyanda
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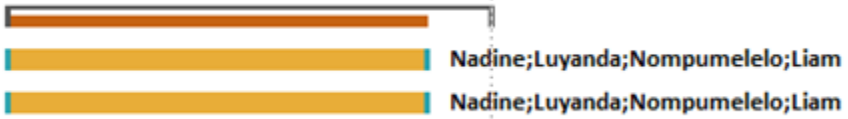
Liam;Nadine;Luyanda;Nompumelelo
Liam;Nadine;Luyanda;Nompumelelo
Liam;Nadine;Luyanda;Nompumelelo
Liam;Nadine;Luyanda;Nompumelelo
Nompumelelo
Nadine
Liam
Luyanda

Deliverable 5	**64 days**	**Thu 8/8/19**	**Tue 11/5/19**	**Liam;Luyanda;Nompumelelo;Nadine**
Evaluation Report	41 days	Mon 8/5/19	Mon 9/30/19	
Introduction	41 days	Fri 8/9/19	Fri 10/4/19	Liam;Nadine;Luyanda;Nompumelelo
System and customer's requirements	2 days	Thu 8/8/19	Fri 8/9/19	Liam;Nadine;Luyanda;Nompumelelo
Group dynamics and team colleboration	34 days	Thu 8/15/19	Tue 10/1/19	Liam;Nadine;Luyanda;Nompumelelo
Time Management	27 days	Mon 8/19/19	Tue 9/24/19	Liam;Nadine;Luyanda;Nompumelelo
Lessons learnt	42 days	Thu 8/8/19	Fri 10/4/19	Liam;Nadine;Luyanda;Nompumelelo
Conclusion	19 days	Thu 8/8/19	Tue 9/3/19	Liam;Nadine;Luyanda;Nompumelelo
User Manual	**31 days**	**Thu 8/8/19**	**Thu 9/19/19**	
System Name	5 days	Thu 8/8/19	Wed 8/14/19	Nompumelelo
Introducion	10 days	Mon 8/19/19	Fri 8/30/19	Nadine
Getting Started	11 days	Mon 8/19/19	Sat 8/31/19	Liam
How to Install	11 days	Mon 8/19/19	Sun 9/1/19	Luyanda
Insructions	20 days	Mon 8/19/19	Fri 9/13/19	Liam



Deliverable 6	**27 days**	**Mon 9/30/19**	**Tue 11/5/19**	**Liam;Nadine;Luyanda;Nompumelelo**
Final Report	24 days	Mon 9/30/19	Thu 10/31/19	Nadine;Luyanda;Nompumelelo;Liam
System Demostration	24 days	Mon 9/30/19	Thu 10/31/19	Nadine;Luyanda;Nompumelelo;Liam

2.7 Assumptions and constraints

Assumptions:

- The users have basic computer literacy skills.
- Only enrolled students are allowed to vote.
- Candidates are only current students that are enrolled in the varsity.
- The library computers will be able to run the application.
- Students will only be able to vote once.

Constraints:

- The thin client computers in the library will process slowly.
- Network failure would affect the application.
- A power failure would terminate the ongoing process of the voting session.
- Multiple users utilizing the network at the same time could slow down the application.

2.8 Feasibility study

Feasibility criteria	Ranking	System option 1: Develop system in-house	System option 2: Buy system
Operational feasibility	30%	**Functionality:** The implementation of the system will support the requirements of Pearson because Pearson has SRC elections every year and currently use an online system of which there were some problems because the system has a problem because there were students who voted much more than once and the voting had to be redone because of this issue and they had to find another online system which prohibited voting more than once **Score:** 70	**Functionality:** We will be comparing our voting system to the online system that is provided by POLYAS who held the first secure online voting developed by Wolfgang Jung in 1996 which was then extended of development to the company (POLYAS, 2019). Implementation is seamless because the system is online and only requires a reliable internet connection (POLYAS, 2019). The loss of an internet connection will cause the voting session to be voided because the thin clients in the library will not be able to connect to the internet (Menke & Kai , 2010). **Score:** 57

Technical feasibility	30%	**Technology:** The technology required is existent in the company and no additional technology is required as the company already has all the hardware necessary which is the computers that the system will be implemented on. The technology we will be using to develop the system is NetBeans IDE which is open source software and is completely free which requires no additional funding for the development process of the system (NetBeans, 2019). **Expertise:** Our team who will be developing this system is well equipped with programming in the java language and working in NetBeans IDE which is the develop environment in which the system will be developed in (w3schools, 2019). **Score:** 45	**Technology:** The only technology that is required is a browser with an internet connection. This will pose a problem at the Pearson library because the thin client computers struggle when there are multiple thin clients with web browsers open (NIEH, et al., 2003). The online voting system from POLYAS uses html that's why it needs a web browser to launch (POLYAS, 2019). **Expertise:** For a developer to be on the development team they need to know html very well and development team and have to know applied mathematics (POLYAS, 2019). **Score:** 35
Economic feasibility	30%	**Costs:** R0 **Benefits:** ● The company would have their own system and make use of it every year. ● System would resolve problem of voting more than once. ● System would be easy to implement. ● System would make use of existing data (Watt, 2014).	**Costs:** R420 / $29 **Benefits:** ● It is already developed and is immediately available for use. ● It conforms to a set standard for elections. ● Only requires a browser to be used

		● A reliable system which will work properly according to their own specifications, standards and rules. ● Fair and personalized system specifications according to their specific standards and needs and tailored to their liking so that it can do exactly what they want it to do and how they want to do it which would increase productivity and efficiency as they would know exactly how the system works and because it was made to specifically satisfy their needs (Linton, 2011). **Score:** 100	(BusinessTech, 2019). **Score:** 85
Schedule feasibility	10%	30 weeks **Score:** 80	30 weeks **Score:** 55
Ranking	100 %	73	53

2.9 Recommendations

The Advanced Polling System is recommended for Pearson Institute of Higher Education (PIHE) to be able to vote for the SRC. The system permits students to login by means of they login information. If most students aren't able to access the PC's provided, especially first year students, our IT developers will be on standby to assist anyone who needs help. The system requires students to make use of the PC's in the library. The Advanced System does not permit students to vote more than once and it is time consuming and very essential for voting. The system will only allow students registered at PIHE to use the system and if anyone else tries to access the Advanced Polling System, it will not guarantee entree for that particular user.
The Advanced Polling System is a secure online system and online voting should be an option for all students. The system saves a great deal of time for students and academic supervisors, in terms of paper-based voting and rounding up the chosen candidate for the SRC. With the use of Advanced Polling System, it will automatically confirm the candidate. The system is compiling and maintains a register, it promotes the development of decision-making skill in all domain.

3. Customer sign-off

Customer name and surname	**Customer signature**
Group leader name and surname **Liam Poole**	**Group leader signature** **L.Poole**

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