

FLEET MANAGEMENT SYSTEM

GROUP NAME: COLLOID

TEAM 43 - DELIVERABLE 4

Project Management

Members

Mavuso Mmeli 216016565

Morudu Khanyisile 216090091

Motuba Prince 201302881

Taliwe Thina 216009615

Project Supervisor

Mr HJC van Der Westhuizen

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1. Comprehensive Verification & Validation Plan

Software Requirements

Testing Plan

The testing plan will be describing the scope of the system's testing. It will look at the flow of how the system should work, alternatives in case different data type is placed into the program. It will include the test cases as well.

Testing Cases: Assignment Subsystem

Use Case: Create Delivery

| # | Test Case | Input | Condition | Expected Outcome |
|----|-----------------|------------------|-----------------------------------|--|
| 1 | Create Delivery | Delivery Details | Delivery created | System displays success message |
| 2 | | Delivery Details | Order Number is blank | System displays error message regarding blank order number |
| 3 | | Delivery Details | Delivery Date is invalid or blank | System displays error message regarding invalid date |
| 4 | | Delivery Details | Origin is invalid or blank | System displays error message regarding invalid origin |
| 5 | | Delivery Details | Destination is invalid or blank | System displays error message regarding invalid destination |
| 6 | | Delivery Details | Material is blank | System displays error message regarding blank material |
| 7 | | Delivery Details | Load is invalid or blank | System displays an error message regarding the invalid load input |
| 8 | | Delivery Details | Client is blank | System displays an error message regarding the blank client input |
| 9 | | Delivery Details | Order Number already used | System displays an error regarding an existing delivery with the same order number |
| 10 | | Delivery Details | Truck is blank | System displays an error message regarding a blank input for the truck |

| | | | | |
|----|--|------------------|-----------------|---|
| 11 | | Delivery Details | Driver is blank | System displays an error message regarding a blank driver input |
|----|--|------------------|-----------------|---|

Use Case: Update Delivery

| # | Test Case | Input | Condition | Expected Outcome |
|---|-----------------|--------------------------------------|--|--|
| 1 | Update Delivery | Order Number and Driver/Truck update | Delivery is updated | System displays success message |
| 2 | | Order Number and Driver/Truck update | Driver already assigned to a trip on the day | System displays error message to select another driver |
| 3 | | Order Number and Driver/Truck update | Truck already assigned to a trip on the day | System displays error message to select another truck |

Use Case: Login

| # | Test Case | Input | Condition | Expected Outcome |
|---|-----------|-----------------------|--|--|
| 1 | Login | Username and Password | Username and password correct and user is admin | System redirects to admin home page |
| 2 | | Username and Password | Username and password correct and user is data handler | System redirects to data handler homepage |
| 3 | | Username and Password | Username and password correct and user is supervisor | System redirects to supervisor homepage |
| 4 | | Username and Password | Password incorrect | System display error message regarding the incorrect password and to try again |
| 5 | | Username and Password | User does not exist | System display error message to contact admin |

Use Case: Add New User

| # | Test Case | Input | Condition | Expected Outcome |
|---|--------------|------------------|-------------------|---------------------------------|
| 1 | Add New User | New user details | New user is added | System displays success message |

| | | | | |
|---|--|------------------|--------------------------------|--|
| 2 | | New user details | User already exists | System displays error message regarding existing user |
| 3 | | New user details | Details are of wrong data type | System displays error message regarding specific input |

Use Case: Delete User

| # | Test Case | Input | Condition | Expected Outcome |
|---|-------------|-----------|------------------------|---|
| 1 | Delete User | User Name | User is deleted | System displays success message |
| 2 | | User Name | User is the only admin | System displays error message regarding an admin being needed |

Use Case: Add New Driver

| # | Test Case | Input | Condition | Expected Outcome |
|---|----------------|--------------------|---------------------------------------|---|
| 1 | Add New Driver | New driver details | Driver is added | System displays success message |
| 2 | | New driver details | Driver already exists | System displays error message regarding existing driver |
| 3 | | New driver details | Driver details are of wrong data type | System displays error message regarding specific detail input |

Use Case: Update Driver

| # | Test Case | Input | Condition | Expected Outcome |
|---|---------------|--|-----------------------------|--|
| 1 | Update Driver | Driver Name and License Code/Restriction | Driver is updated | System displays success message |
| 2 | | Driver Name and License Code/Restriction | Code/Restriction is invalid | System displays error message regarding invalid code |

Use Case: Delete Driver

| # | Test Case | Input | Condition | Expected Outcome |
|---|----------------|-------------|-------------------|---------------------------------|
| 1 | Add New Driver | Driver Name | Driver is deleted | System displays success message |

| | | | | |
|---|--|-------------|------------------|--|
| 2 | | Driver Name | Driver on a trip | System displays error message to try again later |
|---|--|-------------|------------------|--|

Use Case: Add New Truck

| # | Test Case | Input | Condition | Expected Outcome |
|---|---------------|-------------------|----------------------------|---|
| 1 | Add New Truck | New truck details | New truck is added | System displays success message |
| 2 | | New truck details | Truck already exists | System displays error message regarding existing truck |
| 3 | | New truck details | Registration Plate invalid | System displays error message regarding registration plate number |
| 4 | | New truck details | Load invalid | System displays error message regarding load number |

Use Case: Delete Truck

| # | Test Case | Input | Condition | Expected Outcome |
|---|--------------|---------------------------|------------------------|--|
| 1 | Delete Truck | Registration plate number | Truck is deleted | System displays success message |
| 2 | | Registration plate number | Truck is on a delivery | System displays error message to try again later |

Testing Cases: Delivery Subsystem

Use Case: Monitor Truck

| # | Test Case | Input | Condition | Expected Outcome |
|---|---------------|--------------------------|--------------------------------|---|
| 1 | Monitor Truck | Truck plate number/color | Truck is properly on route | System displays truck location |
| 2 | | Truck plate number/color | Truck has made an invalid stop | System displays truck location and notifies admin of invalid stop |

Use Case: Driver Login

| # | Test Case | Input | Condition | Expected Outcome |
|---|--------------|-----------------------|-------------------------------|--|
| 1 | Driver Login | Username and Password | Username and password correct | System displays success message on mobile application |
| 2 | | Username and Password | Password incorrect | System display error message regarding the incorrect password and to try again |
| 3 | | Username and Password | Driver does not exist | System display error message to contact admin on the mobile application |

Use Case: Accept Assignment

| # | Test Case | Input | Condition | Expected Outcome |
|---|-------------------|-------------------|---|--|
| 1 | Accept Assignment | Accept Assignment | Assignment Accepted | System displays success message and notifies admin |
| 2 | | Accept Assignment | Assignment not accepted within 24 hours | System notifies admin |

Use Case: Start Trip

| # | Test Case | Input | Condition | Expected Outcome |
|---|------------|---------------------------|------------------------------------|--|
| 1 | Start Trip | Start Trip Button Clicked | Trip has been started successfully | System displays success message and displays route |

Use Case: End Trip



























| # | Test Case | Input | Condition | Expected Outcome |
|---|-----------|-------------------------|----------------------------------|--|
| 1 | End Trip | End Trip Button Clicked | Trip has been ended successfully | System displays success message and notifies admin |

| | | | | |
|----------|--|-------------------------|------------------------------|--|
| 2 | | End Trip Button Clicked | Driver is not at destination | System displays error message, requests driver to go to destination and notifies admin |
|----------|--|-------------------------|------------------------------|--|

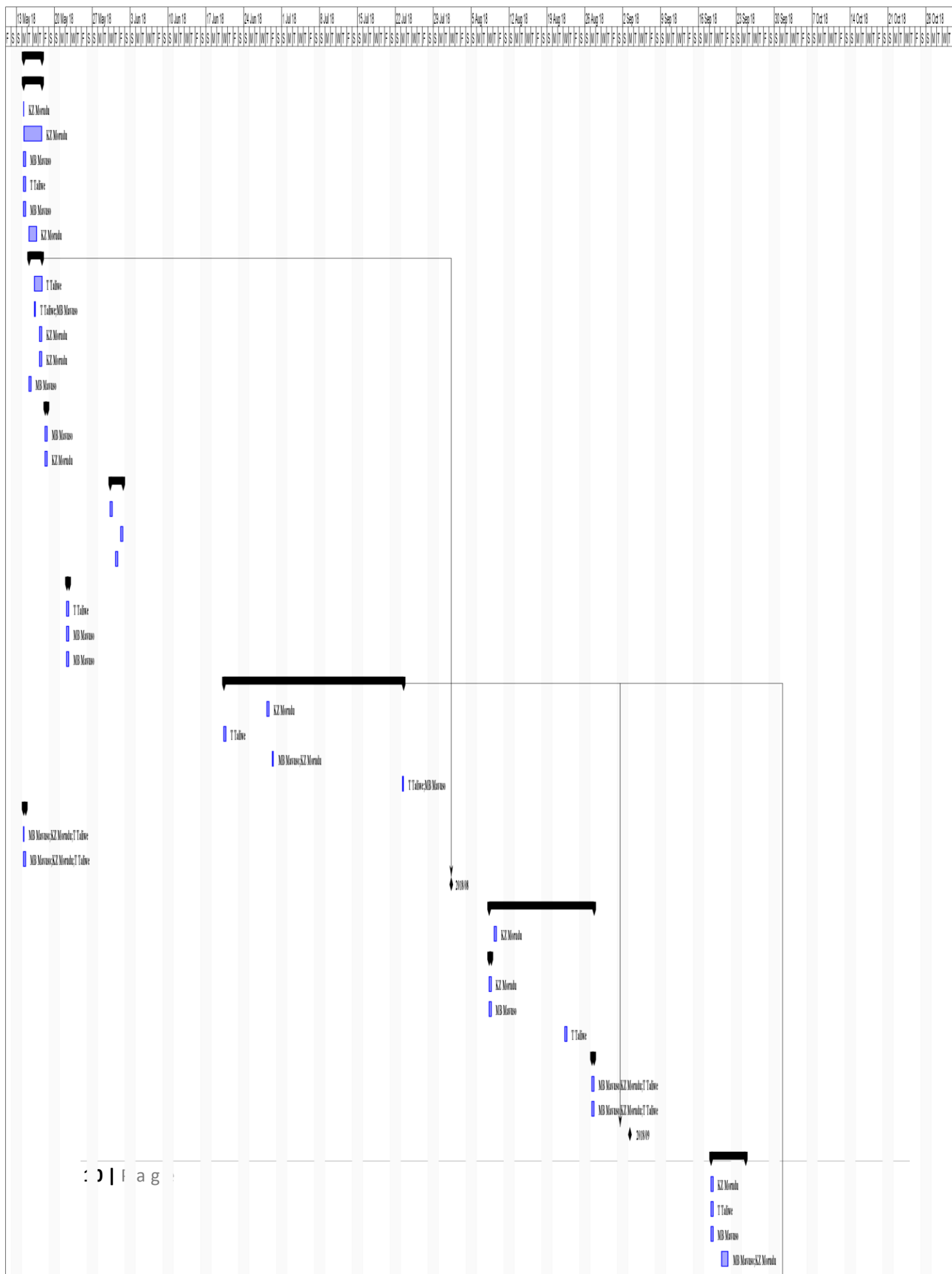
Use Case: Generate Report

| # | Test Case | Input | Condition | Expected Outcome |
|----------|-----------------|----------------|-------------------------------|--|
| 1 | Generate Report | Report Details | Report generated successfully | System displays success message and produces report |
| 2 | | Report Details | Report details invalid | System displays error regarding input type of the report |

2. Gantt Chart

| |  | Name | Duration | Start | Finish | Predecessors | Resource Names |
|----|---|---------------------------------------|-------------------|---------------------------|---------------------------|--------------|------------------------------|
| 1 | | Fleet Management System | 4 days? | 2018/05/14 8:00 AM | 2018/05/17 5:00 PM | | |
| 2 |  | Update UI on Web System | 4 days? | 2018/05/14 8:00 AM | 2018/05/17 5:00 PM | | |
| 3 | | Update Add User Page | 0.25 days? | 2018/05/14 8:00 AM | 2018/05/14 10:00 AM | | KZ Morudu |
| 4 |  | Add Update Delivery | 3.875 days | 2018/05/14 9:00 AM | 2018/05/17 5:00 PM | | KZ Morudu |
| 5 | | Link Update Page To Server | 1 day? | 2018/05/14 8:00 AM | 2018/05/14 5:00 PM | | MB Mavuso |
| 6 | | Add Delete User | 1 day? | 2018/05/14 8:00 AM | 2018/05/14 5:00 PM | | T Taliwe |
| 7 | | Link Delete User Page to Server | 1 day? | 2018/05/14 8:00 AM | 2018/05/14 5:00 PM | | MB Mavuso |
| 8 |  | Enable Route Selection on Delive... | 2 days? | 2018/05/15 8:00 AM | 2018/05/16 5:00 PM | | KZ Morudu |
| 9 |  | Update UI on App | 3 days? | 2018/05/15 8:00 AM | 2018/05/17 5:00 PM | | |
| 10 |  | Add Update Location | 2 days | 2018/05/16 8:00 AM | 2018/05/17 5:00 PM | | T Taliwe |
| 11 |  | Add Notifications to Admin | 0.5 days? | 2018/05/16 8:00 AM | 2018/05/16 1:00 PM | | T Taliwe;MB Mavuso |
| 12 |  | Add Start Trip | 1 day? | 2018/05/17 8:00 AM | 2018/05/17 5:00 PM | | KZ Morudu |
| 13 |  | Add End Trip | 1 day? | 2018/05/17 8:00 AM | 2018/05/17 5:00 PM | | KZ Morudu |
| 14 | | Add Routing System | 1 day? | 2018/05/15 8:00 AM | 2018/05/15 5:00 PM | | MB Mavuso |
| 15 |  | Create App Login Functionality | 1 day? | 2018/05/18 8:00 AM | 2018/05/18 5:00 PM | | |
| 16 |  | Design Login Activity | 1 day? | 2018/05/18 8:00 AM | 2018/05/18 5:00 PM | | MB Mavuso |
| 17 | | Add Functionality of User Class | 1 day? | 2018/05/18 8:00 AM | 2018/05/18 5:00 PM | | KZ Morudu |
| 18 |  | Manage Route | 3 days? | 2018/05/30 8:00 AM | 2018/06/01 5:00 PM | | |
| 19 |  | Add Route | 1 day? | 2018/05/30 8:00 AM | 2018/05/30 5:00 PM | | |
| 20 |  | Update Route | 1 day? | 2018/06/01 8:00 AM | 2018/06/01 5:00 PM | | |
| 21 |  | Label Pins | 1 day? | 2018/05/31 8:00 AM | 2018/05/31 5:00 PM | | |
| 22 |  | Set Up Server Protocol | 1 day? | 2018/05/22 8:00 AM | 2018/05/22 5:00 PM | | |
| 23 |  | Add Verification | 1 day? | 2018/05/22 8:00 AM | 2018/05/22 5:00 PM | | T Taliwe |
| 24 |  | Add Update | 1 day? | 2018/05/22 8:00 AM | 2018/05/22 5:00 PM | | MB Mavuso |
| 25 |  | Request Data From Server | 1 day? | 2018/05/22 8:00 AM | 2018/05/22 5:00 PM | | MB Mavuso |
| 26 |  | Generate Reports | 23.5 days? | 2018/06/20 8:00 AM | 2018/07/23 1:00 PM | | |
| 27 |  | Add Report Table | 1 day? | 2018/06/28 8:00 AM | 2018/06/28 5:00 PM | | KZ Morudu |
| 28 |  | Add Report Downloads | 1 day? | 2018/06/20 8:00 AM | 2018/06/20 5:00 PM | | T Taliwe |
| 29 |  | Add Report Graph | 0.5 days? | 2018/06/29 8:00 AM | 2018/06/29 1:00 PM | | MB Mavuso;KZ Morudu |
| 30 |  | Refactor Code | 0.5 days? | 2018/07/23 8:00 AM | 2018/07/23 1:00 PM | | T Taliwe;MB Mavuso |
| 31 | | Test | 1 day? | 2018/05/14 8:00 AM | 2018/05/14 5:00 PM | | |
| 32 | | Test Mobile Application | 0.333 days? | 2018/05/14 8:00 AM | 2018/05/14 10:40 AM | | MB Mavuso;KZ Morudu;T Taliwe |
| 33 | | Test Web System | 1 day? | 2018/05/14 8:00 AM | 2018/05/14 5:00 PM | | MB Mavuso;KZ Morudu;T Taliwe |
| 34 |  | Alpha Presentation | 0 days | 2018/08/01 8:00 AM | 2018/08/01 8:00 AM | 9 | |
| 35 |  | Extra Functionality | 14 days? | 2018/08/08 8:00 AM | 2018/08/27 5:00 PM | | |

| | | | | | | | |
|----|---|----------------------------|----------------|---------------------------|---------------------------|----|------------------------------|
| 36 |  | Add Ambience | 1 day? | 2018/08/09 8:00 AM | 2018/08/09 5:00 PM | | KZ Morudu |
| 37 | | Add Icons | 1 day? | 2018/08/08 8:00 AM | 2018/08/08 5:00 PM | | |
| 38 | | Add Driver Icon | 1 day? | 2018/08/08 8:00 AM | 2018/08/08 5:00 PM | | KZ Morudu |
| 39 | | Add Message Icon | 1 day? | 2018/08/08 8:00 AM | 2018/08/08 5:00 PM | | MB Mavuso |
| 40 |  | Refactor Code | 1 day? | 2018/08/22 8:00 AM | 2018/08/22 5:00 PM | | T Taliwe |
| 41 |  | Test | 1 day? | 2018/08/27 8:00 AM | 2018/08/27 5:00 PM | | |
| 42 | | Test Web System | 1 day? | 2018/08/27 8:00 AM | 2018/08/27 5:00 PM | | MB Mavuso;KZ Morudu;T Taliwe |
| 43 | | Test Mobile Application | 1 day? | 2018/08/27 8:00 AM | 2018/08/27 5:00 PM | | MB Mavuso;KZ Morudu;T Taliwe |
| 44 |  | Beta Presentation | 0 days | 2018/09/01 1:00 PM | 2018/09/03 5:00 PM | 26 | |
| 45 |  | Extra Functionality | 5 days? | 2018/09/18 8:00 AM | 2018/09/24 5:00 PM | | |
| 46 | | Update Font | 1 day? | 2018/09/18 8:00 AM | 2018/09/18 5:00 PM | | KZ Morudu |
| 47 | | Update CSS | 1 day? | 2018/09/18 8:00 AM | 2018/09/18 5:00 PM | | T Taliwe |
| 48 | | Update Pictures | 1 day? | 2018/09/18 8:00 AM | 2018/09/18 5:00 PM | | MB Mavuso |
| 49 |  | Refactor Code | 1.5 days? | 2018/09/20 8:00 AM | 2018/09/21 1:00 PM | | MB Mavuso;KZ Morudu |
| 50 |  | Test | 3 days? | 2018/09/20 8:00 AM | 2018/09/24 5:00 PM | | |
| 51 |  | Test Web System | 2 days? | 2018/09/20 8:00 AM | 2018/09/21 5:00 PM | | MB Mavuso;KZ Morudu;T Taliwe |
| 52 |  | Test Mobile Application | 3 days? | 2018/09/20 8:00 AM | 2018/09/24 5:00 PM | | MB Mavuso;KZ Morudu;T Taliwe |
| 53 |  | Final Presentation | 0 days | 2018/10/01 1:00 PM | 2018/10/01 1:00 PM | 26 | |



3. Resource Breakdown

| Activity | Description | Duration | Cost |
|---|--|----------|--------------|
| Planning <ul style="list-style-type: none"> - Researching - Understanding problem | <ul style="list-style-type: none"> - Understanding problem identified - Coming up with solution ideas for solving the problem | 2 weeks | R500.00 |
| Requirements <ul style="list-style-type: none"> - Stakeholders Meeting - Travelling to meetings | Meeting were held to: <ul style="list-style-type: none"> - Understand current system - Identify requirements - Suggest solutions | 1 week | R1 500.00 |
| Database Design <ul style="list-style-type: none"> - Database design using SQL - Stationary (pens, pencils, books) | <ul style="list-style-type: none"> - Designing of database tables and relationships - Writing down requirements - Drawing the database design | 2 weeks | |
| Hardware <ul style="list-style-type: none"> - Back ups - Servers | <ul style="list-style-type: none"> - System backups (Git and GDrive) | 8 months | R250.00 p/m |
| | - | | |
| Internet Usage Monthly Payments for: <ul style="list-style-type: none"> - Researching - Information exchange - Communication with group - Downloading software - Version Control Uploads/Use - Communication with stakeholders | <ul style="list-style-type: none"> - 5 GB per person per month - 5 GB * 3 = 15 GB per month | 8 months | R1215,00 p/m |
| Testing <ul style="list-style-type: none"> - Unit tests - System testing - Functional testing | Testing for: <ul style="list-style-type: none"> - Errors - Performance - Functionality | 8 months | R10 000.00 |
| Prototyping | Prototype for both mobile application and web system | 2 weeks | R10 000.00 |
| Coding | <ul style="list-style-type: none"> - Implementation of web system - Implementation of mobile application | 8 months | R120 000.00 |
| User Documentation | <ul style="list-style-type: none"> - User manual - System description | 3 days | R3 000.00 |

| | | | |
|--------------------------|--|----------|------------------------------------|
| Effort/time spent | <ul style="list-style-type: none"> - Time spend by every member - Salary of every individual | 8 months | R 20 000.00 * 3 = R60 000.00 |
| Total Cost | | | R216 720.00 |

4. Appendix

Plagiarism Declaration



Informatics 3 Year Project

Academy of Computer Science and Software Engineering

Plagiarism Declaration

| | | | | | |
|---------------|---------|--------|----|------------|-------------------|
| Deliverable # | 3 | Team # | 43 | Supervisor | MR HJC WESTHUIZEN |
| Team Name | COLLOID | | | | |

1. Plagiarism is to present someone else's ideas as our own.
2. Where material created by other people has been used (either from a printed or digital source) this has been carefully acknowledged and referenced. We have used the appropriate style for citation and referencing. Every contribution to this deliverable has been acknowledged through citation and reference.
3. We know that plagiarism is wrong.
 - 3.1. We understand what plagiarism is and are aware of the University's policy in this regard.
 - 3.2. We know that we would plagiarise if we do not give credit to our sources, or if we copy any part of a book, article, or Internet source without proper citation.
 - 3.3. We know that even if we only change the copied work slightly, we still plagiarise when using someone else's work without proper citation.
 - 3.4. We declare that we have created our own work throughout this deliverable and we have credited all ideas we have gained from other people's work.
4. We declare that this deliverable is our own original work.
5. We have not allowed, and will not allow, anyone to copy our work with the intention of passing it off as his or her own work.

Signature Marley Mavuso
Full Name Marley Mavuso
Student # 216016565
Date 21/04/2018

Member 1

Signature Khanyisile Morudu
Full Name Khanyisile Morudu
Student # 216090091
Date 21/04/2018

Member 2

Signature T. Taliwe
Full Name Thina Taliwe
Student # 216009615
Date 21/04/2018

Signature _____
Full Name _____
Student # _____
Date _____

Gantt Chart

