State Police System Requirements Specification

Version 1.0

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Table of Contents

1. Executive Summary

1.1 Project Overview

Nowadays, we are in the digitalization era. Everything is being processing online. It is faster, better and safer. Unfortunately for Albanian institutions which require a lot of paper work, we are still behind in this process. Te whole process of assigning tasks, searching information, keep tracking of user locations, checking reports and sending reports is done manually in one of the main institutions of our country, such as the State Police. Here comes into play the State Police System, the software we are providing that aims to ease the State Police daily tasks. Since the State Police is a very important institution, this software will try to digitalize every step of the police work and implement some new features that will come to help.

1.2 Purpose and Scope of this Specification

The purpose of this software is to create a system that will help the State Police in their daily work. In the current state, the State Police does most of their work using paperwork and there is not an existing and functional online system which helps them manage, update, upload and check this paperwork. Also, the existing online system needs several improvements, which will be implemented in our online system regarding the daily tasks and services. The main goal is to ease the processes and works of the state police in such a way that both the police employees and users(citizens) will solve their issues and problems without having to wait for a long time.

2. Product/Service Description

Nowadays the police online system has some problems and missing services without whom the employees and citizens face difficulties during the processes. Also, the digitalization and development of technology is something that our country has been going through the past years and therefore everything should be done without difficulties online.

2.1 Product Context

The context of this software is related to State Police of the government of Albania, even though our scope is to provide a solution for every law enforcing institution. This solution will be used by every employee of the police and by the internal affairs department in order to

enhance their cooperation, make their jobs easier and make sure they make a full use of their time and energy, but also improve the efficiency, safety and correctness in work.

2.2 User Characteristics

There are five user groups that will take advantage and use the software:

- Normal citizen
- Police Employee
- Police Officer
- Police Chief
- Internal Affair Officer

a) Normal citizen

These users will not be logged in. They can access the client-side part of the web application. They can file a complaint, find the nearest police patrol, use the police services and read about the police latest news. They don't have an impact on the internal system, but their complaints and requests will be handled by the State Police System.

b) Police Employee

These users are the majority of system. They can login in the State Police website with their email.
They will have their own dashboard where they can take tasks such as investigations, duties, filing reports and sending reports to prosecutors. They will be the ones to accomplish the tasks. They can take part in an investigation, file a report, search in the database, update the profile of a convicted person, communicate with other precincts and report to their leader.

c) Police Officer

These users will have a higher responsibility than the previous ones. They will have a different dashboard than the police employees since they have the ability to access every police section and tasks. They will assign tasks, approve reports, take decisions and see the performance and efficiency of the police troops. They can open an investigation, see old cases, open the archive and send their closed investigation to the prosecutor. They will be able to keep track of their case with checkpoints.

d) Chief Police Officer

These are the leaders of the police structure. They have access over all the precincts of one city. They can take every decision. A chief police officer can review every police officer, he can investigate cases. He will give the approval for the critical cases.

e) Internal Affair Officer

This is the section which manages and controls every documentation, process and work inside the police system. The main purpose of this section is to check for irregularities, corruption and problems among the police employees. They receive complaints from citizens and make sure to check whether this complaint is correct or not and if so, they take measures to legally start a procedure for the police employees (of all ranks) and send them to the prosecutors.

Assumptions

It is assumed that State Police has the right to go through all the data generated from every other police precinct according to law.

It is assumed that the data generated from the system will be fully confidential and only available to the police and/or higher state institutions such as Prosecution Institution of Albania.

It is assumed that the Police has all the information for every individual of Albania and can see their profile and every penal case.

It is assumed that every police has a computer at their work and internet so they can access the website.

It is assumed further that the police employees are able to use internet and especially the State Police System effectively and efficiently.

It is assumed that every police officer should be limited to watching only tasks assigned to his precinct and not interfere with other precincts.

It is assumed that office employees have a web browser and an active internet connection.

It is assumed that every completed task needs to be stored in the system for documentation and research purposes.

2.3 Constraints

This system will be potentially constrained by:

- There are a lot of files to be digitalized
- The server might be overloaded
- The need of a fast internet connection and working computers
- Having every police employee understand the way the system works and making sure they do not make mistakes
- Cars should have GPS technology

2.4 Dependencies

- Tasks and cases are assigned by the police officer to regular police employees. Although, the tasks need to be added. So, police officers will add new cases in the system and then assign them to employees.

- After a police employee finishes a job and wants to send a report, he has to wait for the approval of his police officer.

- In cases which are labelled confidential and critical, the approval of the Chief Police Officer is required, so all the employees working on that job need to wait to do their investigation.

- The performance evaluation by the officers cannot be done if police employees have not been able to complete any task by using the system. Evaluation will be more realistic and helpful if there are lots of tasks completed.

3. Requirements

3.1 Functional Requirements

Req#	Requirement	Comments	Priority	Date	SME Reviewed / Approved
BR_01	The system should have a web application which will be used by administrators.	This web application will be the main platform.	3	29/03/19	Orges Balla/ Kristian Sota
BR_02	The system should have a client – side interface.	This will allow citizens to be informed and use the police services	3	29/03/19	Orges Balla/ Kristian Sota
BR_03	The police employees must use the data from the database only for work purposes	This will ensure the law is enforced for Data Protection.	1	29/03/19	Orges Balla/ Kristian Sota
BR_04	The Police Officer will have a dashboard where he can manage all his tasks, but also his employees.	Police Officers are responsible for their precinct and also for their respective police employees.	3	29/03/19	Orges Balla/ Kristian Sota
BR_05	Archives data are very important for every police staff. They need to be able to fetch information easily.	Data about old cases or information about citizen are important in the daily work of a police employee.	3	29/03/19	Orges Balla/ Kristian Sota
BR_06	The system should provide officers and chiefs with the ability to assign jobs/cases/filings/investigations to their employees.	Very important aspect since this will make the work flow.	3	29/03/19	Orges Balla/ Kristian Sota
BR_07	Chief Police Officer should be able to distribute works and tasks to officers based on a map.	This will be accomplished automatically, and locations will be assigned in the beginning.	3	29/03/19	Orges Balla/ Kristian Sota
BR_08	The Police Employee should be able to file a report.	This will be accomplished on the dashboard.	3	29/03/19	Orges Balla/ Kristian Sota

Req#	Requirement	Comments	Priority	Date	SME Reviewed / Approved
BR_09	The reports or cases filed should be approved by the Police Officer.	Every cop should have his boss approval.	3	29/03/19	Orges Balla/ Kristian Sota
BR_10	In very important and critical cases, the approval of the major Chief Police Officer should be given.	The operations cannot be undertaken without the approval of Chief Police Officer in case of confidential cases.	3	29/03/19	Orges Balla/ Kristian Sota
BR_11	When creating reports, a format will be provided so the employees can fill the fields and the format is maintained.	This will be accomplished by having a button that will trigger an action and will store it in the database. If names are provided, the employees will be informed.	3	29/03/19	Orges Balla/ Kristian Sota
BR_12	The Officers should be able to watch the current progress in an investigation and the names of each employee involved.	This will be done in the Officer's dashboard where he can open his investigations.	2	29/03/19	Orges Balla/ Kristian Sota
BR_13	The ability to search for any citizen on the database is something that should be provided.	Each employee will have a search bar where he can search for a citizen.	2	29/03/19	Orges Balla/ Kristian Sota
BR_14	Every employee should be able to access the archive where they can get more information.	There will be an interface where they can search the archive with keywords.	3	29/03/19	Orges Balla/ Kristian Sota
BR_15	The Chief Police Officer can only check on his employees and not all employees of the state.	There will be 6 different districts, therefore 6 Chief Police Officers that will have the authority over their region.	2	29/03/19	Orges Balla/ Kristian Sota
BR_16	The State Police will have a lot of employees. In this case the tabular view of employees should not overflow. Pagination will help officers to slide through employees with ease.	Pagination will be implemented in case of need.	3	29/03/19	Orges Balla/ Kristian Sota

3.2 Non-Functional Requirements

3.2.1 User Interface Requirements

The system shall be a web application, which can be seen either with Mozilla, Chrome or Safari. The application will have a user interface that will be for the citizens. It will have some sections and services.

On the navigation bar there will be a login button. The Login button will redirect to a simple login interface, where it will ask the user for Email and Password. The user will gain access to the system, in case of proven authenticity otherwise, an error message of invalid credentials will be displayed.

As part of the structure of the system, there will be 4 different dashboards that will make possible to ease paper work, increase work productivity and efficiency.

Once the user is logged in the web application, he/she shall have access to the specific dashboard that he is entitled to. The police employee will see in his dashboard his current work on progress, his previous works, the archive, the database of citizens, the filing section.

The police officer will have a different dashboard. He can assign tasks, open an investigation, add new cases, approve requests. The interface will have a similar design to the regular police employee.

3.2.2 Learnability

- The application is simple to use and understand.
- The web application will come together with a PDF manual, providing a step by step information on how to effectively use the system.
- Specific error messages will be displayed, by also identifying the specific action, that caused the error.
- The application is specified for certain users, thus the system will know, when a certain action is not allowed

3.2.3 Performance

The application will be a web application which will be stored in a web server.
The application's time of execution will depend on:

- The efficiency of fetching data from database
- The Internet connection bandwidth

- The server's hardware capabilities
- The Operating System installed on a server.
- The third-party libraries that need to be installed.
- The number of active users accessing the website.

3.2.3.1 Capacity

The application needs to be stored in a web server. The application itself will have a maximum size of 100 MB. The database will be complex and considerably large. Anyway, the application is expected to work just fine will every user logged on.

3.2.3.2 Availability

- The web application will be available for use 24/7.
- The web application will work in an optimal manner during the working hours of the day.
- The application can be accessed and used in any geographical area, as long as the user has an active Internet connection.
- By creating separate user sessions, their overall work efficiency and productivity will not decrease by much, while using the application.
- Specific error messages will be provided, in case an action would cause systems fatal error.

3.2.3.3 Latency

The latency of the web application will depend on:

- The internet connection bandwidth
- The efficiency of fetching data from the database
- The size of database.

Some functions such as searching for citizens might take longer.

3.2.4 Manageability/Maintainability

3.2.4.1 Monitoring

The applications user interface will be easy, and it will not provide cases that would crash the system. Necessary actions for any of error will be taken. The login interface needs a (1)

Username and (2) Password as input. These two-input data must be valid input data. The user will log in the system, in case the user has entered valid credentials, otherwise an error message of “Invalid Credentials” will be displayed.

If a police employee, tries to access a file that it does not belong to him, he will see an error specifying Access not authorized. Same will happen for everyone trying to access files that do not belong to them.

3.2.4.2 Maintenance

The system will be developed using MySQL for the database and Apache for the server.

In case the system crashes, the application is going to restart. During this process, the application will redirect the user to the dashboard, but the changes will be saved, and he will be asked to confirm them.

If the problem persists, it is needed to contact the IT squad so a full restart of the server can happen.

3.2.4.3 Operations

Some of the operations that can be taken by the users are:

- File a report
- Add a new case
- Open an on-going case
- Start an investigation on an employee
- Approve a request
- File a complaint
- Search for a citizen
- Report an injustice
- Assign someone to a task

3.2.5 System Interface/Integration

The database will provide to the users only as information. They can not change the structure of it. Only IT department will have access to the DB configuration. The application will take care of queries.

3.2.5.1 Network and Hardware Interfaces

The application is a web application that will be stored in a web server, so the browser will create a TCP connection with the server. Every browser supports this connection, so it will function properly.

3.2.6 Security

3.2.6.1 Protection

The application security is very important, since this is a highly confidential system. Protection is added in every form that will make sure that everything entered is correct such as a valid name, valid surname, valid email address and valid password.

3.2.6.2 Authorization and Authentication

- Valid credentials are checked when users log in.
- Authorization will be based on the user type.
- Users will have access only to their information.
- Session to be used for the currently logged user.
- Using Cookies and PubCookie tool.

3.2.7 Data Management

The application might have a complex and large database and some of those classes are:

- Users
- Reports
- Cases
- Proof
- Regions
- Complaints
- Citizens

3.2.8 Standards Compliance

The application will be developed in such way that will follow and respect the rules and regulations determined by the State Police according with the law.

3.2.9 Portability

The application can be accessed via a browser and a internet connection.

3.2.10 Other Non-Functional Requirements

Please provide all necessary non-functional requirements, similar to the requirements explained in the lesson slides or in the textbook.

3.3 Domain Requirements

Everything related to the domain that might be needed in the project shall be mentioned in here. Sometimes the domain Requirements might be thought as part of either functional or non-functional requirements.

4. User Scenarios/Use Cases

1. Web App Scenario – Successful Login

    a. The user clicks on the navigation bar the Login button
    b. The user is asked to enter his email address
    c. The user is asked to enter his password
    d. If the credentials are correct, he is logged in
    e. He will be redirected to the interface of his dashboard

2. Web App Scenario – Failed Login
    a. The user clicks on the navigation bar the Login button
    b. The user is asked to enter his email address
    c. The user is asked to enter his password
    d. The credentials are wrong, a message is displayed.
    e. He will try again.

3. Police Employee accepts a task
    a. A police employee is logged in
    b. He checks his dashboard for assign tasks.
    c. He reads the task and the report.
    d. He presses the Button ‘Confirm’
    e. He starts working on that case/task

4. Police Employee searches for a citizen
    a. A police employee is logged in
    b. He opens the Search Module
    c. He enters the information for a specific search
    d. If found, the information is fetched from database.
    e. He can read about that citizen.
    f. He can put him under investigation on a case.
    g. He can close that profile and redirect back to the dashboard.

5. Police Employee files a report
    a. On his dashboard he opens the module of Filing Reports.
    b. He adds a new report by pressing Add a New Report button
    c. He fills the information on the correct form.
    d. He can choose the option to send to his chief or other institution such as prosecution.
    e. He saves the report and has the opportunity to print it.

6. Police Officer assign an employee to a case
    a. The officer opens his current cases.
    b. He reads the cases.
    c. He can select from available employees to assign the case
    d. He sends the case to the employee
    e. He waits for the result

7. Police Officer opens the archive
    a. On his dashboard he selects Archive Module

b. He enters the keywords for searching a case
c. The cases related are shown.
d. He can open each one of them and read in detail.
e. He closes the case.
f. He is redirected to the main dashboard.

8. Police Officer checks the location of his employees
   a. He enters the dashboard.
   b. He opens the locations.
   c. Each employee car has a GPS so he can see the location.
   d. On the map he can also see the cases assigned to them.
   e. He can select an employee and perform an action.

9. Police Officer gives approval for an investigation
   a. He opens the dashboard.
   b. He opens the module Pending Approvals.
   c. He can select a request.
   d. He can approve or deny the request.
   e. The employee is informed about the decision.

10. Chief Police Officer checks confidential cases
    a. In the dashboard, he will get an alert that a confidential/ critical case is in process.
    b. He opens the confidential case
    c. Checks the important info
    d. He can choose if he wants to inform the Supreme Chief Police Officer
    e. He gives his approval and assigns officers for this task
    f. He can choose the option of information sharing
    g. He closes the report

11. Police Officer deletes a report
    a. He can open the report
    b. He can report it as invalid
    c. He deletes the report
    d. The reports are saved for a period of 1 year even after deletion
    e. Internal Affairs get notified when a report is deleted

12. Internal Affairs opens an employee profile
    a. He goes to his dashboard
    b. He opens the employee profile
    c. He can see all his cases and each particular one
    d. He can see the overall review for that employee

13. Internal Affairs Officer starts an investigation through his dashboard
    a. He goes to his dashboard
    b. He opens the module which writes ‘Start an investigation’
    c. He enters the information of the employee/s
    d. The employees under investigation will be on watch
    e. The officer can see his private messages

14. Internal Affairs Officer gets notified about complaints
    a. If there are many complaints about a police employee, the IA officer will get a notification on his dashboard.
    b. He can read the complaints for that specific employee.
    c. After reviewing, he can take action depending on the issue.

d. He will have several options valid so he can choose.
e. After choosing, he closes the dashboard.

15. Internal Affairs Officer suspends an employee
    a. He logs in the system
    b. He opens the on-going cases/investigations
    c. He opens an employee profile
    d. He suspends the employee by checking the button
    e. The employee and his officer are informed immediately by the system.

Appendix A. Requirements Traceability Matrix

The following trace matrix examples show one possible use of naming standards for deliverables (FunctionalArea-DocType-NN). The number has no other meaning than to keep the documents unique. For example, the Bargaining Unit Assignment Process Flow would be BUA-PF-01.

For example (1):

Business Requirement	Area	Deliverables	Status
BR_LR_01 The system should validate the relationship between Bargaining Unit/Location and Job Class.---Comments: Business Process = "Assigning a Bargaining Unit to an Appointment" (Priority 1)	BUA	BUA-CD-01 Assign BU Conceptual Design	Accepted
		BUA-PF-01 Derive Bargaining Unit-Process Flow Diagram	Accepted
		BUA-PF-01 Derive Bargaining Unit-Process Flow Diagram	Accepted
BR_LR_09 The system should provide the capability for the Labor Relations Office to maintain the job class/union relationship.---Comments: Business Process = "Maintenance" (Priority 1)	BUA	BUA-CD-01 Assign BU Conceptual Design	Accepted
		BUA-PF-02 BU Assignment Rules Maint Process Flow Diagram	ReadyForReview

For example (2):

BizReqID	Pri	Major Area	DevTstItems DelivID	Deliv Name	Status
BR_LR_01	1	BUA	BUA-CD-01	Assign BU Conceptual Design	Accepted

BizReqID	Pri	Major Area	DevTstItems DelivID	Deliv Name	Status
BR_LR_01	1	BUA	BUA-DS-02	Bargaining Unit Assignment DB Modification Description	Accepted
BR_LR_01	1	BUA	BUA-PF-01	Derive Bargaining Unit-Process Flow Diagram	Accepted
BR_LR_01	1	BUA	BUA-UCD-01	BU Assign LR UseCase Diagram	ReadyForReview
BR_LR_01	1	BUA	BUA-UCT-001	BU Assignment by PC UseCase - Add Appointment and Derive UBU	Reviewed
BR_LR_01	1	BUA	BUA-UCT-002	BU Assignment by PC UseCase - Add Appointment (UBU Not Found)	Reviewed
BR_LR_01	1	BUA	BUA-UCT-006	BU Assignment by PC UseCase - Modify Appointment (Removed UBU)	Reviewed
BR_LR_09	1	BUA	BUA-CD-01	Assign BU Conceptual Design	Accepted
BR_LR_09	1	BUA	BUA-DS-02	Bargaining Unit Assignment DB Modification Description	Accepted
BR_LR_09	1	BUA	BUA-PF-02	BU Assignment Rules Maint Process Flow Diagram	Accepted
BR_LR_09	1	BUA	BUA-UCD-03	BU Assign Rules Maint UseCase Diagram	Reviewed
BR_LR_09	1	BUA	BUA-UCT-045	BU Assignment Rules Maint: Successfully Add New Assignment Rule	Reviewed
BR_LR_09	1	BUA	BUA-UCT-051	BU Assignment Rules MaintUseCase: Modify Rule	Reviewed
BR_LR_09	1	BUA	BUA-UCT-053	BU Assignment Rules MaintUseCase - Review Assignment Rules	Reviewed
BR_LR_09	1	BUA	BUA-UCT-057	BU Assignment Rules MaintUseCase: Inactivate Last Rule for a BU	Reviewed
BR_LR_09	1	BUA	BUA-UI-02	BU AssignRules Maint UI Mockups	ReadyForReview
BR_LR_09	1	BUA	BUA-TC-021	BU Assignment Rules Maint TestCase: Add New Rule (Associated Job Class Does Not Exist) - Success	ReadyForReview
BR_LR_09	1	BUA	BUA-TC-027	BU Assignment Rules Maint TestCase: Modify Rule - Success	ReadyForReview
BR_LR_09	1	BUA	BUA-TC-035	BU Assignment Rules Maint TestCase: Add New Rule (Associated Job Class Does Not Exist) - Error Condition	ReadyForReview
BR_LR_09	1	BUA	BUA-TC-049	BU Assignment Rules Maint TestCase: Modify Rule - Error Condition	ReadyForReview

For example (3):

BizReqID	CD01	CD02	CD03	CD04	UI01	UI02	UCT01	UCT02	UCT03	TC01	TC02	TC03	TC04
BR_LR_01			X		X		X			X		X	
BR_LR_09	X			X		X			X		X		X

BizReqID	CD01	CD02	CD03	CD04	UI01	UI02	UCT01	UCT02	UCT03	TC01	TC02	TC03	TC04
BR_LR_10	X			X					X		X		
BR_LR_11		X											

Appendix B. Organizing the Requirements

This section is for information only as an aid in preparing the requirements document.

Detailed requirements tend to be extensive. Give careful consideration to your organization scheme. Some examples of organization schemes are described below:

By System Mode
Some systems behave quite differently depending on the mode of operation. For example, a control system may have different sets of functions depending on its mode: training, normal, or emergency.

By User Class
Some systems provide different sets of functions to different classes of users. For example, an elevator control system presents different capabilities to passengers, maintenance workers, and fire fighters.

By Objects
Objects are real-world entities that have a counterpart within the system. For example, in a patient monitoring system, objects include patients, sensors, nurses, rooms, physicians, medicines, etc. Associated with each object is a set of attributes (of that object) and functions (performed by that object). These functions are also called services, methods, or processes. Note that sets of objects may share attributes and services. These are grouped together as classes.

By Feature
A feature is an externally desired service by the system that may require a sequence of inputs to affect the desired result. For example, in a telephone system, features include local call, call forwarding, and conference call. Each feature is generally described in a sequence of stimulus-response pairs, and may include validity checks on inputs, exact sequencing of operations, responses to abnormal situations, including error handling and recovery, effects of parameters, relationships of inputs to outputs, including input/output sequences and formulas for input to output.

By Stimulus
Some systems can be best organized by describing their functions in terms of stimuli. For example, the functions of an automatic aircraft landing system may be organized into sections for loss of power, wind shear, sudden change in roll, vertical velocity excessive, etc.

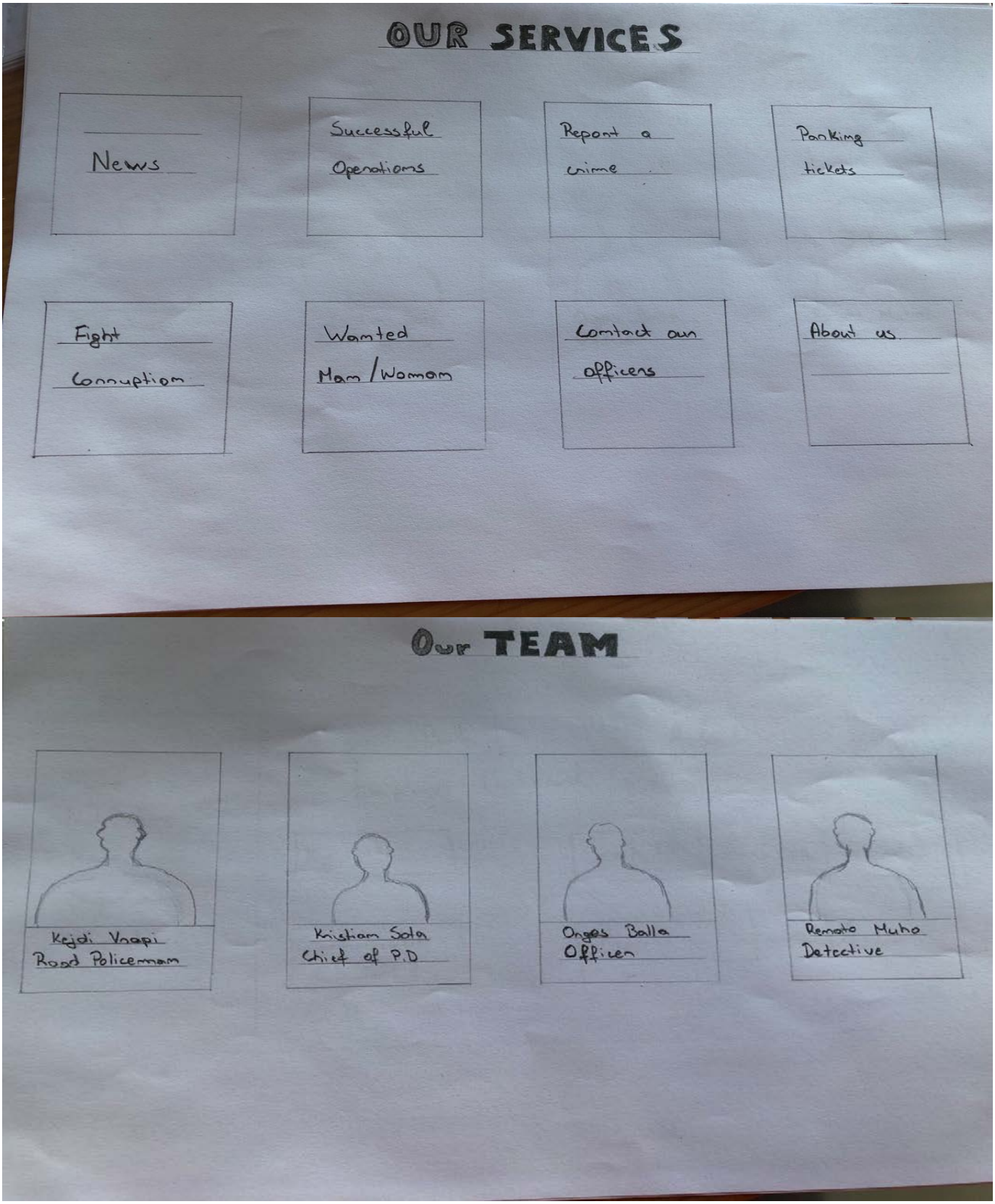
By Response
Some systems can be best organized by describing all the functions in support of the generation of a response. For example, the functions of a personnel system may be organized into sections corresponding to all functions associated with generating paychecks, all functions associated with generating a current list of employees, etc.

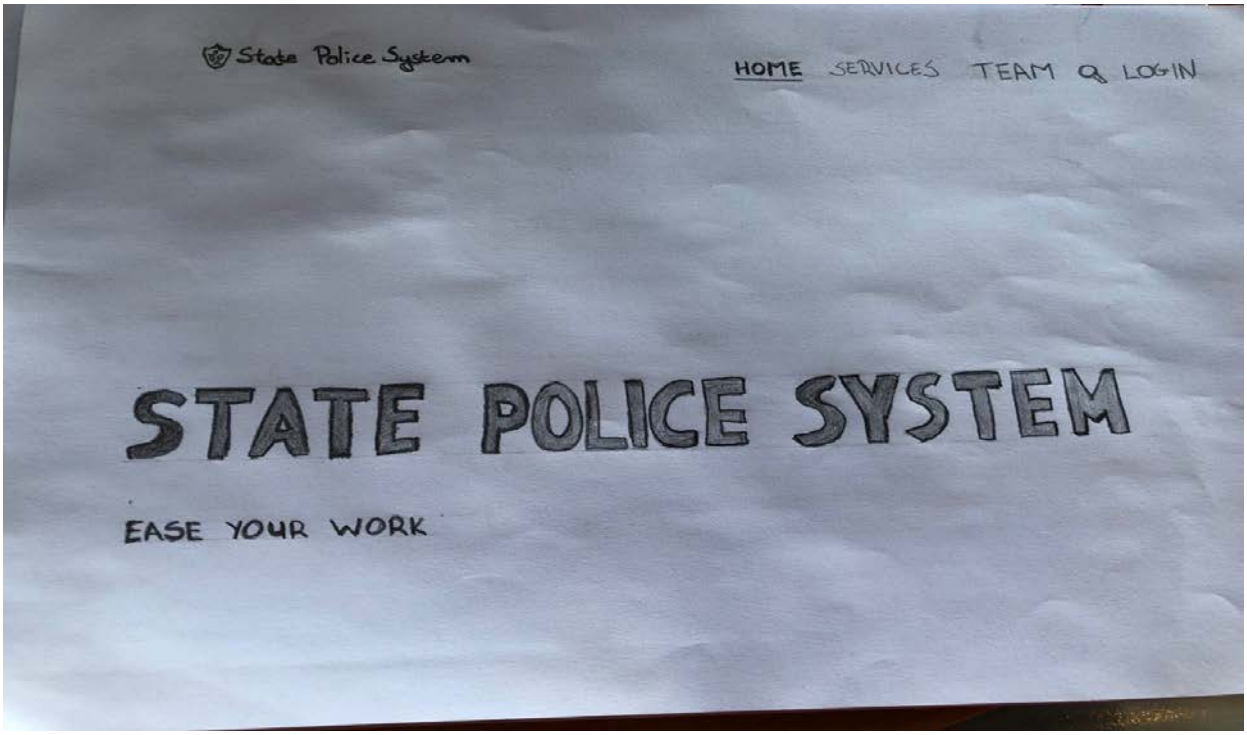
By Functional Hierarchy
When none of the above organizational schemes prove helpful, the overall functionality can be organized into a hierarchy of functions organized by common inputs, common outputs, or common internal data access. Data flow diagrams and data dictionaries can be used to show the relationships between and among the functions and data.

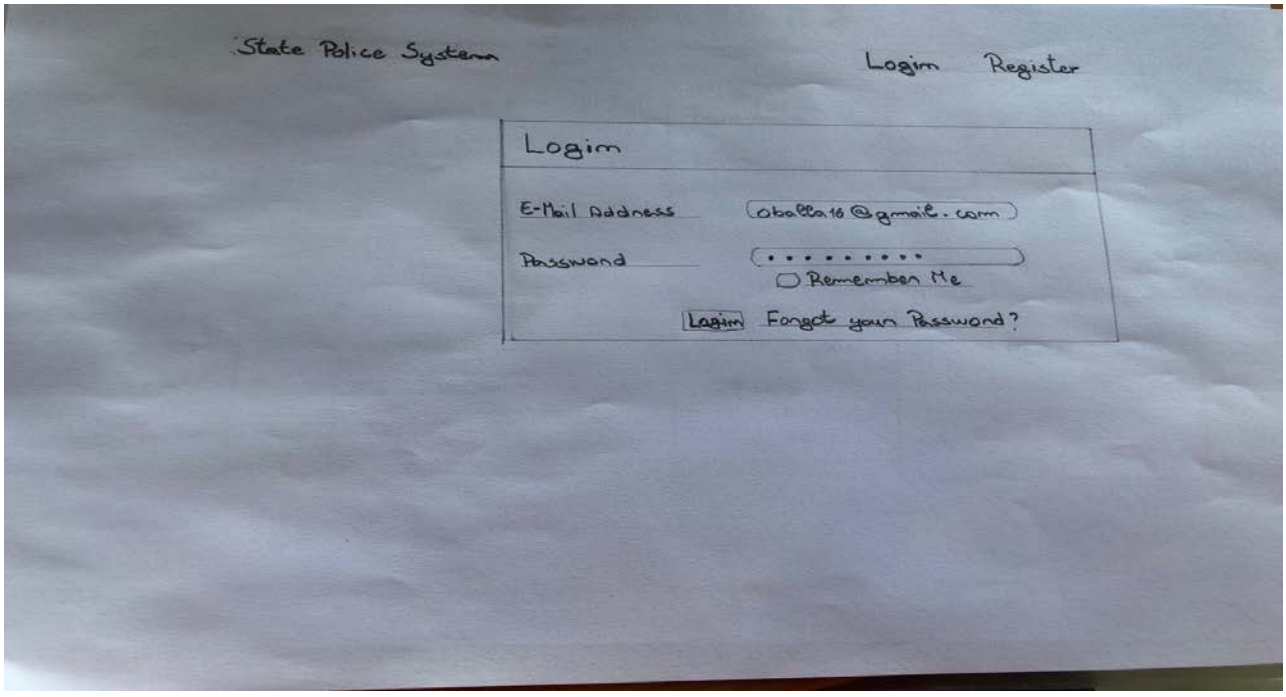
Additional Comments
Whenever a new Requirements Specification is contemplated, more than one of the organizational techniques given above may be appropriate. In such cases, organize the specific requirements for multiple hierarchies tailored to the specific needs of the system under specification.

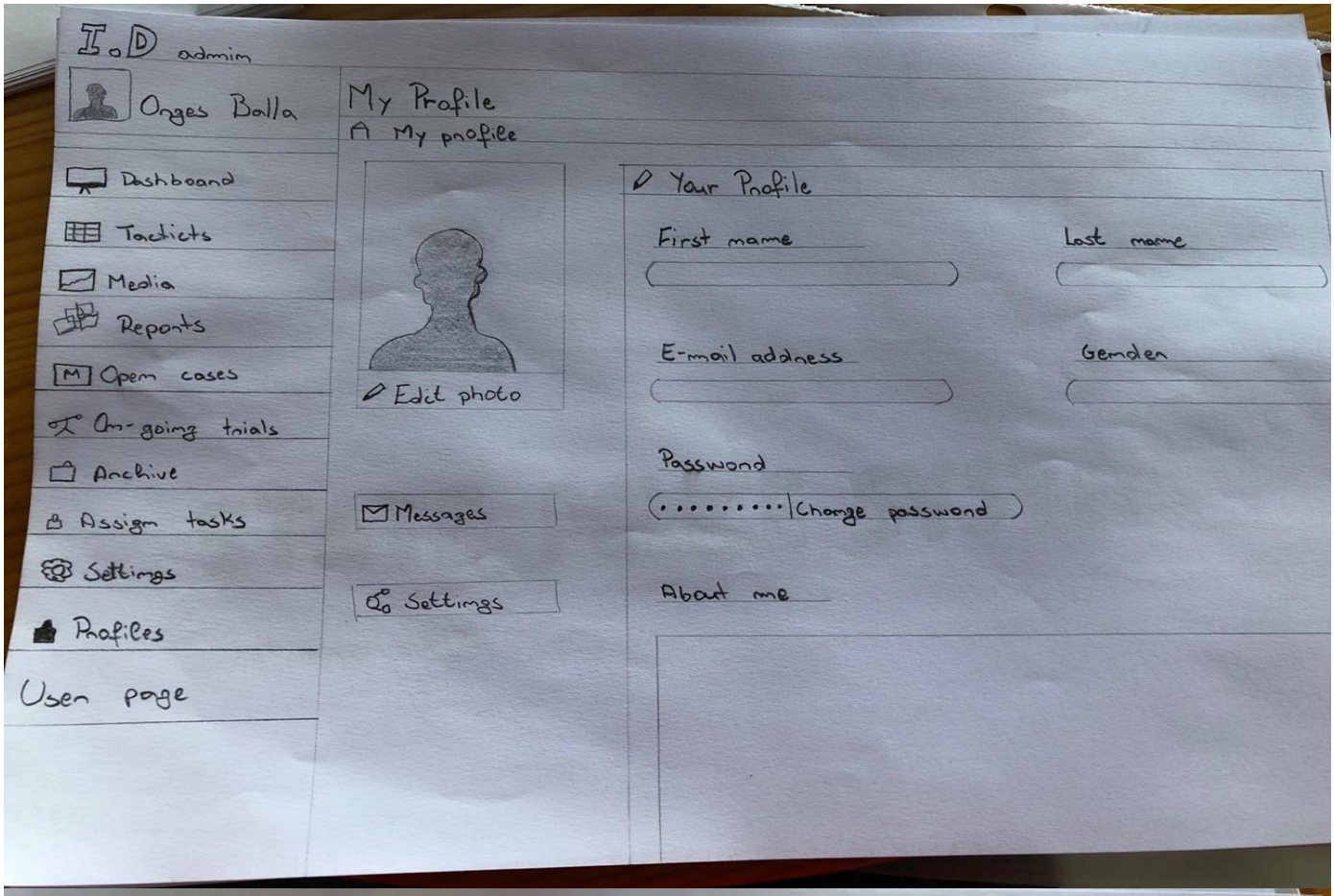
There are many notations, methods, and automated support tools available to aid in the documentation of requirements. For the most part, their usefulness is a function of organization. For example, when organizing by mode, finite state machines or state charts may prove helpful; when organizing by object, object-oriented analysis may prove helpful; when organizing by feature, stimulus-response sequences may prove helpful; and when organizing by functional hierarchy, data flow diagrams and data dictionaries may prove helpful.

Appendix C. Sketches




State Police System
HOME SERVICES TEAM LOGIN
STATE POLICE SYSTEM
EASE YOUR WORK


State Police System
Login Register
Login
E-Mail Address
Password
Remember Me
Login
Forgot your Password?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Onges Balla
Dashboard
Tactics
Media
Reports
Open cases
On-going trials
Archive
Assign tasks
Settings
Profiles
User page
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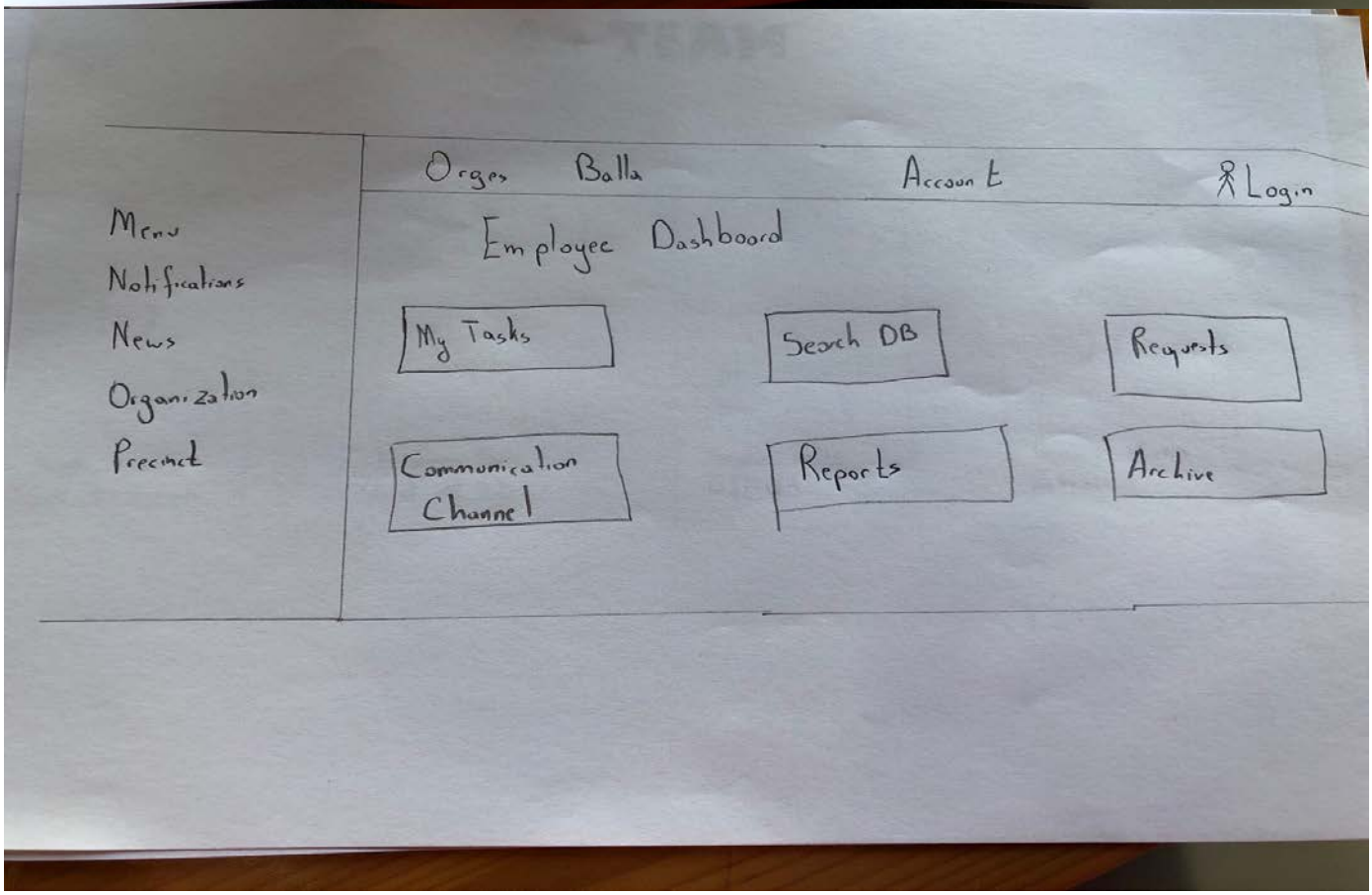
My profile
Edit photo
Messages
Settings
Your Profile
First name
Last name
E-mail address
Gender
Password
Change password
About me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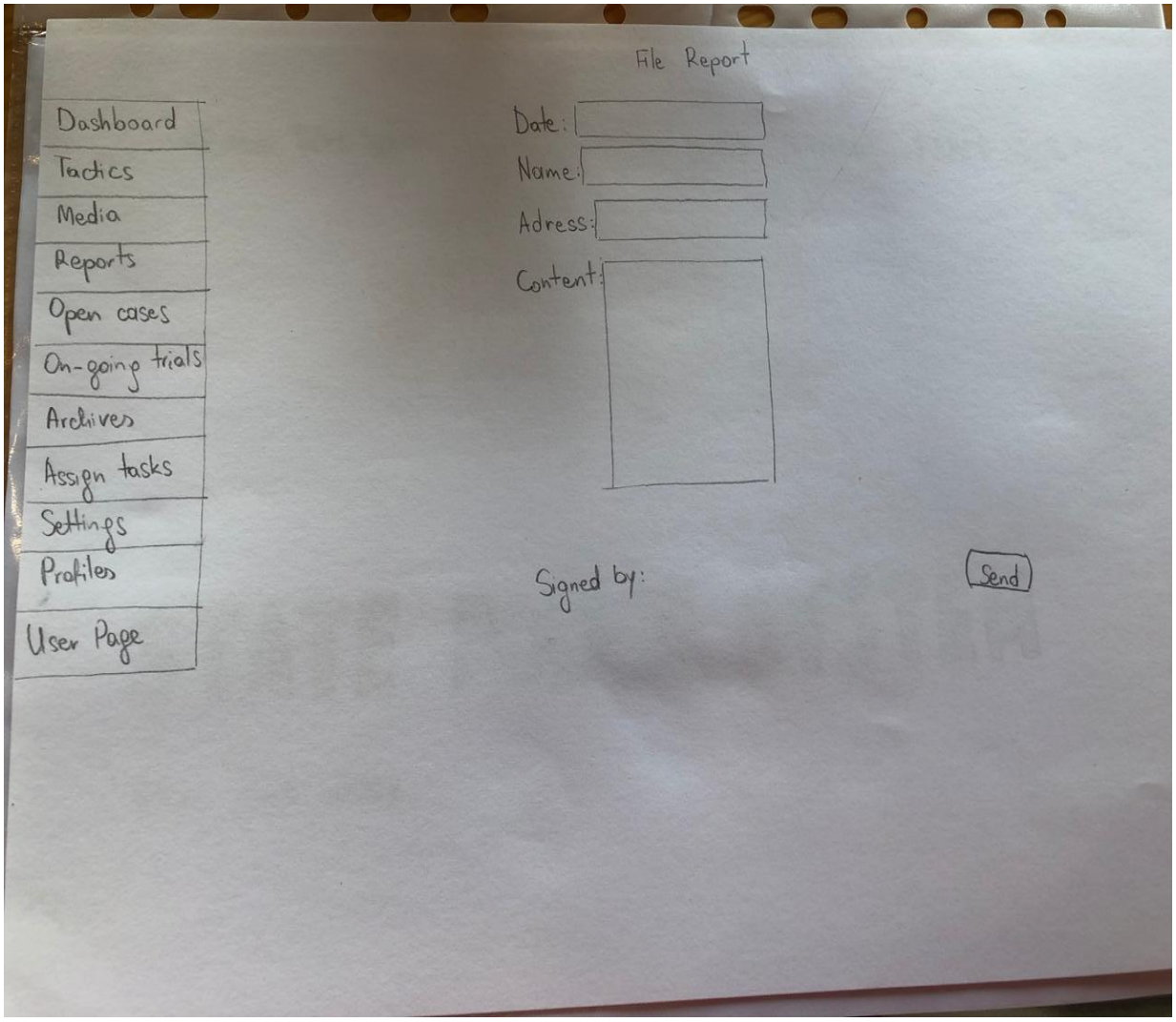
Notifications
News
Organization
Precinct
Onges Balla
Account
Login
Employee Dashboard
My Tasks
Search DB
Requests
Communication Channel
Reports
Archive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Dashboard
Tactics
Media
Reports
Open cases
On-going trials
Archives
Assign tasks
Settings
Profiles
User Page
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Name:
Adress:
Content:
Signed by:
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