

# FINAL PRESENTATION OF HOSPITAL PROJECT

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# AUTOMATED TRACKING OF CONSUMABLES

## DESCRIPTION

- Context:

An IVF lab handles 5000+ cycles annually, relying on a logistics team for tracking consumables. But the tracking system requires weekly manual counting and the records are performed on paper

- Objectives:

- Facilitate the workflow for in-bound consumables
- Create an automated list of consumables that should come from the basement to the lab
- Automate tracking in use and assignment of consumables that need to be ordered

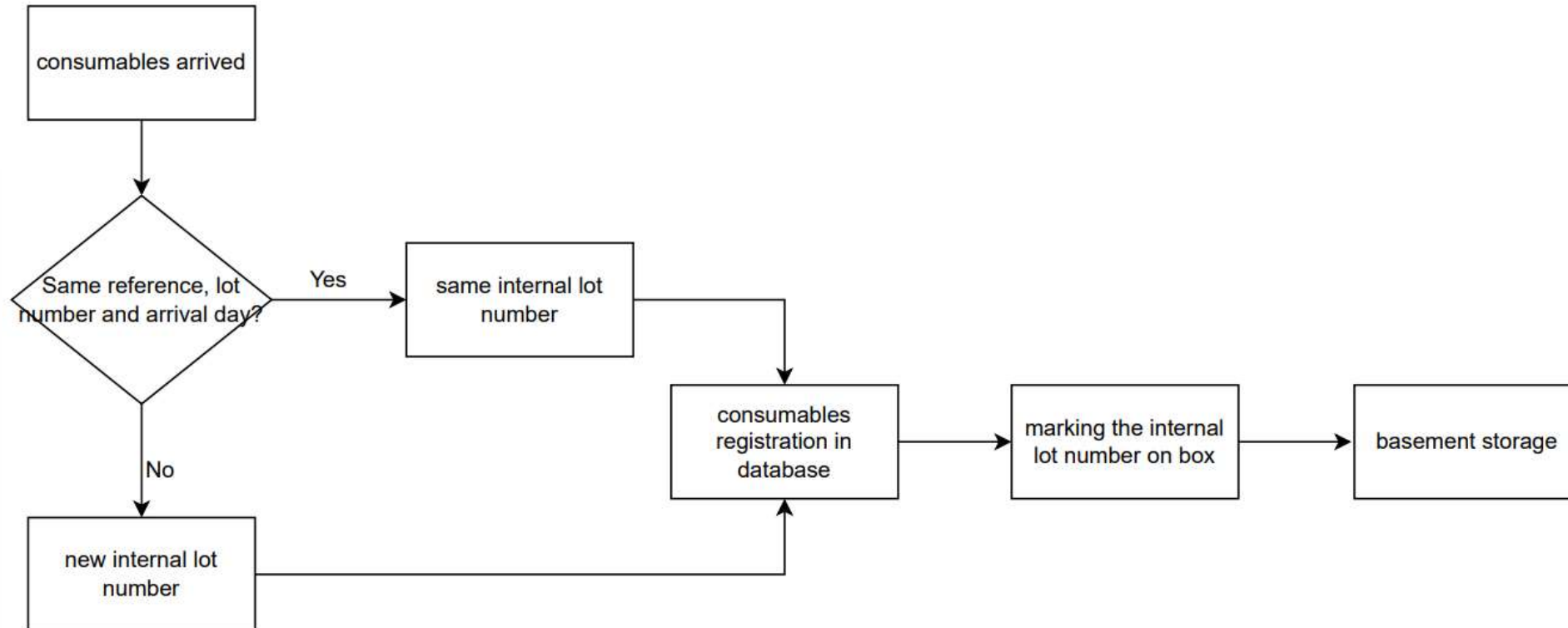
- Deliverables:

- Mapping the current situation
- Propose a plan for optimisation
- Test a plan for optimisation
- If possible: apply a new structure/plan

# ANALYSIS OF THE PROJECT

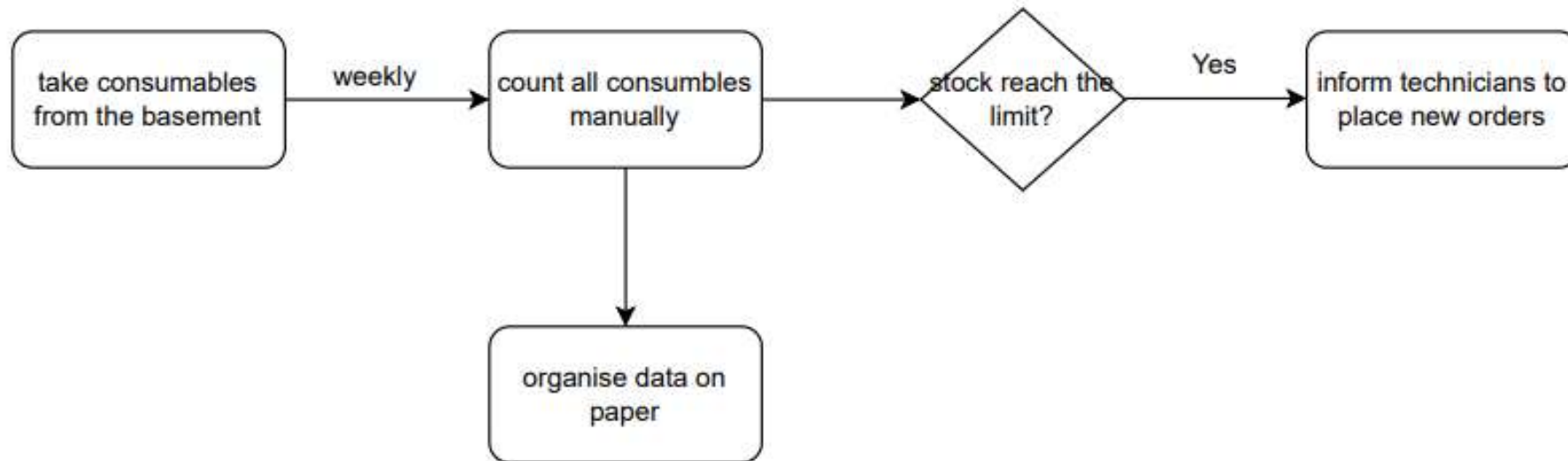
# AUTOMATED TRACKING OF CONSUMABLES

## CURRENT WORKFLOW



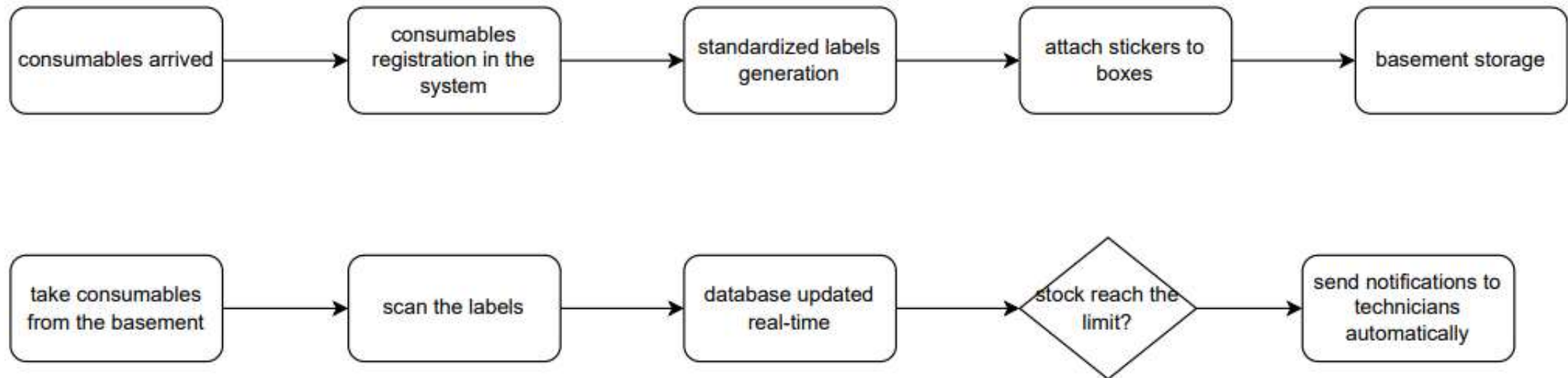
# AUTOMATED TRACKING OF CONSUMABLES

## CURRENT WORKFLOW



# AUTOMATED TRACKING OF CONSUMABLES

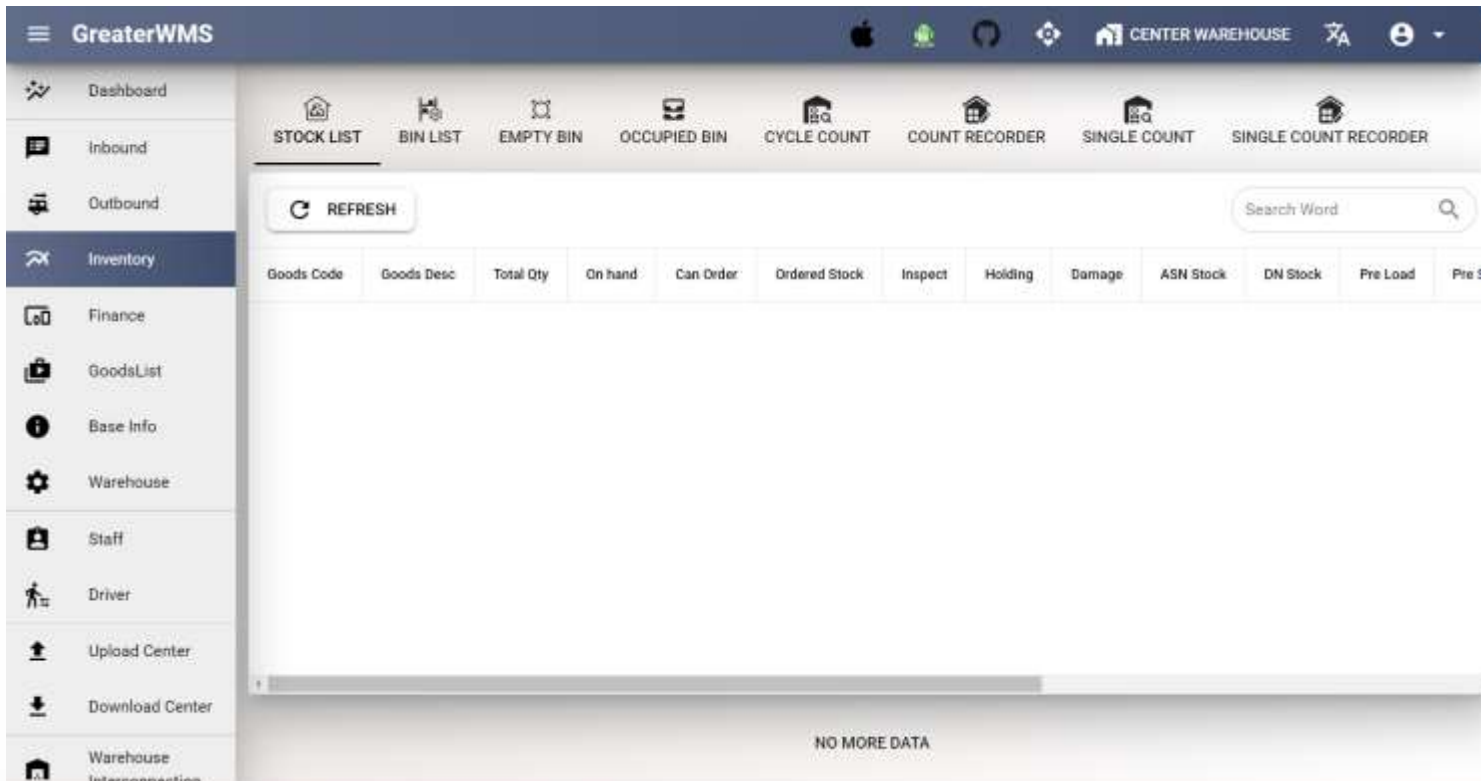
## EXPECTED WORKFLOW



# PROPOSAL OF APPROACH

# AUTOMATED TRACKING OF CONSUMABLES

## PROPOSAL OF APPROACH



Inventory management software in the market

- Pros: mature, multi-functional
- Cons: paid, not customized, unrequired functions, not user-friendly

Customize a web application for automated tracking



# DELIVERABLES

# AUTOMATED TRACKING OF CONSUMABLES

## DELIVERABLES – TECH STACK



Flask is a lightweight and flexible **back-end** web framework for Python.



Layui is a widely-used and lightweight JavaScript library that simplifies **front-end** web development.



SQLite is a lightweight, serverless, and self-contained relational **database** management system (RDBMS).

# AUTOMATED TRACKING OF CONSUMABLES

## DELIVERABLES

IVF

Goods List

Inventory Records

🔍 Name :

Reference :

Factory:

Search

+ Add new item

📦


🔍

🖨

Name	Referen...	Factory	Lot Num...	Internal ...	Num	Arrival Date	Expiry Date	Action
Tips	1235	PearBio	1102	2	8	2023-8-31	2023-12-31	<div>OutInQR CodeDelete</div>
Tubes	1234	PeachBio	1002	2	5	2023-09-03	2023-12-31	<div>OutInQR CodeDelete</div>
Tubes	1234	PeachBio	1001	3	12	2023-09-02	2023-12-31	<div>OutInQR CodeDelete</div>
Tips	1235	PearBio	1101	1	10	2023-09-01	2023-12-31	<div>OutInQR CodeDelete</div>
Tubes	1234	PeachBio	1001	1	12	2023-09-01	2023-12-31	<div>OutInQR CodeDelete</div>
Media	2345	AppleBio	5432	1	20	2023-08-01	2023-12-01	<div>OutInQR CodeDelete</div>

# AUTOMATED TRACKING OF CONSUMABLES

## DELIVERABLES

 Goods List Inventory Records

🔍 Name :

Reference :

Factory:

Search

Name ▴ ▾	Reference ▴ ▾	Factory	Num ▴ ▾	Min Num ▴ ▾	Action
Tubes	1234	PeachBio	29	10	<div>Edit</div>
Tips	1235	PearBio	18	2	<div>Edit</div>
Media	2345	AppleBio	20	5	<div>Edit</div>

# AUTOMATED TRACKING OF CONSUMABLES

## DELIVERABLES

Name ▾	Referen... ▾	Factory	Lot Num... ▾	Internal ... ▾	Num ▾	Arrival Date	Expiry Date ▾
Tubes	1234	PeachBio	1001	1	12	2023-09-01	2023-12-31
Tubes	1234	PeachBio	1002	2	5	2023-09-03	2023-12-31
Tubes	1234	PeachBio	1001	3	12	2023-09-02	2023-12-31
Tips	1235	PearBio	1101	1	10	2023-09-01	2023-12-31
Tips	1235	PearBio	1102	2	8	2023-8-31	2023-12-31
Media	2345	AppleBio	5432	1	20	2023-08-01	2023-12-01

Name ▾	Reference ▾	Factory	Num ▾	Min Num ▾
Tubes	1234	PeachBio	29	10
Tips	1235	PearBio	18	2
Media	2345	AppleBio	20	5

inventory
123 reference
ABC factory
123 lot
123 internal_lot
ABC name
123 num
ABC arrival
ABC expiry

goods
123 reference
ABC factory
ABC name
123 total_num
123 safenumber

Name :

Reference :

Factory:

Search

+ Add new item



Name ▾	Referen... ▾	Factory	Lot Num...	Internal ... ▾	Num ▾	Arrival Date	Expiry Date ▾	Action
Tubes	1234	PeachBio	1001	1	12	2023-09-01	2023-12-31	<button>Out</button> <button>In</button> <button>QR Code</button> <button>Delete</button>
Tubes	1234	PeachBio	1001	3	12	2023-09-02	2023-12-31	<button>Out</button> <button>In</button> <button>QR Code</button> <button>Delete</button>
Tubes	1234	PeachBio	1002	2	5	2023-09-03	2023-12-31	<button>Out</button> <button>In</button> <button>QR Code</button> <button>Delete</button>
Tips	1235	PearBio	1101	1	15	2023-09-01	2023-12-31	<button>Out</button> <button>In</button> <button>QR Code</button> <button>Delete</button>
Tips	1235	PearBio	1102	2	8	2023-8-31	2023-12-31	<button>Out</button> <button>In</button> <button>QR Code</button> <button>Delete</button>
Media	2345	AppleBio	5432	1	7	2023-08-01	2023-12-01	<button>Out</button> <button>In</button> <button>QR Code</button> <button>Delete</button>

# AUTOMATED TRACKING OF CONSUMABLES

## DELIVERABLES

### Pros:

- Automatic update of goods list along with inventory
- Automatic assignment of internal lot numbers
- Automatic warning of consumables in short supply
- Standardized QR code

### Further development:

- Integrate the scanner with the web application, automate in-bound and out-bound process
- Create records sheets for the tracking of inventory update
- Invalid input handling

# AUTOMATED TRACKING OF CONSUMABLES

## RESOURCES

1. <https://flask.palletsprojects.com/en/2.3.x/>
2. <https://marcoagner.github.io/Flask-QRcode/>
3. <https://layui.itze.cn/doc/index.html>
4. <https://www.sqlite.org/lang.html>
5. <https://github.com/GreaterWMS/GreaterWMS>
6. <https://github.com/inventree/InvenTree>