



Bachelor Program «Internet of Things»

Course «Teamwork and Presentation Skills»

Final Project

"Wombase"

Topic:

"Inventory Management Software"

Group №15

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1. Introduction

The aim of our project is to help maintenance companies save their time, increase the efficiency of workers and reduce tool losses.

With our record-keeping software, every worker can easily find out information about the company's inventory. Whether it's day or night, they are able to receive all useful data: lists of available items and where they are. If the instrument is already taken, you can find out who and when took this tool with just by 2 clicks.

However, warehouse managers could easily upgrade lists of tools or workers and monitor the process of taking and returning inventory from the storage.

2. Actuality

There are about 9000 maintenance companies that have several brigades with at least one warehouse in Ukraine. This way, we have more than 80 000 workers in our country, who provide essential services to millions of people. Almost everyday they visit the storages having absolutely no idea which tools are there. So, it causes huge time and money losses every month.

Based on our research, 60% of companies are using well-known but prehistoric methods: notebooks and excel sheets in common. This way, they have loads of boring and similar work, without any automation. If a worker wants to know which tools are available, he has to contact colleagues directly by mobile phone or using viber-chats. They need massive upgrade!

- Does the manager need to add or delete some tools to the list? Easily.
- Some workers got fired and there is no need to save their data? Get rid of his info once and forever.
- Does the worker want to know which tools are currently available? Take a look at our mobile app or chat-bot.
- Does the manager want to receive inventory usage stats to reduce money losses? We provide high quality weekly and monthly reviews.
- Does the worker need to know who has taken his favourite perforator? Just type its model in the search bar.
- Do you want to know who broke this wrench? Let's look in the items log and take off the mask.
- Is the tool broken and unavailable until Thursday? You can view all repair info for better planning.

We have already found 5 clients, who are interested in our project and can give us advice. One of them has already started a trial period with our system. By the way, we are completely engaged in the development, because we have to find new clients to receive some feedback and, fortunately, to test our product.

3. Problem Statement

Time delays are the main problem for maintenance companies and their clients. To understand the main reason for time delays, we interviewed more than 15 maintenance companies from different cities in Ukraine. As they reported, the inability to know where the right tool is at any given moment in time can lead to delays. Moreover, workers have completely no idea what instruments are in storage right now, besides it's important for them. It helps workers quickly and easily find the tools they need to complete a

job, which increases efficiency and productivity. This can eliminate delays, provide an ability to meet deadlines, and increase the satisfaction of end customers.

Therefore, how will our product help them?

Firstly, workers will have the ability to know who and when took any instrument. Secondly, they can receive a list of available tools and note about taking (or returning) some instruments using our app. This way, our product is working by employees and for employees. By the way, storage managers are fully engaged in monotonous work. Hours spent looking for the right formula in excel or making some notes every day can cause different problems due to human factors. This way, our product will give storage managers the ability to store all information about tools and workers in one database with a nice and simple UI.

4. Modeling

Maintenance companies in our region commonly use notebooks or simple databases (like excel). This way they can store tools' information and make notes when workers take some instruments. However, this method requires a special person to sit in the warehouse to upgrade the sheets many times a day. This choice doesn't provide any automation, so employees will have to wait 5-10 minutes to get the necessary information.

Moreover, there are more advanced systems with NFC or RFID tags attached to the instruments. As workers report, tools get damaged very frequently, so they need to change stickers with tags. Despite the higher price, another problem arises for our potential customers.

By the way, with our software maintenance companies can store all required data at once. So the warehouse manager doesn't have to stay at the storage for the whole day. If this user person wants to upgrade the databases, he/she can do it anywhere with an internet connection. It's working this way for all other workers too. According to our calculations, the first version of our software will cost 60-90\$ per month, significantly cheaper than tag systems or storage workers' salary.

We are solving a really common problem in our region, so the maintenance company's staff (storage manager and other workers) is the key to our progress and our core stakeholders.

To implement our system clients need to give us lists of workers and instruments. Good internet connection is one of the key resources too. Finally, every worker can use the web version of our app, download it or use viber (we have viber-bot as backup). Unfortunately, not all workers in Ukraine have the opportunity to do this due to the capabilities of their devices. So we developed an application for brigade lead (or driver) to give them the ability to assign some tools to other people.

5. Conclusions and Improvements

Our project aims to help maintenance companies in Ukraine save time, increase efficiency, and reduce tool losses through our record-keeping software. The software enables workers to quickly find the tools they need and note when they have taken or returned them, while also streamlining the work of warehouse managers. Real-time information about tool availability and location is provided to reduce time delays and increase customer satisfaction. Our software has a cost-effective pricing model and a range of user-friendly features, and has already attracted interest from several potential clients. It is poised to make a significant impact on the maintenance industry in Ukraine.