By

DEVELOPMENT PLAN

Version 1.0

TEAM 7

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1. Introduction

1.1 About this document and its user

Development plan includes the workpackages with the milestones and the time relation of these works. The reader can see all the activities from the beginning of the project and the specific time intervals which are specified for the activities with this document. The milestones of the project are determined and workpackages are divided into subdivisions of work and completion time of each work is specified to complete the milestones. The report is completed with the time line for each of the workpackages which are expressed by using the MS Project.

2. Workpackages

2.1 Software

Decision of IDE and Programming Language

Programming language and a preferred IDE will be chosen.

Decision of Main Tasks of Software

Main Tasks will be decided.

Implementation of Tasks (milestone)

In order to design software in a proper way, it should be divided into subparts. These subparts will form the main tasks. With a proper work it looks clear that main tasks should been barcode file reading, database connection, smart algorithm development, serial communication and adjusting system into multi cash register software. These tasks will be implemented.

- Barcode File Reading Task's Implementation
- Database
  - Database GUI Implementation
  - Database Connection's Implementation
  - Creating Database for 25 Product
- Smart Algorithm
  - Smart Algorithm Development
  - Smart Algorithm Implementation
- Serial Communication's Implementation
- Making Software Adjustable to Multi Cash Registers
  - Registering Cash Registers to System by File Reading

Testing of Each Task (Debugging)

Corrections

Combining Software and Hardware (milestone)

2.2 Hardware

Finalizing the choice of microcontrollers

The microcontroller's requirements will be decided to satisfy the requirement of the project. The following step is to find the appropriate microcontroller to use in the control point and bag dispenser.

Design of control point

External structure of the control point will be drawn and exact dimensions of the structure will be specified. The material which the control point will be produced would be chosen. After drawings and choice of the material, external design of control point will be manufactured. After manufacturing process, the components which are microcontroller and Xbee module would be placed in the control point. The control point will be tested to correct the possible errors about the connections and communication.

Design of bag dispenser

Drawings for the external structure of the bag dispenser will be completed. The dimensions of the dispenser will be determined and finalized. The appropriate production material will be chosen for the product to meet the requirements which can be the weight of the dispenser. Internal mechanical design is a milestone for our project. The design of connection between the motor and bag roll and replacing the new bag roll by removing the exhausted one are important designs to complete the internal structure of the bag dispenser. After the design part of bag dispenser, it will be manufactured and the components which are DC motor, microcontroller, motor driver, Xbee module and bag roll will be placed in the internal structure of the bag dispenser. The bag dispenser will be tested and the possible errors will be corrected.

Wireless data transfer by Xbee

The data transfer by using Xbee modules is another milestone for our project. First of all, 1byte data will be sent to transmitter Xbee module by using serial communication feature of the microcontroller. After the module gets the data from microcontroller, it will send it

to the receiver module and this data will be processed by the microcontroller in the bag dispenser to give a bag from the dispenser. We will send same 8bit data, which contains the bag dispenser's id, from the control point to all of the Xbee modules which are located in the bag dispensers. This 8bit data will be evaluated at each of the bag dispenser's microcontroller to give the bag from the correct dispenser. After implementing the wireless protocol, it will be tested and the possible errors which are about the communication and the connection of the components will be corrected.

2.3 Business

The business plan has some weakness such as break even point in financial plan and marketing principles at marketing plan that will be revised. On the other hand, as we come up with quality assurance and quality configuration management plan in which our vision & mission and CI (configuration items), configuration control and product related request forms principles that are stated will be examine and upgraded with further analysis.
Moreover, to be able to figure out the capacity level of our company we need to address production planning efficiently. Bill of material processing, materials requirements worker requirement analysis and all phases for manufacturing will be examined accordingly.
Furthermore, sales order management, forecasting, shipping, transportation management analysis will be made for the sake of the sales process. In order to Material and inventory and warehouse management we will come up with MRP that will integrate to our company.

We come up such project management document to facilitate the evaluation of our project in the long run.

3. References

1) “XBee-PRO 802.15.4 OEM RF Modules”.< http://www.digi.com/products/wireless-wired-embedded-solutions/zigbee-rf-modules/point-multipoint-rfmodules/xbee-series1-module#overview>
2) “Kompozit Malzemeler”. <http://www.obitet.gazi.edu.tr/obitet/malzeme_bilgisi/kompozit%20malzemeler.pdf>