



# Product Requirements Document



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## 1 Objective

Vision	<i>We hope that this product will help many individuals and companies that wish to make the feeding animals process easy and not depend on human involvement ,and also get feedback on animal feeding behavior.</i>
Goals	<i>Reliable system to automatically feed and monitor pets.</i>
Initiatives	<i>Reducing pet expenses by learning eating behavior. Cheap setup and real time monitoring. Limited access for pets to a supervised self feeding environment.</i>
Persona(s)	<i>People whose have domestic animal , companies (e.g zoo ,kennel) ,university campuses , municipalities</i>

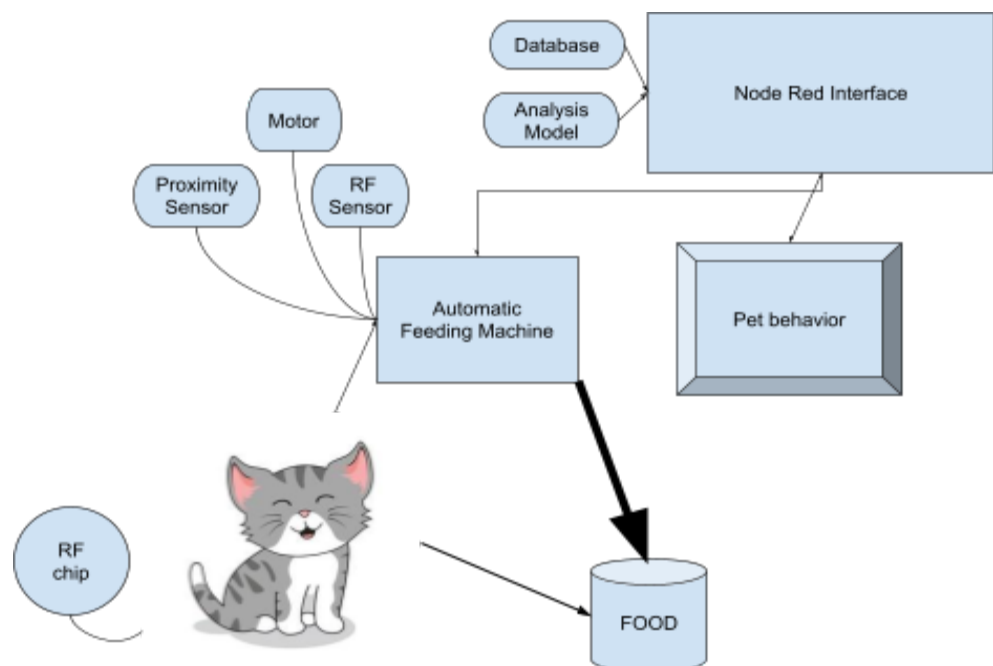
## 2 Release

Release	<i>final submission of project</i>
Date	<i>25.8.21</i>
Initiative	<i>presentation of project day</i>
Milestones	<ul style="list-style-type: none"> <li>● <i>Physically construct the system.</i></li> <li>● <i>Coding in Arduino.</i></li> <li>● <i>Interface in Node Red.</i></li> <li>● <i>System testing.</i></li> </ul>
Features	<i>chip identifier, analysis system, automated feeding.</i>
Dependencies	<i>Network , electronics components, Integrated Development Environment</i>

### 3 Features

Feature	Chip identifier	Analysis system	Automatic feeding
Description	Unique chip for authentication.	Analyse eating behaviors.	Automatic feeding machine.
Purpose	Grant specific access and deny outsiders.	Learn the behavior of the pet by its eating habits.	Feeding the pet without human involvement.
User problem	Multiple pets wanting to eat at the same time, that might have different food needs.	Dietary diseases, food expenses, premature diagnosis.	Having to fill the pets food.
User value	Each pet can be identified with a unique chip to gain access.	Diagnosing health problems before they appear. Reduce excess food expenses.	Food plate is automatically filled when the pet wants to eat.
Assumptions	Other pets with chips might be nearby.	Machine Learning.	Mechanic system with a container for food.
Not doing	Anything that is out of scope for this feature.	Does not change system behavior without user permission.	Does not self fill the container.
Acceptance criteria	Proximity and valid chip id.	Enough time for ML to analyse.	Non empty container of food, functioning motor.

### 4 User flow and design



## 5 [Analytics](#)

Key performance indicator	Baseline	Target	Timeframe
Authentication	Initial step - manage to assemble ESP32 arduino	receive read in arduino.	release date
Physical system with food container	Construct a system to filter food by a sensor	Fill a plate with signal sent from arduino	release date
Node-Red Interface	UI	Improve system control	release date
Analysis model	collect information about animal eating behavior.	Use data to learn pet's health status and feeding size and times.	release date

## 6 [Future work](#)

Future features	Purpose	Priority	Timeframe
Camera sensor	Improve effectiveness of the identification process	medium	x