SMART WATERING SYSTEM FOR URBAN FARMING

PROBLEM STATEMENT: EFFICIENT URBAN FARMING APPROACHES

OUR MAIN CONCERN IS TO PROVIDE AN IOT BASED DEVICE WHICH DOES NOT REQUIRE HUMAN INTERFACE.THE DEVICE IS DESIGNED TO FULFILL REQUIRMENTS FOR VERTICAL FARMING WHICH IS A

REVOLUTIONARY AND MORE SUSTAINABLE METHOD OF AGRICULTURE AS IT SAVES CONSIDERABLE SPACE AND SOIL.

SINCE URBAN RESIDENTS ARE USUALLY BUSY AND REQUIRE AN AUTOMATED DEVICE TO LOOK AFTER THE REQUIRMENTS OF THE PLANTS, THE DEVICE PROVIDES AN EASY AND CHEAP SOLUTION .THE DEVICE PROVIDES FLEXIBILITY TO TAKE INPUTS FROM THE USER IN CASE OF DETAILS REGARDING WATER REQUIRMENT,TYPE OF PLANTS,NUMBER OF DAYS TAKEN BY THE PLANTS TO YEILD THROUGH A MOBILE APPLICATION.THE DEVICE IS AUTO RECHARGABLE.

COMPONENTS USED:

1) L293D : MOTOR DRIVER

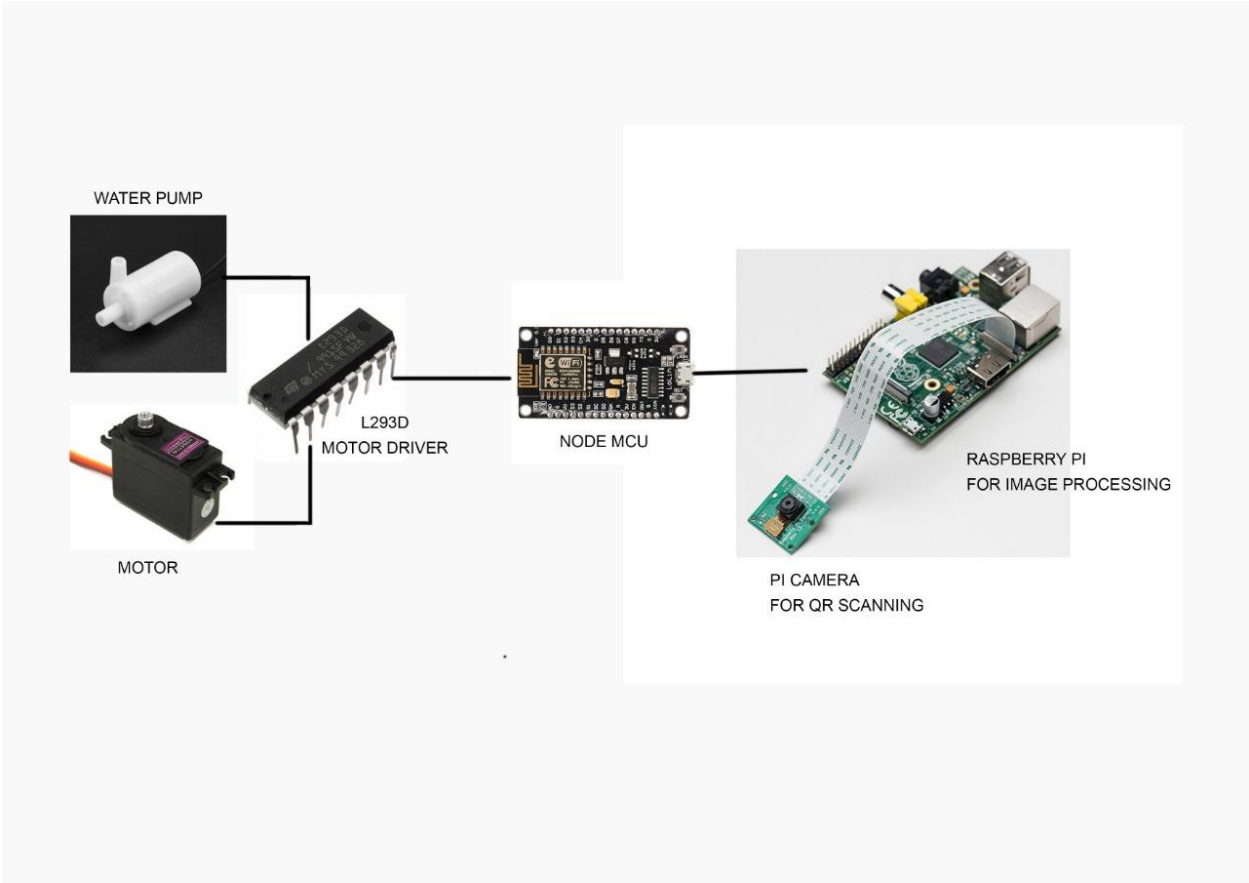
2) ARDUINO NANO : MICROCONTROLLER

(RASBERRY PI)

3) SERVO MOTOR : FOR MOVEMENT

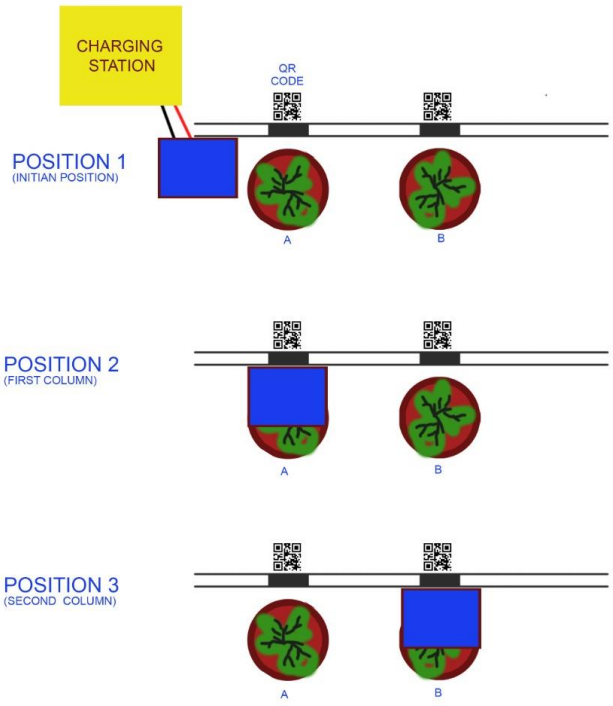
4) PUMP : FOR WATER SUPPLY

5) IR SENSOR (PI CAMERA) : TO DETECT THE POSITION OF DIFFERENT PLANTS



WORKING:

EACH TYPE OF PLANT IS PROVIDED WITH A UNIQUE QR CODE WHICH CONTAINS THE DETAILS REGARDING THE PLANT. THE DEVICE IS PROVIDED WITH A PI CAMERA WHICH SCANS THE QR CODE AND RETRIVES THE DATA REGARDING THE PLANT THROUGH THE QR CODE. DIFFERENT PLANTS ARE PROVIDED WITH DIFFERENT QR CODE. THE USER CAN MODIFY THE INPUT GIVEN TO THE DEVICE THROUGH THE APP.



THE DEVICE CONSIST OF A SERVO MOTOR WHICH WILL DRIVE IT FROM POINT TO POINT B. THE MOTOR IS CONTROLLED USING L293D MOTOR DRIVER. IT ALSO CONTAINS A SMALL WATER PUMP WHICH WHEN REQUIRED SUPPLIES WATER TO THE PLANT. THE OVERALL TASK IS CONTROLLED WITH THE HELP OF RASBERRY PI.THE POWER SUPPLY IS GIVEN BY A LITHIUM ION BATTERY.

THE DEVICE MAKES USE OF THE BUILT IN WIFI MODULE TO HELP IN HUMAN DEVICE INTERACTION (AS IN,SENDING NOTIFICATIONS TO THE USER BASED ON THE OUTPUT).