

ESTIMATION OF OVER WEIGHT IN WATER VEHICLES

This Report Presented in Partial Fulfillment of the Requirements for the Degree of
Bachelor of Science in Computer Science and Engineering

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ABSTRACT

Transportation stacking activities framework is an imperative to determine the delivery weight stacked into the related stacking and each single ship hold. The transportation over-burdening will build the feelings of anxiety in the ship's structure. The over-burdening rate ports, where there will be no appropriately situated dispatching gauging hardware and the ship's officer ought to be demand that the stops over stacking to permit draft studies, uprooting figuring s to performed to be guarantee consistence with the concurred stacking plan. We've used weight cell which 2 and 3 output pin. There is a LED is combined of greed and red color. If the ship is overloaded then the LED is ON and a buzzer will ring. Also a message will send automatically to the captain of the ship. That means it has over loaded and that time we should take a step to decrease weight. But other hands if the red LED is on that means ship overloaded/weighted for this reason the ship will not start. There is a display which show the over loaded message and count the weight also. At this time some weight/load should be decreased and then ship will be starts.

APPROVAL

This Project/internship titled “**Estimation Of Overweight In Water Vehiele**”, submitted by Name: Kanij Nahar Arifa(ID: 152-15-6115) and Name: Rokeya Akter Shima(ID: 152-15-482), to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 3rd May, 2019.

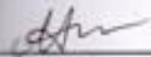
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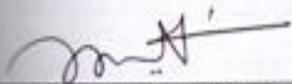
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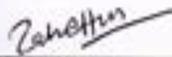
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DECLARATION

I am declare that, this project has been done by me under the supervision of **Md Zahid Hasan, Assistant Professor, Department of CSE, Daffodil International University**. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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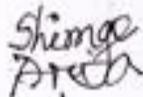
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CHAPTER 1

INTRODUCTION

1.1 Introduction

The conveyance technique is a gigantic activity in the water transport game plan of the many making countries because of the amazingly trashy cost and higher accessibility stood out from other transportation system and making a colossal enthusiasm for transport of stock and explorers acts. Nevertheless, this technique for transport has ended up being less requesting to human life in light of the restriction of advantages, nonappearance of thought, and the nonattendance of development to keep up and screen the conductors and the water related vehicles. In the forefront time frame visual disability is a critical hazard to humankind. Our endeavor will deal with the issue of over. Weight confirmation for water vehicles. There is about 300 to 400 hand protect people in Bangladesh are left their life as demonstrated by Bangladesh water transport relationship for overweight issue.

1.2 Motivation

Outperforming a vehicle's most extraordinary suitable weight isn't only a hazard to the driver and other road customers; it is an unlawful offense which passes on with it an extent of threats and disciplines, from fixed fines to imprison sentences. With forswearing sees on the development, we research the issue of over-loading and how to avoid it. For any business, extending capability is basic to diminishing working costs and improving net incomes. While transporting stock, the impulse to over-trouble a vehicle in an idea to extend payload and decrease all things considered fuel costs can be an extravagant foul up.

1.3 Problem Statement

Over weight issue in Bangladesh is one of the essential issue, without guarantee it routinely we go up against this unbearable issue. All the past issues we're endeavor to deal with this issue. To help the customer with sparing their life by sketchy over weight issue in water transport .Our splendid over weight protection errand will serve the point of the water transport- While the water vehicles

will get over weight then the water level pointer will exhibit this issue and they don't supported the vehicles for start.

1.4 Business Model

This thing will be covers a couple of necessities of our buyer to keep up a vital separation from the preventions on their way as helping them and to accomplishing our target we meet with various buyer to know correctly why they want it and support us to got a fantasy for last thing to be pleasant. It moreover serves to guided entirely our patrons to find the better course to the spread what the entire buyer wants. In our trade the open things doesnt cover our beginning and end needs. We are endeavoring basically finding a white stay without any developments to support the customer.

1.5 Technical and Software Equipment

- Weight Cell (10kg)
- Arduino uno
- Buzzer
- Bread board
- Resistor (220ohm)
- Battery (3.7v)
- LED (green+red)
- Display (16*2)
- GPS (sim8001)
- GSM (NE-O6)
- Jumper wires
- Switch Button

1.6 Pre-Project Planning

We are glancing through an issue and found a critical issue of overweight for water transportation. In this issues game plan contraption are not available in our country. Along these

lines, we have to endeavor handle this issue in open and disgraceful cast. The conveyance methodology is a significant activity in the water transport course of action of the many making countries. We have to guarantee this transportation system for astounding incident by overpowering overweight.

1.6.1 Project Timing

There are three fundamental parts which is individual in performance time and each part had heaps of branches which is in arrangement performance time.

1.6.2 Technology Readiness

Overweight confirmation is the one of the key parts in the water transport. This thing is incredible strategy used which made our life to less requesting in light of the way that the Overweight confirmations for water transportation system are extraordinary criticalness between the Bangladeshi buyers.

1.6.3 Market Readiness

Displaying is the critical activity to help accomplish the customers. Advancing is the business technique of making relationship with and satisfying customers. The market constantly has a planning to any new thing in the market. There are various standard things in the market between the extraordinary things to give the buyer the best one for them. Market consolidates instrument that infers for choosing cost of the distinctive things and passing on the esteem things and restorative touch ups game plans and trades and influencing flow.

1.6.4 The Product Plan

This course of action makes the errand pleasant in his execution since anything sorted out or needed to do give the best results.

1.7 Project Outline

Chapter2 portray all the equipment gadgets and power supply to the venture.

Chapter3 depicts the parts subtleties.

Chapter4 audits results found through the undertaking and give a dialog on the discoveries.

Chapter5 indicated the constraints of the undertaking, gives the future works that might be drawn closer and end.

1.8 Summary

The conveyance system is an imperative employment in the water transport course of action of the many making countries because of the especially ratty cost and higher accessibility stood out from other transportation structure and making a significant enthusiasm for transport of stock and voyagers acts. The water transportation system makes our life to easier.in this transportation structure has such a critical number of obstruction as atmosphere issue preminent issue and overweight acts. This safe are show to partition of water level from ship. If your water vehicle outperforms the purposes of repression in light of the constant burden you're passing on, or the .

CHAPTER 2

BACKGROUND

2.1 Introduction

A microcontroller is a small PC on a solitary encouraged circuit. Now a days day wording, it takes after, yet less refined than, a structure on a chip or SoC; a SoC may meld a microcontroller as one of its parts. A microcontroller holds something close to one CPUs (processor centers) near to memory and programmable information/yield peripherals. Program memory as Ferroelectric RAM, NOR impact or OTP ROM is besides reliably included on chip, and also a little extent of RAM. Microcontrollers are normal for implanted applications, rather than the microchips good uses in PCs or other general target applications including particular discrete chips.

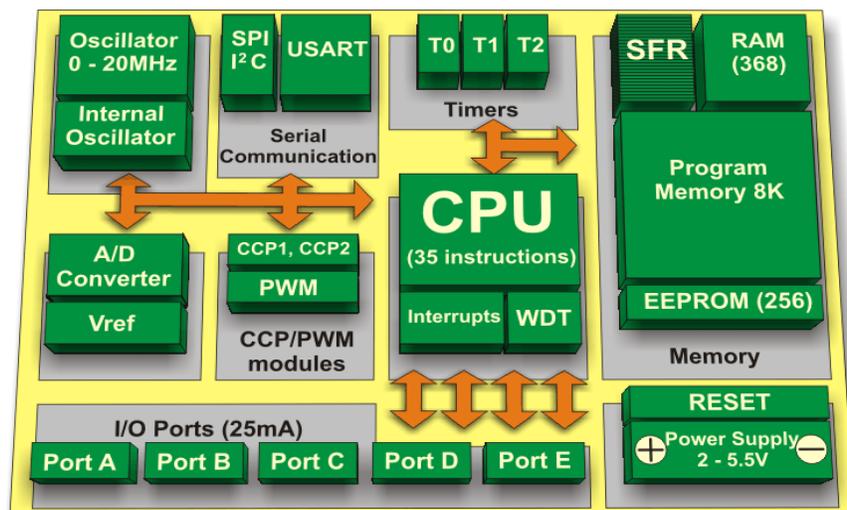


Figure 2.1 Microcontroller Parts

2.2 Related Works

Shipping loading operations system is a vital to establish the shipping weight loaded into the associated loading and every single ship hold. The shipping overloading are increasing the strain levels within the ship's structure. The overloading rate

ports, wherever there'll be no befittingly positioned shipping deliberation instrumentation and therefore the tar ought to be request that the stops over loading to permit draught surveys, displacement calculations to performed to be guarantee compliance with the in agreement loading set up. We've used 2803 IC that one to eight variety input pin and eleven to eighteen outputs pin. There area unit four lower pins and 4 higher pins round the ship. If water level touches the any pin of lower level then the light-emitting diode is on it means that it's over loaded which time we should always take a step to decrease weight. However alternative hands if the water touches any pin of the higher level then DPDT Relay are OFF meaning ship has overloaded/weighted for this reason the ship won't begin. we've used relay for determination over ripple downside. At now some weight/load ought to be bated and so ship are starts.

2.3 Comparative Studies

Transportation stacking activities framework is an important to work out the delivery weight stacked into the connected stacking and every single ship hold. The transportation over-burdening can build the emotions of hysteria within the ship's structure. The over-burdening rate ports, wherever there'll be no fittingly placed dispatching gauging hardware and therefore the officer have to be compelled to be demand that the stops over stacking to allow draft studies, uprooting problem solving s to performed to be guarantee consistence with the concurred stacking arrange. We've used weight cell that a pair of and three output pin. There's a LED is combined of greed and red color. If the ship is overladen then the LED is ON and a buzzer can ring. Conjointly a message can send mechanically to the captain of the ship. Meaning it's over loaded which time we must always take a step to decrease weight. However different hands if the red LED is thereon suggests that ship overloaded/weighted for this reason the ship won't begin. There's a show that show the over loaded message and count the burden conjointly. At this point some weight/load ought to be ablated then ship are going to be starts.

2.4 Mid-range core devices (14 bit)

These contraptions consolidate a 14-bit wide code memory, and a redesigned 8 level critical call stack. The course set complexities by no from the benchmark gadgets, in any case the 2

unnecessary opcode bits permit 128 registers and 2048 explanations of code to be plainly tended to. There are a few preposterous assorted sign, and two over the main 8-bit requesting sign, consolidate and subtract. The mid-grow center is open in the greater part of gadgets named PIC12 and PIC16.

2.5 Enhanced mid-range core devices (14 bit)

Improved mid-grow center contraptions present a logically huge equipment stack, extravagant reset strategies, 14 unprecedented sign and 'C' programming tongue degrees of progress. Specifically. There are two INDF registers (INDF0 and INDF1) use Ferns registers like territory registers, with a course of action of watching out for modes.

2.6 PIC18 high end core devices (16 bit)

In 2000, Microchip exhibited the PIC18 architecture.[2] Unlike the 17 course of action, it has ended up being particularly notable, with incalculable varieties press before long in make. Instead of before devices, which were when in doubt adjusted in social event, C has transformed into the overwhelming progression vernacular. The PIC18 has a 12-bit RAM address space, isolated into 16 pages of 256 bytes. The 8-bit f field chooses the area in mix with the a bit and the 4-bit bank select enroll (BSR). If a=0, the BSR is neglected and the f field is sign-connected with the range 0x000– 0x07F (overall RAM) or 0xF80– 0xFFFF (one of a kind limit registers). If a=1, the field is connected with the BSR to deliver the 12-bit address. The PIC18 widens the FSR/INDF segment used in past Pismire processors for abnormal tending to in two diverse ways. In the first place, it gives three report select registers. The FSRnregisters are 12 bits long (each split into two 8-bit separates FSR0L through FSR2H), and access .

2.7 Device families

PIC scaled down scale chips are arranged with a Harvard building, and are offered in various device families. The benchmark and mid-run families use 8-bit wide data memory, and the highest point of the line families use 16-bit data memory. The latest plan, PIC32MZ is a 32-bit MIPSbased microcontroller. Direction words are in sizes of 12-bit (PIC10 and PIC12), 14-bit (PIC16) and 24-bit (PIC24 and dsPIC). The twofold depictions of the machine sign vacillate by family and are showed up in PIC direction postings.

2.8 ELAN Microelectronics clones (13 bit)

ELAN Microelectronics Corp. make a development of PICmicro-like microcontrollers with a 13-bit heading word. The sign are ordinarily perfect with the mid-go 14-bit course set, yet restricted to a 6-bit enlist address (16 wonderful target registers and 48 bytes of RAM) and a 10-bit (1024 word) program space. The 10-bit program counter is open as R2. Examines get to just the low bits, and makes direct the high bits. An exceptional case is the TBL bearing, which modifies the low byte while saving bits 8 and 9.

2.9 Code space

The code space is typically finished as on-chip ROM, EPROM or flicker ROM. With everything considered, there is no game-plan for verifying code in splendid memory in light of the nonattendance of a beguiling memory interface. The extraordinary cases are PIC17 and select high stick check PIC18 contraptions.

2.10.1 Word estimate

All PICs handle (and address) information in 8-bit projections. In any case, the unit of addressability of the code space isn't commonly the comparable as the information space. For instance, PICs in the precedent (PIC12) and mid-run (PIC16) families have program memory addressable in the relative word measure as the course width, for instance 12 or 14 bits

2.10.2 Stacks

PICs have a rigging call stack, which is utilized to spare return addresses. The apparatus stack isn't tweaking available on prior gadgets, in any case this changed with the 18 game-plan contraptions.

2.10.3 Performance

The structure choices are guided at the increase of speed-to-cost degree. The PIC building was among the key scalar CPU plans is still among the most direct and generally moderate. The Harvard planning, in which sign and information begin from withdrew sources, unwinds timing

and microcircuit structure enormously, and this great conditions clock speed, cost, and power use. The PIC heading set is fit to execution of energetic request tables in the program space. Such request take one bearing and two heading cycles. Different points of confinement can be appeared along these lines. Streamlining is upheld by the unassumingly monstrous program space of the PIC (for instance 4096×14 -bit words on the 16F690) and by the structure of the bearing set, which licenses implanted constants.

2.10.4 Advantages

1.They are reliable and coming up short of PIC rate is less. In addition, execution of the PIC is fast an immediate aftereffect of using RISC plan.

2.start is furthermore less when appeared differently in relation to other littler scale controllers. When we find in the product engineer point of view interfacing is basic, in like manner we can relate basic contraptions direct with no extra equipment and use them.

3.Writing PC programs is in like manner straightforward when diverged from various microcontrollers.

2.10.5 Restrictions

One gatherer

Register-bank changing is required to get to the entire RAM of various contraptions

Operations and registers are not symmetrical; some sign can address RAM or conceivably speedy constants, while others can use the gatherer in a manner of speaking.CPU is the brain of a microcontroller .CPU is responsible for getting the direction, disentangles it, by then finally executed. CPU interfaces all parts of a microcontroller into a singular system. The basic limit of CPU is bringing and unwinding sign. Direction got from program memory must be decoded by the CPU.

2.10.6 CPU

CPU is the brain of a microcontroller .CPU is responsible for getting the direction, disentangles it, by then finally executed. CPU interfaces all parts of a microcontroller into a singular system.

The basic limit of CPU is bringing and unwinding sign. Direction got from program memory must be decoded by the CPU.

2.10.7 Memory

The limit of memory in a microcontroller is similar as microchip. It is used to store data and program. A microcontroller when in doubt has a particular proportion of RAM and ROM (EEPROM, EPROM, etc) or burst memories for securing program source codes.

2.10.8 Parallel information/yield ports

Parallel information/yield ports are essentially used to drive/interface distinctive devices, for instance, LCD'S, LED'S, printers, memories, etc to a microcontroller.

2.10.9 Serial ports

Consecutive ports give distinctive successive interfaces among microcontroller and diverse peripherals like parallel ports.

2.10.10 Timers/counters

This is the one of the significant limit of a microcontroller. A microcontroller may have more than one clock and counters. The tickers and counters give all arranging and counting limits inside the microcontroller. The critical assignments of this territory are perform clock limits, balances, beat ages, repeat assessing, making movements, etc.

2.11 Analog to Digital Converter (ADC)

ADC converters are used for changing over the straightforward banner to cutting edge outline. The data movement in this converter should be in straightforward casing (for example sensor yield) and the yield from this unit is in electronic edge. The propelled yield can be use for various automated applications (for example estimation devices).

2.11.1 Digital to Analog Converter (DAC)

DAC perform reversal undertaking of ADC conversion. DAC convert the mechanized banner into straightforward course of action. It regularly used for controlling straightforward contraptions like DC motors, distinctive drives, etc.

2.11.2 Interval control

The Interval control used for giving Interval (delay) for a working venture .The Interval may be abnormal (started by using Interval stick) or inside (by using Interval direction in the midst of programming).

2.11.3 Special working square

Some microcontrollers used only for some extraordinary applications (for example space systems and mechanical self-sufficiency) these controllers holding outrageous ports to perform such one of a kind exercises. This considered as one of a kind working square.

2.11.4 IC ULN 2803

IC ULN2803 make out of octal high voltage, high current Darlington transistor groups. The eight NPN Darlington related transistors in this gathering of bunches are ideally appropriate for interfacing between low basis level electronic equipment, (for instance, TTL, CMOS or PMOS/NMOS) and the higher current/voltage requirements of lights, exchanges.

2.11.5 Features

- Eight Darlington with Common Emitter.
- Open– gatherer yields.
- Free wheeling clasp diodes for transient concealment.
- Output Current to 500 mA.
- Output Voltage to 50 V.
- Inputs stuck inverse yields to disentangle board design.

2.11.6 Pin out:

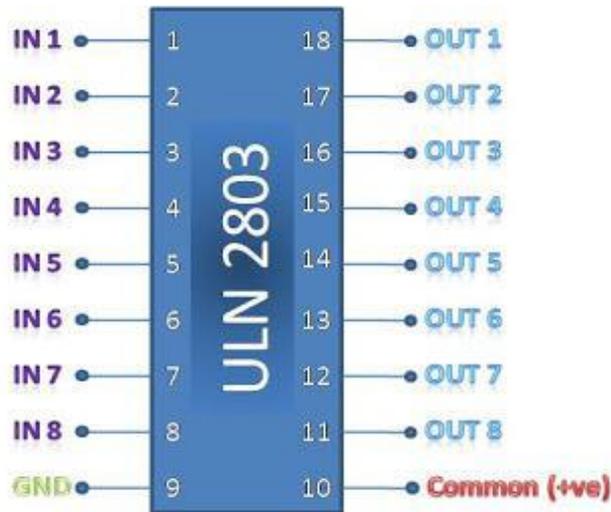


Figure 2.2: Pin diagram of ULN 2803

2.11.7 Working

The ULN 2803 IC is made up of eight NPN Darlington related transistors (much of the time called a Darlington coordinate). Darlington coordinate is made up of two bipolar transistors with the true objective that the current upgraded by the first is heightened further always to get a high current increase β or hurl. The figure showed up underneath is one of the eight Darlington sets of ULN 2803 IC.

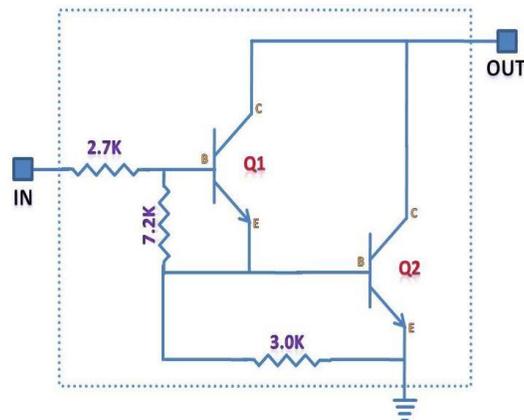


Figure 2.3 Darlington transistors

Now 2 cases arise:-

Case 1: When I_N is 0 volts.

Q1 and Q2 both won't immediate as there is no base current given to them. As such, nothing will appear at the yield (OUT).

Case 2: When I_N is 5 volts.

Data current will increase and the two transistors Q1 and Q2 will begin to lead. By and by, input current of Q2 is mix of data current and maker current of Q1, so Q2 will coordinate more than Q1 realizing higher current increase which is particularly required to meet the higher current necessities of contraptions like motors, exchanges by the first is strengthened further continually to get a high current addition β or hurl. The figure showed up underneath is one of the eight Darlington sets of ULN 2803 IC. The ULN2803 IC make out of eight NPN Darlington coordinate which gives the most ideal current increase required by the loads. We all in all understand that the transistors are used to increase the current yet here Darlington transistor sets are used inside the IC to make the required escalation.

2.11.8 Simple water level pointer utilizing ULN2803

These Darlington drivers are "open expert"; they can sink back and forth movement, anyway they can't source rhythmic movement. They're used as a ground-side switch for a wide scope of things; amazingly unmistakable with experts to control stepper motors and exchanges - essentially, higher current weights than standard TTL levels reinforce.

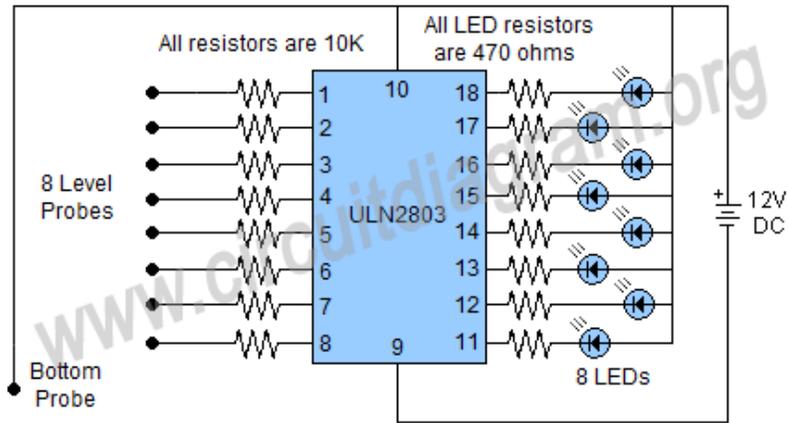


Figure 2.4: ULN2803

2.11.9 Arduino unorv3:



Figure 2.5 Arduino uno rv3

Arduino is an open source PC gear and programming association, undertaking, and customer create that structures and makes single-microcontrollers and microcontroller packs for structure electronic contraptions and gifted things that can perceive and control differs in the physical world. The endeavor's things are coursed as open-source gear and programming, which are avowed under the GNU Lesser General Public License (LGPL) or the GNU General Public License (GPL), permitting the make of Arduino sheets and programming dispersal by anyone. Arduino sheets are open at present fit as a fiddle, or as do-it-with no other person's assistance (DIY) units. Arduino board structures use a mix of chip and controllers. The sheets are outfitted with sets of cutting edge and essential information/yield (I/O) sticks that may be interfaced to various movement sheets (shields) and grouped circuits. Essential cases of such contraptions

proposed for beginner authorities merge fundamental robots, indoor controllers, and progression locators. The name Arduino begins from a bar in Ivrea, Italy, where a dash of the producers of the errand used to meet. The bar was named after Arduinos of Ivrea, who was the margrave of the March of Ivrea and King of Italy from 1002 to 1014.

2.11.10 Hardware

Arduino is open-source hardware. The hardware reference plans are scattered under a Creative Commons Attribution Share-Alike 2.5 grant and are available on the Arduino site. Structure and creation records for a couple of variations of the hardware are also open. The source code for the IDE is released under the GNU General Public License, variation 2. Regardless, an official Bill of Materials of Arduino sheets has never been released by Arduino staff. Regardless of the way that the gear and programming plans are energetically available under copyleft licenses, the creators have requested the name Arduino to be world class to the official thing and not be used for derived works without approval. The official course of action report on use of the Arduino name complements that the endeavor is accessible to joining work by others into the official thing. A couple Arduino-great things financially released have avoided the endeavor name by using distinctive names completing off with -duino. Arduino microcontrollers are pre-redone with a boot loader that improves exchanging of ventures to the on-chip streak memory. The default bootloader of the Arduino UNO is the optiboot bootloader. Sheets are stacked with program code by methods for a consecutive relationship with another PC. Some successive Arduino sheets hold a measurement shifter circuit to change over between RS-232 method of reasoning dimensions and transistor– transistor basis (TTL) level signs. Current Arduino sheets are changed by methods for Universal Serial Bus (USB), realized using USB-to-successive connector chips, for instance, the FTDI FT232. A couple of sheets, for instance, later-show Uno sheets, substitute the FTDI chip with an alternate AVR chip holding USB-to-successive firmware, which is reprogrammable by methods for its very own ICSP header. Distinctive varieties, for instance, the Arduino Mini and the casual Boarduino, use a divisible USB-to-successive connector board or connection, Bluetooth or diverse methodologies, when used with standard microcontroller gadgets as opposed to the Arduino IDE, standard AVR in-structure programming (ISP) composing PC programs is used. Various Arduino-great and Arduino-decided sheets exist. Some are for all intents and purposes proportionate to an Arduino and can

be used proportionally. Many improve the essential Arduino by including yield drivers, every now and again for use in school-level guidance, to unravel making surreys and little robots. Others are electrically indistinguishable yet change the shape factor, sometimes holding likeness with shields, every so often not. A couple of varieties use different processors, of fluctuating closeness.

2.12.1 Software and programming tools

A program for Arduino may be written in any programming tongue with compilers that make twofold machine code for the goal processor. Atmel gives an improvement circumstance to their microcontrollers, AVR Studio and the more forward-thinking Atmel Studio. The Arduino adventure gives the Arduino facilitated headway condition (IDE), which is a cross-arrange application written in the programming tongue Java. It began from the IDE for the lingos Processing and Wiring. It fuses a code administrator with features, for instance, contentreordering, looking for and displacing content, modified indenting, prop organizing, and language structure highlighting, and gives direct a solitary tick instruments to orchestrate and exchange ventures to an Arduino board. It in like manner holds a message locale, a substance console, a toolbar with gets for normal limits and a levels of leadership of action menus. A program made with the IDE for Arduino is known as a sketch. Sketches are gotten a good deal on the improvement PC as substance archives with the record extension. Arduino Software (IDE) pre-1.0 saved depicts with the enlargement. executable cyclic authority program with the GNU toolchain, similarly included with the IDE dissemination. The Arduino IDE uses the program avrdude to change over the executable code into a substance record in hexadecimal encoding that is stacked into the Arduino board by a loader program in the board's firmware. The open-source nature of the Arduino adventure has supported the dispersion of many free programming libraries that diverse planners use to expand their exercises.

2.12.2 Application

- Arduboy, a handheld redirection console reliant on Arduino
- Arduino Motion Control Rig.
- Arduinome, a MIDI controller device that copies the Monome

- ArduinoPhone, a do-it-without anybody's assistance cellphone.
- Ardupilot, drift programming and hardware
- ArduSat, a cubesat subject to Arduino.
- Automatic titration structure reliant on Arduino and stepper motor.
- C-STEM Studio, a phase for hands-on fused learning of figuring, science, advancement, building, and math (C-STEM) with mechanical innovation.
- DC motor control using Arduino and H-Bridge.
- Gameduino, an Arduino shield to make retro 2D PC amusement.

2.12.3 Electronic Oscillator

An electronic oscillator is an electronic circuit that passes on an accidental, restless electronic pennant, routinely a chord wave or a sort ripple .Oscillators convert embolden recent (DC) from a power supply to a alternative current (AC) flag. They are normally used in different electronic gadgets. Essential instances of signs made by oscillators join signs offered by radio and TV transmitters clock flags that supervise PCs and quartz tickers, and the sounds passed on by electronic beepers and PC diversions.

2.12.4 Voltage-controlled oscillator

An oscillator can be organized with the goal that the faltering recur can be difference over some limit by a data voltage or current. These voltage limited oscillators are throughly used in stage shot circles, in which the oscillator's repeat can be dashed to the repeat of another oscillator. These are ubiquitous in current trades' circuits, used in channels, modulators, demodulators, and molding the reason of repeat synthesizer circuits which are used to tune radios and TVs.

2.12.5 Buzzer



Figure 2.6: Buzzer

A toll or beeper is a hailing contraption, all things considered electronic, normally utilized in automobiles, family machines, for example, a microwave, or redirection appears. It most routinely incorporates distinctive switches or sensors related with a control unit that picks whether and which get was pushed or a preset time has snuck past, and by and large illuminates a light on the fitting catch or control load up, and sounds a notice as a dependable or eccentric mumbling or impacting sound. At first this gadget depended upon an electromechanical structure which was vague to an electric ring without the metal gong (which makes the ringing disarray). Ordinarily these units were verified to a divider or housetop and utilized the roof or divider as a sounding board. Another execution with some AC-related contraptions was to finished a circuit to make the AC current into a whine enough uproarious to drive an enhancer and partner this circuit to a feeble 8-ohm speaker. These days, it is dynamically regular to utilize a clay based piezoelectric sounder like a Sonalert which makes a sharp tone. Routinely these were caught to "driver" circuits which changed the pitch of the sound or beat the sound on off.

2.12.6a Electromechanical

Early gadgets depended upon an electromechanical framework hazy to an electric ringer without the metal gong. Additionally, a hand-off might be connected with Interval its own unique inciting current, making the contacts buzz. Reliably these units were verified to a divider or housetop to utilize it as a sounding board. "Ringer" starts from the scratching mayhem that electromechanical tolls made.

2.12.6b Mechanical

A delight ringer is an occurrence of a fundamentally mechanical banner and they require drivers. Particular events of them are doorbells. As regularly as conceivable these units were moored to a

divider or housetop to utilize it as a sounding board. "Flag" begins from the pounding whine that electromechanical tolls made.

2.12.6.c Piezoelectric

A piezoelectric section might be driven by an impacting electronic circuit or other sound pennant source, driven with a piezoelectric sound enhancer. Sounds ordinarily used to exhibit that a catch has been squashed are a tick, a ring or a blast.

2.12.7 Volumes

In 2002, regarding fifty fifth of all CPUs sold on the earth were eight bit microcontrollers and chip. quite two billion eight bit microcontrollers were sold in 1997, and as shown by punctuation, quite four billion 8-bit microcontrollers were sold in 2006. considerably all the additional starting late, punctuation has warranted the MCU advance aroused thirty six.5% in 2010 and twelve-tone system in 2011. a typical target a created nation is maybe planning to have simply four general-point microchips nevertheless 3 dozen microcontrollers. a traditional middle go vehicle has upwards of one thing near to thirty microcontrollers. Absolutely, the 8-bit parcel has inundated the MCU advance 16-bit microcontrollers become the simplest volume MCU portrayal in 2011, beating 8-bit contraptions out of the blue that year, IC Insights trusts the cosmetics of the MCU market can expertise tremendous changes within the going with 5 years with 32-bit gadgets faithfullyobtaining a dynamically noteworthy thought of offers and unit volumes. By 2017, 32-bit MCUs ar required to deal with fifty fifth of microcontroller deals like unit volumes, 32-bit MCUs ar approaching record for thirty eighth of microcontroller shipments in 2017, whereas 16-bit gadgets can address thirty fourth of the combination, and 4-/8-bit structures ar figure to be twenty eighth of units sold that year. The 32-bit MCU elevate is approaching to finish up being quickly a consequence of increasing excitement for unceasingly brought proportions of accuracy up in put in managing frameworks and also the improvement in handiness utilizing the web. In the going with number of years, complicated 32-bit MCUs ar expected to deal with over twenty fifth of the making ready power in vehicles. — IC Insights, MCU Market on Migration Path to 32-bit and ARM-based Devices.



Figure 2.7 PIC 18F8720 microcontroller

2.12.8 Embedded design

A microcontroller is seen as a self-contained system with a processor, memory, and various peripherals and may be used as an embedded structure in larger systems. These days, a wide variety of microcontrollers are being used in different applications, for example, vehicles, telephones, machines, and peripherals for laptop systems. At the present time, some of the most commonly used microcontrollers are those that have a high level of integration, with no external components, and low programming complexity. They are used in a wide range of applications, from simple control systems to complex embedded systems. Some of the most common applications include: temperature control, light-weight estimation, so forth. Inserted frameworks once doubtless haven't any facilities, screen, circles, printers, or distinctive evident I/O contraptions of a laptop, and should need human alliance gadgets of any kind.

2.12.9 Interrupts

Microcontrollers should provide a reliable (self-evident, in any case not by any stretch of the imagination) reaction to occasions within the system they're dominant. Right once bound occasions happen, the microcontroller will halt the processor to suspend fitting the current bearing movement. The microcontroller will then begin an interrupt service routine (ISR, or "Break handler") which is able to play out any transcription expected subject to the wellspring of the interrupt, before returning to the essential heading strategy. Conceivable interrupt sources are a wide variety of subordinate, and typically mix occasions, as an example, the microcontroller inward clock flood, finishing an easy to injury edge

amendment, a method for thinking mensuration amendment on Associate in Nursing info, as an example, from a realize being smashed, and data hopped on a correspondence partner.

2.12.10 Programs

Normally smaller scale controller programs should slot in the accessible on-chip memory, since it's over the highest to equip a framework with captivating, expandable memory. Compilers and building directors square measure used to vary over each unpredictable state and low measuring making ready kind codes into a strained computer code for farthest purpose within the additional diminutive scale controller's memory. The relied on the gadget, the program memory could last, investigated simply memory that has to be revamped at the gathering plant, or it would be field-alterable glint or eradicable read-just memory. completely different forms can be open wherever the ROM is gotten to as a stunning gadget as critical as within memory, regardless these square measure finding the chance to be wonderful due to the despite what you seem like at its accessibility of abandoned microcontroller programming engineers. the employment of field-programmable gadgets on a bit scale controller could allow field stimulate of the computer code or license late taking care of plant updates to things that are massed in any case not nonetheless passed on. Programmable memory in addition diminishes the time interval needed for relationship of one thing else. wherever numberless gadgets square measure needed, utilizing elements adjusted at the time of create is conventionalist. These "shroud changed" elements have the program set down within the comparative course because the premise of the chip, at the relative time

2.13.1 Others microcontroller features

Microcontrollers when in doubt hold from a couple to many general point input/output pins (GPIO). GPIO pins are redoing configurable to either a data or a yield state. Right when GPIO pins are sorted out to an information state, they are routinely used to look at sensors or fascinating signs. Proposed to the yield state, GPIO pins can drive lovely gadgets, for example, LEDs or engines, normally roundaboutly, through enchanting force hardware. Many acquainted frameworks need with analyze sensors that pass on fundamental signs. This is the purpose of the simple to-bleeding edge converter (ADC). Since processors are endeavored to unravel and

process modernized information, for instance 0s, they are not set up to do anything with the clear standards that might be sent to it by a gadget. So the simple to modernized converter is utilized to change over the advancing toward information into a shape that the processor can see. A submitted Pulse Width Modulation (PWM) square makes it attainable for the CPU to control converters, resistive loads, engines, accordingly forward. without utilizing piles of CPU assets in tight clock circles Given on-chip gear additionally routinely joins abilities to converse with different contraptions (chips) in mechanized relationship, for example, Inter-Integrated Circuit (I²C), Serial Peripheral Interface (SPI), Universal Serial Bus (USB), and Ethernet.

2.13.2 Higher Integration

Little scale controllers may not realize a beautiful area or data transport as they fuse RAM and non-capricious memory on the similar chip as the CPU. Using unobtrusive number of pins, the chip can be set in a significantly humbler, more affordable group. Organizing the memory and distinctive peripherals on a single chip and testing them as a unit grows the cost of that chip, yet routinely results in lessened net cost of the embedded structure when all is said in done. Notwithstanding whether the cost of a CPU that has fused peripherals is possibly more than the cost of a CPU and uncommon peripherals, having unobtrusive number of chips commonly allows a humbler and more affordable circuit board, and decreases the work required to gather and test the circuit board, despite having a tendency to lessen the flaw rate for the finished social affair. A little scale controller is a lone facilitated circuit, ordinarily with the going with features:

- central taking care of unit - running from nearly nothing and essential 4-bit processors to complex 32-bit or 64-bit processors
- volatile memory (RAM) for data accumulating
- ROM, EPROM, EEPROM or Flash memory for program and working parameter amassing
- discrete data and yield bits, allowing control or recognizable proof of the basis state of an individual pack stick
- serial input/yield, for instance, consecutive ports (UARTs)
- peripherals, for instance, tickers, event counters, PWM generators, and gatekeeper hound

□□clock generator - consistently an oscillator for a quartz timing valuable stone, resonator or RC circuit

□□in-circuit programming and in-circuit examining support .For example, a general objective processor may require a couple of sign to test a bit in a register and branch if the bit is set, where a little scale controller could have a single direction to give that conventionally required limit.

2.13.3a Programming environment

Microcontrollers were initially modified simply in low estimation problem solving develop, nonetheless fantastic spasmodic state programming dialects, as an example, C, Python and JavaScript, square measure genuinely in like route in like manner use to focus on microcontrollers and displayed structures. These tongues square measure either planned particularly for the craving, or explanations of general target dialects, as an example, the C programming vernacular. Compilers for general would like dialects can as often as conceivable have a few of concealments and ascensions to considerably quicker strengthen the outstanding attributes of microcontrollers. Some microcontrollers have conditions to alter endeavoring to up unequivocal varieties of livelihoods. Microcontroller shippers an interesting piece of the time build gadgets direct hospitable build it less referencing to induce their gear. Distinctive microcontrollers square measure specific to the purpose that they feasibly need their own one among a sort emerge non-standard lingos of C, as an example, SDCC for the 8051, that is foresee victimization customary mechanical social affairs, (for instance, code libraries or static examination instruments) despite.

2.13.3Typesofmicrocontroller

→ Cypress Semiconductor's M8C Core utilized in their Pasco (Programmable System-on-Chip)

→ Freescale Cold fireplace (32-bit) and S08 (8-bit)

→ Freescale 68HC11 (8-bit) et al.supported the Motorola 6800 family

→ Intel 8051, additionally factory-made by NXP Semiconductors, Infineon . of

→ Infineon: 8-bit XC800, 16-bit XE166, 32-bit XMC4000 (ARM primarily based Cortex M4F), 32-bit TRICOR and, 32-bit aurous Tricare Bit microcontrollers

→ Microchip Technology PIC, (8-bit PIC16, PIC18, 16-bit dsPIC33 / PIC24), (32-bit PIC32)
 → NXP Semiconductors LPC1000, LPC2000, LPC3000, LPC4000 (32-bit), LPC900, LPC700
 → Renessa Electronics: RL78 16-bit MCU; RX 32-bit MCU; Superhot ;V850 32-bit MCU; H8; R8C 16-bit MCU .
 → Silicon Laboratories Pipelined 8-bit 8051 Microcontrollers and mixed-signal
 → STMicroelectronics STM8 (8-bit), ST10 (16-bit), STM32 (32-bit), SPC5 ()
 → Texas Instruments TI MSP430 (16-bit), MSP432 (32-bit), C2000 (32-bit)
 Various others exist, a number of that square measure utilized in notably forced extent of employments or square measure a lot of like applications processors than microcontrollers. The microcontroller exhibit is to a rare degree separated, with completely different dealers, advances, and markets. Note that varied traders move or have oversubscribed completely different structures.

2.13.4 Intervallatency

As microcontrollers used in established structures often endeavor to revamp Interval laziness over course turnout. problems mix each alteration the inactivity, and belogically axiomatic(to facilitate inevitable control). exactly once associate degree electronic device causes associate degree Interval, amidst the setting switch the loosely partaking results (registers) should be spared before the factor responsible of managing the Interval will run. they must in like manner be reestablished at the moment Interval handler is finished. On the off probability that thereare a lot of processor chooses, this economical and reestablishing methodtakes beyond regular time, increasing the laziness. numerous elements moving Interval idleness include:

- Cycles expected to complete current mainframe works out. To oblige those prices, microcontrollers can all things thought-about have short pipelines (routinely 3 sign or less), very little structure cushions, and confirmation that dynamically drawn out sign square measure on and on or restart capable. architecture arrange standards guarantee that the majority sign take the equal range of cycles, maintaining a strategic distance from the essential for many such continuation/restart strategy for thinking.

- The length of any elementary section that ought to be Intervalled. space to a elementary section limits synchronous data structure get to. exactly once associate degree data structure should be gotten to by associate degree Interval handler, the fundamental domain ought to sq. that Interval. As requirements be, Interval dormancy is extended by at any rate long that Interval is blocked. exactly once there square measure arduous beguiling confinements on structure lethargy, fabricates dependably anticipate that contraptions ought to gauge Interval latencies and capture that elementary areas cause log jams.
- Interval sinking. Some microcontrollers alter higher would like Intervals to Interval fell would like ones. This engages programming to manage dormancy by giving time-principal Intervals higher would like (and during this manner lower and incessantly evident inaction) than less-fundamental ones.
- Trigger rate. Right once Intervals occur consecutive, microcontrollers could sustain an indispensable partition from an extra setting recuperation/reestablish cycle by a form of tail decision streamlining.

2.13.5 Microcontroller embedded memory technology

Since the ascent of microcontrollers, a decent scope of memory advancements area unit used. All microcontrollers don't have any beneath two differing kinds of memory, a non-unsteady memory for securing code and a read-make memory for transient information.

2.13.6 Data

From the foremost on time microcontrollers to those days, six-transistor SRAM is quite usually used as a result of the read/compose basic cognitive process, with a number of further transistors per bit used at intervals the enlist document. FRAM or MRAM may conceivably succeed it as a result of it's four to multiple times denser which could build it further savvy. nevertheless the SRAM, some microcontrollers additionally have inward EEPROM for information stockpiling; and even ones that don't have any (or insufficient) area unit typically associated with fascinating sequent EEPROM chip, (for example, the elemental Stamp) or vibrant sequent glimmer semiconductor unit. a number of current microcontrollers starting in 2003 have "self-programmable" streak memory.

2.13.7 CODE

The most timely microcontrollers used cowl memory to store code. Later microcontrollers, (for instance, the primary types of the Free scale 68HC11 and early PIC microcontrollers) had computer storage memory, that used a transparent window to allow destruction through ultraviolet|ultraviolet illumination|UV|actinic radiation|actinic ray} lightweight, whereas creation changes had no such window, being OTP .

2.13.8 PIC microcontroller



Figure 2.8: PIC Microcontroller

PIC microcontrollers area unit a gathering of express microcontroller chips sent by chip Technology in Chandler, Arizona. The shortening PIC signifies "periphery interface controller," in spite of the manner that that term is currently and once more used these days. A microcontroller may be a diminished PC projected to supervise the endeavor of embedded systems in automobiles, robots, workplace machines, restorative devices, versatile radios, sweet machines, home devices, and numerous devices. a median microcontroller joins a processor, memory, and peripherals. The PIC microcontrollers provide to authorities and experimenters, particularly within the fields of devices and apply self-governance. Key options be part of wide convenience, insignificant travail, straightforwardness of rethinking with characteristic EEPROM (electrically effaceable programmable read-just memory), Associate in Nursing expansive aggregation of free application notes, openhanded headway gadgets, and an excellent deal of knowledge open on the net. The PIC microcontrollers habitually seem beneath the brandPIC smaller scale. each PIC microcontroller incorporates a tidy sum of registers that in like manner fill in as RAM (subjective access memory). new reason management registers for on-chip gear

resources area unit what is more mapped into the info house. each PIC incorporates a stack that saves some addresses. The stack wasn't programming open on the sooner variations of the PIC.

2.13.9 Trademark debate

In mid 2008, the five individual sponsors of the Arduino adventure made an association, Arduino LLC, to hold the trademarks related with Arduino. The manufacture and closeout of the sheets was to be done by entrancing associations, and Arduino LLC would get a power from them. The setting up standing standards of Arduino LLC demonstrated that all of the five originators trade obligation regarding Arduino brand to the as of late formed association. At the completion of 2008, Gianluca Martino's association, Smart Projects, selected the Arduino trademark in Italy and kept this a riddle from interchange individual sponsors for around two years. This was revealed when the Arduino association endeavored to enroll the trademark in various areas of the world (they at first selected just in the US), and found that it was by then enrolled in Italy. Exchanges with Gianluca and his firm to bring the trademark leveled out of the first Arduino association failed. In 2014, Smart Projects began declining to pay powers. They by then designated another CEO, Federico Musto, who renamed the association Arduino SRL and made the site arduino.org, copying the structures and arrangement of the first arduino.cc. This achieved a break in the Arduino improvement gathering. In January 2015, Arduino LLC reported a case against Arduino SRL

2.13.10 Baseline core devices (12 bit)

This record delineates baselining thoughts and procedure for passing open frameworks. It joins basic accomplishment factors for framework baselining and thresholding to assist survey accomplishment.

2.14.1 Word estimate

All PICs handle (and address) information in 8-bit projections. In any case, the unit of addressability of the code space isn't commonly the comparable as the information space. For instance, PICs in the precedent (PIC12) and mid-run (PIC16) families have program memory

addressable in the relative word measure as the course width, for instance 12 or 14 bits independently. Inquisitively, in the PIC18 strategy, the program memory is tended to in 8-bit grows (bytes), which separate from the heading width of 16 bits.

2.14.2 Summary

The water transport accept most basic employment in the vehicle game plan of many making countries in perspective on their lower cost and higher receptiveness stood out from various decisions, making an unprecedented enthusiasm for transport of items and voyagers. In any case, this strategy for transport has ended up being vulnerable in light of the restriction of advantages, nonappearance of thought, and the nonattendance of development to keep up and screen the channels and the water-based vehicles. The circumstance is for all intents and purposes the tantamount for most of the making countries. In light of the openness of information and basic passage to relevant information, we select Bangladesh as a logical investigation for this examination. To verify the District's water transported sort out, there are severe controls on the general weight and over loads of water vehicles. If your water vehicle outperforms the cutoff focuses because of the bound together burden you're passing on, or the water vehicle's structure, need to apply for an overweight permit before development. been available going before this time, yet the earlier EEPROM was progressively expensive and less solid, trying mass-made microcontrollers. The equivalent year, Atmel introduced the first microcontroller using Flash memory an unprecedented kind of eeprom. Diverse associations quickly adhered to this equivalent example, with both memory types. Cost has dove after some time, with the most affordable 8-bit miniaturized scale controllers being open for under 0.25 USD in sum (thousands) in 2009, and some 32-bit small scale controllers around US\$1 for similar sums. At present smaller scale controllers are unobtrusive and instantly open for masters, with huge online systems around explicit processors.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Introduction

The conveyance system is a basic employment of the water transport for the Bangladesh people and especially in the marine nearable countries what's more, in a couple of districts of the country. The water transport is the fundamental transportation game plan of open transport available. As demonstrated by Bangladesh internal water transport authority (BIWTA) about 7% (around 24,000 km) of the country's periphery is verified by inland conductors. There are directly around eighty Seven million voyagers are paddled with this system consistently. This overweight is the main problem in Bangladesh and another country and that can be to deal with this issue. We got the issue plan by this endeavor.

3.2 Basic Block Diagram:



Figure 3.1 Block Diagram

Shown in Figure 3.1 the Block Diagram of our design in which THE weight provide an input to microcontroller when there is an overweight in water vehicles then microcontroller stopped the starter ,there is also a buzzer as the microcontroller output.

3.3 WEIGHT CELL

Burden Cell and HX711 Weight Sensor Module:

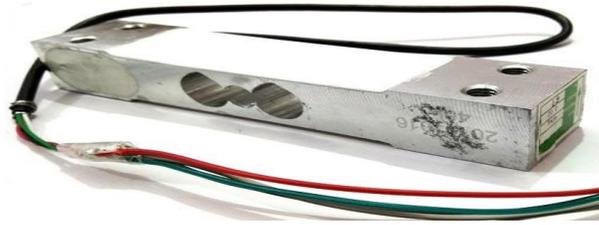


Figure 3.2.: weight cell

Load cell is transducer which convert power or weight into electrical yield. Size of this electrical yield is straightforwardly extent to the power being connected. Load cells have strain measure, which twists when weight connected on it. And afterward strain check method electrical flag on distortion as its viable opponent changes on twisting. A heap cell for the most part comprises of four strain measurement in a Wheatstone connected design. Burden cell comes in different reaches like 5kg, 10kg, 100kg and that is only the tip of the iceberg, here we have utilized weight cell, which can weight upto 50kg. Presently the electrical signs created by Load cell is in couple of millivolts, so they should be next intensify by some enhancer and henceforth HX711 Weighing Sensor comes into picture. HX711 weighting Sensor Module has HX711 chip, which is a 24 high exactness A/D converter (Analog to computerized converter). HX711 has two simple information channels and we can find gain up to 128 by programming theoe channels. So HX711 module intensifies the low electric yield of Load cells and afterward this enhanced and carefully changed over flag is nourished in the Arduino to determine the cell.

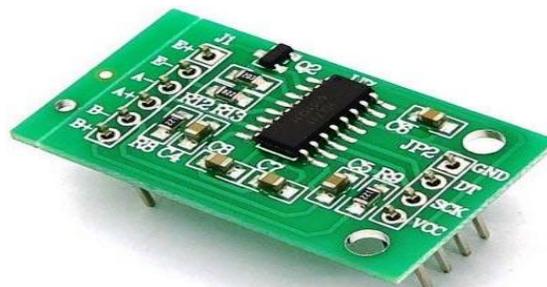


Figure3.3: HX711

weight cell is connected with HX711 Load cell Amplifier using four wires. Four wires are Red, Black, White and Green/Blue. There may be light variation in colours of wires from module to module. Below the connection details and diagram:

E+: RED Wire is connected

E-: BLACK Wire is connected

A-: WHITE Wire is connected

A+: GREEN Wire is connected

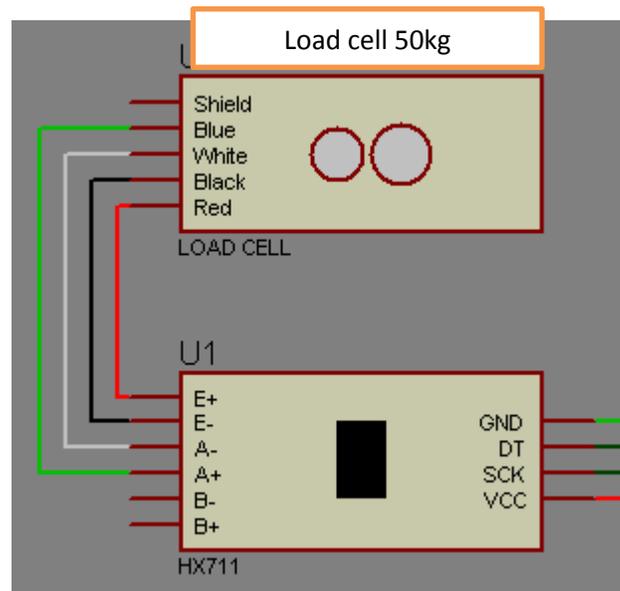


Figure 3.4: Load cell 50kg

3.4 GSM (NE-06)

GSM GPRS modules are one of the normally utilized correspondence modules in implanted frameworks. A GSM GPRS Module is utilized to empower correspondence between a microcontroller (or a microchip) and the GSM/GPRS network. Here, GSM represents Global System for mobile communication and GPRS represents general packet radio service. A GSM GPRS MODEM includes a GSM GPRS Module alongside some different segments as correspondence interface (like Serial Communication RS-232), control issue and a few pointers. With the assistance of this correspondence interface, we can associate the GSM GPRS module on the GSM GPRS MODEM with an outer PC .GSM/GPRS Modules enable microcontrollers to have a remote correspondence with different gadgets and equipment. Such remote network of microcontroller to opens up wide scope of uses like home Automation, Home Security Systems,

Disaster Management, Medical assistance, Vehicle Tracking, E – Commerce and so forth to name a few.

3.5 GPS (SIM800L)

SIM800 is a finished quad-band GSM/GPRS arrangement in a SMT type which can be inserted in the client requirements. SIM800 bolster Quad-band 850/900/1800/1900MHz, it can be transmit Voice, SMS and information data with low power utilization. With small size of 24*24*3 mm, it can be fit into thin and reduced requests of client structure. Highlighting Bluetooth and embedded AT, it permits absolute cost reserve funds and quick time-to-advertise for client requirements.



Figure3.5: GPS (SIM800L)

3.6 Microcontroller chip

The two sensors and the vibration interface would be controlled through microcontroller. One of the greatest microcontroller names in the market is the Arduino family, with more than 20 diverse board models. To meet the plan spec of being lightweight and versatile, the Arduino UNO was picked. This model is little and lightweight, while as yet working at a recurrence of 16 MHz to give opportune input to the client. CMOS batteries of 5v are utilized in the framework; every one of the segments require 5v supply for the working of the framework. They are convenient, light, and more affordable.

3.7 Buzzer

The Piezo ringer generate sound dependent on Inverse of the piezoelectric impact. The age of weight various or strain by the uses of electric potential over a piezoelectric material is the fundamental guideline. These bells can be uses to alarm a client of an occasion comparing to an exchanging activity, counter flag or sensor input. They are additionally utilized in caution circuits. The bell delivers a comparable uproarious sound independent of the voltage various connected to it. It makes out of piezo gems between two conductors. At the point when potential is connected over these precious stones they push on one conductor and draw on the other. This, push and draw activity, results in a sound wave. Most bells deliver sound in the range 2 to 4 kHz.

3.8 Resistor



Figure 3.6 Resistors

By and large, when the connected voltage is found steady, the flow in an immediate flow (DC) electrical circuit is conversely relative to the obstruction. In the event that the opposition is multiplied, the current is sliced down the middle; if the obstruction is divided, the current is multiplied. This standard additionally remains constant for most low-recurrence rotating current (AC) frameworks, for example, family unit utility circuits. In some AC circuits, particularly at high frequencies, the circumstance is progressively unpredictable in light of the fact that a few segments in these frameworks can be stored and discharge vitality, and additionally disseminating or changing over in it.

3.9 16*2 LCD DISPLAY

Fluid Crystal Display (LCD) comprises of pole molded small particles sandwiched between a level bit of glass and an obscure substrate. These pole formed atoms in the middle of the plates adjust into two distinctive physical positions dependent on the electric charge connected to them. At the point when electric charge is connected they adjust to obstruct the light entering through

them, where as when no-charge is connected they become straightforward. Light going through influences the ideal pictures to show up. This is the essential idea driving LCD shows. LCDs are most generally utilized due to their favorable circumstances over other presentation advances. They are meager and level and expend extremely little measure of intensity contrasted with LED showcases and cathode beam tubes (CRTs).

3.10 Software

Arduino UNO is the product that is utilized to build up the source code of the microcontroller. It is picked in light of the fact that it is generally utilized and the dialect is straightforward. It is perfect for different sorts of microchip advancement framework instruments. Arduino Software (IDE) is utilized for interfacing Arduino programming to the framework. Arduino UNO was picked. This model is little and lightweight, while as yet working at a recurrence of 16 MHz to give opportune criticism to the client.

3.12 Summary

Water transport play a important role in the transport system of many developing countries because of their lower cost and higher accessibility compared to other alternatives, creating a good demand for transport of goods and passengers. This mode of transport has become pervious due to the limitation of resources, lack of care, and the absence of technology to maintain and monitor the and the water-based vehicles. Here we solve the problem for over water in water transported, that are very effective for the people.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

The directs are in like way finding the opportunity to be ceased up. Calamities have changed into a run of the mill wonder in this division. Waal appeared in his examination that couple of thousand individuals have met surprising passing or wounds or have been spoken to absent because of difficulties in the conductors in the recent years. His further examination uncovered that the measure of episodes has stretched out on an extremely fundamental dimension reliably, and the most overwhelming purposes for the advancement were voyager over-disturbing and tempests including tornados and impacts. On February 22, 2015, a traveler dispatch was hit by a store vessel amidst the persuading Padma River and the loss of life was more than 70, and few evaporated. A few months back, on August 4, 2014, around 11:00 AM a dispatch sank in uneven waters and solid breezes in the comparative channel, yet at a substitute zone, and more than 100 voyagers lost their lives, and 87 individuals evaporated. The dispatch was additionally lost as the rescuers were not skilled discover it in the huge water.

4.2 Microcontroller

Microcontroller has 28 stick ,the amount of 1 stick is reset stick ,2,3,4,5,6 stick is propelled stick ,no. 7 stick is control stick, no.8 stick is ground stick, the no. of 11 stick use as a yield stick which related with the ringer again 12,13,14,15,16,17,18,19 number stick use as a sensor stick ,that can be checked the situation of water level.

4.4 Result

The conductors acknowledge an imperative action in the vehicle strategy of many making nations in light of their lower cost and higher openness veered from different choices, making an amazing eagerness for transport of things and voyagers. The nonattendance of advancement to keep up and screen the courses and the water-based vehicles. Over weight issue for water vehicles is the enormous issue , in this issue different individuals jump on the water , Every single past issue we're endeavoring to unveil them To confirm the over wight issue for water vehicles. Our sharp undertaking will serve the purpose of the overweight attestation for water

vehicles– The essential purpose of combination of this examination is to be able to recognize any crisis circumstance of vehicles in courses and send crisis alerts to the watching specialist for starting an activity to stop any events in conductors. This undertaking has two water level pointer like upper and lower level, the lower level exhibit the past time of overweight for water vehicles, when the water contact the lower level by then LED's on and the water contact the upper estimation then it demonstrate that the vehicles get over weighted and The hand-off butcher and the LED which related with the microcontroller (2 number stick) additionally execute what's more the starter murder for overweight, on the off chance that the upper estimation remaining on the water, the vehicles will begin.

Here the table of the heap measure and over weight :-

Table: 4.1 Over weight measurement and protection

Applicable weight	If over weight	result	comment
50kg	Load>50kg	Buzzer on ,LED on, Send message, ring buzzer	If over load at the starting time we take to decrease the load
50kg	Load<50kg	Engine on	

4.5 Summary

Water transport structure is a fundamental technique for transport for the all-inclusive community of Bangladesh, especially in the southern bit of the nation. Mishaps have transformed into a standard miracle in this division. Atwal showed up in his examination that couple of thousand people have met unexpected passing or wounds or have been represented missing in view of accidents in the conductors in the past couple of years. In this errand we endeavor to deal with this issue and we got much accomplishment, by some hindrance we can't cultivated progressively about this endeavor.

CHAPTER 5

CONCLUSION

5.1 Conclusion

This endeavor we have endeavored has helped us gain a predominant perspective on various edges related to our course of concentrate and rational data of electrical and electronic equipment and correspondence. We got settled with programming examination, arranging, execution testing and bolster stressed over our undertaking. These expansive capacities of this structure are what make it so interesting. The standard point of this assignment is to convey a model that can recognize over burden for water vehicles. At whatever point created with at most exactness, the water vehicles are not dive into the water for overweight objectives. The made model gives extraordinary results in recognizing over .

5.4 Future Scope

In future this structure can be improved with overweight estimation that makes the endeavor all the all the more astounding. This makes the system further progressively diminished. In future it will be use as a propelled sailor if anybody can change this.

5.5 Limitation

- The structure made here is a moderate spending plan navigational guide for apparently debilitated people.

- Minimization in cost prompts pay in execution.
- Cannot secure ordinary appalling issue.

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APPENDIX

WEIGHT.INFO

```
#include <TinyGPS++.h>
```

```
#include <SoftwareSerial.h>
```

```
#include <Wire.h>
```

```
#include <LiquidCrystal_I2C.h>
```

```
#include "HX711.h"
```

```
#define calibration_factor -7050.0 //This value is obtained using the SparkFun_HX711_Calibration  
sketch
```

```
#define DOUT 3
```

```
#define CLK 2
```

```
double bb,bbb;
```

```
HX711 scale(DOUT, CLK);
```

```
double aa;
```

```
LiquidCrystal_I2C lcd(0x27, 16, 2);
```

```
static const int RXPin = 11, TXPin = 10;
```

```
static const uint32_t GPSBaud = 9600;
```

```

// The TinyGPS++ object

TinyGPSPlus gps;

// The serial connection to the GPS device

SoftwareSerial ss(RXPin, TXPin);

void setup() {

  Serial.begin(9600);

  lcd.init();           // initialize the lcd

  lcd.backlight();

  lcd.setCursor(0, 0);

  lcd.print("welcome to ");

  pinMode(8, OUTPUT);

  pinMode(9, OUTPUT);

  pinMode(12, OUTPUT);

  Serial.println("HX711 scale demo");

  scale.set_scale(calibration_factor); //This value is obtained by using the SparkFun_HX711_Calibration
  sketch

  scale.tare(); //Assuming there is no weight on the scale at start up, reset the scale to 0

  Serial.println("Readings:");

  lcd.clear();

```

```
}  
  
void loop() {  
  
    Serial.print("Reading: ");  
  
    double a = (scale.get_units()); //scale.get_units() returns a float  
  
    if (a > 0)  
    {  
        aa = a;  
  
    }  
  
    else  
    {  
        aa = a * (-1);  
  
    }  
  
  
    lcd.setCursor(0, 0);  
  
    lcd.println(aa);  
  

```

```

if (aa > 50)
{
    Serial.println("OVER WEIGHT");

    digitalWrite(8, 0);

    digitalWrite(12, 1);

    lcd.setCursor(0, 1);

    lcd.println("overloaded");

    Serial.println("here");

    Serial.println("sms");

    sms();
}

else {

    digitalWrite(8, 1);

    digitalWrite(12, 0);

    lcd.setCursor(0, 1);

    lcd.println("      ");

}

}

SMS.INFO

void sms()

{

String number="8801726062598";

```

```
String p="OVER LOADED and YOUR LOCATION IS
https://www.google.com/maps/dir///@23.7499836,90.3769781,15z ";

Serial.println("AT+CMGF=1"); //Sets the GSM Module in Text Mode

delay(1000);

//Serial.println ("Set SMS Number");

Serial.println("AT+CMGS=\"\" + number + "\"\r"); //Mobile phone number to send message

delay(1000);

String SMS =p;

Serial.println(SMS);

delay(100);

Serial.println((char)26);// ASCII code of CTRL+Z

delay(1000);

Serial.println("sms send");

}
```

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