

Taking exercise as a ritual in contemporary sense and boating as another activity which is ritualistic for any kind of open water body, I plan to combine both to make a floating form that practically is like cycling on water.

Kere and Ritual:

Cyclo and buoys as the floatable form

Ursula Uday

On 4th and 5th April '16, experts of various departments relating to issues on water and its crisis in Bangalore (particularly pertaining to the vicinity of Yelahanka) came in and shared their knowledge on Keres (lakes) around Yelahanka. (further data documentation is verified with what the experts said)

6th April '16

We visited Allalasaandra Lake. Data acquired after listening to Mr Jagdish of Citizen Association:

Allalasaandra Lake

* Mr. Jagdish part of Citizen Group^{Association} (working for development of lake) spoke to us ...

- Earlier, Bangalore had more than 500 lakes
- Now, 100 lakes (almost)
- Expert say 83 lakes

→ Kere Happe ?

- Association activities:
 - Shramadan - second Saturday every month (clean up the place)
- Stakeholders:
 - Water Board, BBMP, urban development dept., RMZ, horticulture dept., Lokmatha (Anti-corruption Association)
- 2 yrs back (2014) water quality was very bad (cannot be used)
- Now, 70-80% sewage water stopped (entry in lakes) water can be used for agriculture.

→ Solution to Bangalore Crisis: Rejuvenate the lakes

- Lake festival - one day programme (once a year) multiple activities:
 - Cultural activities, experts on water management
 - Stalls on different dept - terrace gardens, folk side - cultural activities

→ 30,000 - 40,000 people participate.
on 6th June, Environment Day.

• Rainy season -

Lake gets completely filled.
celebration for water availability.

- Initiation (time) of agriculture by
villagers (from Yelahanka town & Allalaha
sandra village - slums, backward class)

• plant paddy, guava fruits.

• Strom water entry points?

• Ganga pooja - old water refreshed
by rainwater.

• Earlier, used for drinking, cattle,
agriculture.

villagers conduct pooja, putting copper in
water. (belief)

- Solution: Bring in people to engage
with activities in lake premises to
pressure authorities for helping in
cleaning and maintaining the lake.

• Solution: BBMP, horticulture dept. -
(ideas) bring in trees.

↓
citizen association → ecosystem improve
plans: mango, etc for birds.

- Housing societies sold the land for lake property to the government. Private properties sold corners of their land.
- Purvankara, Aprajith... housing societies (illegal waste disposal in lakes)... citizen association suspects.
- searching for the culprits who dump ^{untreated} waste in the lake (difficult ~~to~~ to find)
- Belief: copper cleanses (sediments settle at the bottom of the lake) - forming silt in summer - can be used for agriculture / manure purposes.
 - Rainy season - fresh water in before no sewage water input.
 - Islands, ^{silt islands} were made 5 years before. government help - Subramaniam Commissioner.
 - Citizen association requested for aerators (20-30ft ~~high~~ high fountains) for dissolved oxygen - not affecting birds
 - plans for boating → may affect birds type of aeration not for entire day for protecting and preserving birds.

→ immediate plan - to stop sewage input in lake

- every 15 days-month: once input of enzymes in lake to reduce smell.

→ Citizen association concerns -

- financial help from BBMP
- Looking for companies to adopt/ownership of lake.

→ villagers religious rituals -

cook food and offer the water body to praise the rain deity during rainy season.

(no evidence found that the ritual is practiced but during New year festival of south Indian communities, people celebrate - eg Ugadi at Yelahanka lake ~~to praise the deity~~ as the harvesting season (day 1) becomes new year)

• Ugadi - Telugu speaking community's New Year.

• treated waste (sewage) fill up the lake (History and Science of Bangalore lakes)

Pictures of the lake:



Sewage inlet-



Silted Islands-



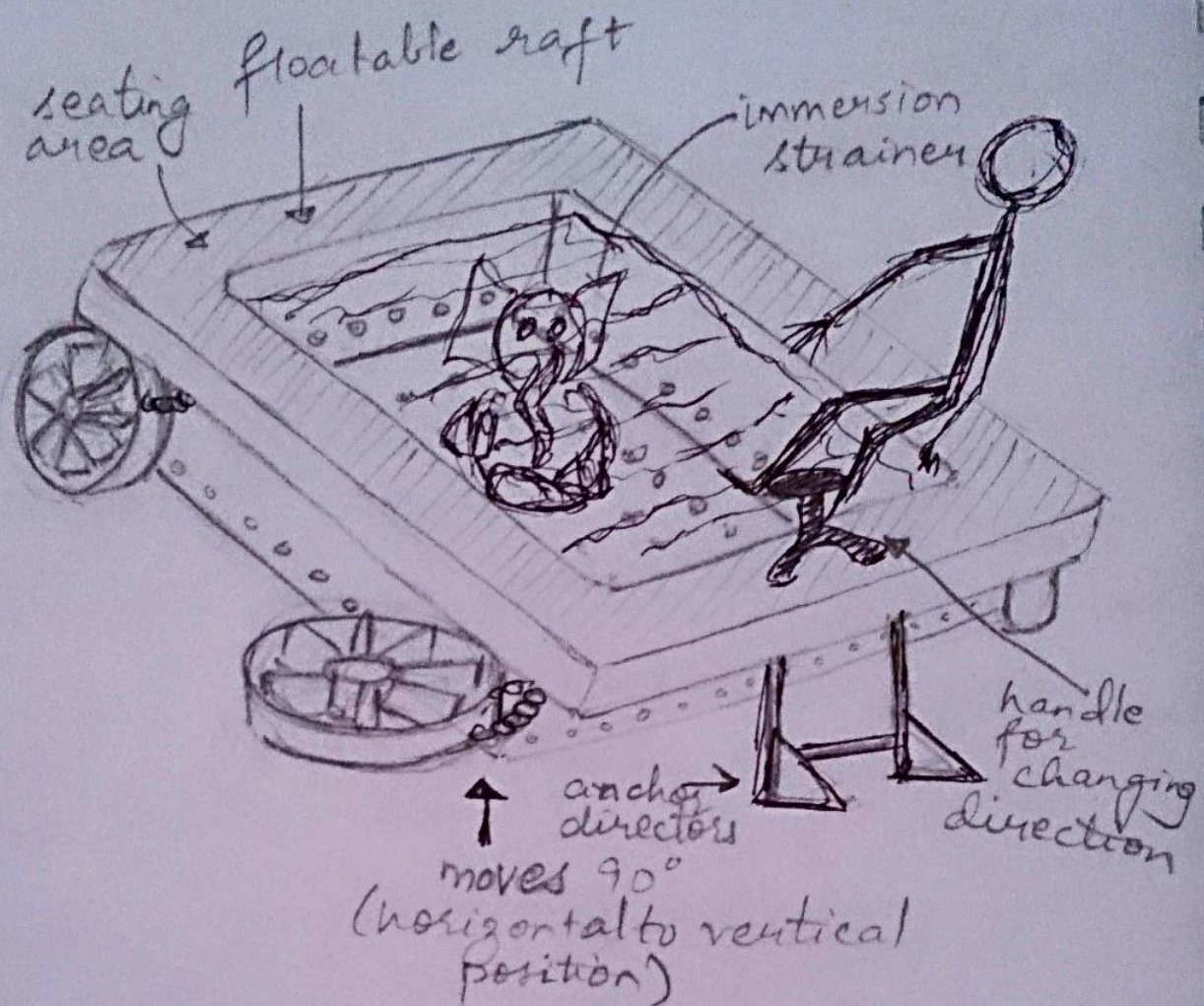
Barrier bund made to separate untreated sewage inlet from the lake-



Other side of the barrier (gutters)-



Idea 1:



Ritual: immersion of Ganesha Idols.

This immersion raft is used to dissolve the idol - first in the strainer which is then ^(solution) mixed with the lake water. As the idol will be completely dissolved and the parts that don't dissolve can be separated. This reduces pollution and debris in water bodies. The idol can be made of earthly elements like clay and be coated with enzymes that help to remove foul smell as told by the experts.

The raft will have motorboat function. The spinning wheels of the raft can be turn 90° on its axis (giving it a horizontal/vertical position) for better movement of the raft. The wheels will help in deviation purpose of the lake. About 3 people can travel on the raft. There will be anchors shaped like bait fins of a fish to change the direction of the raft (using the handle).

Review & criticism of the idea:

Usually in Bangalore, small ganapati idols were immersed in house tabs which itself takes one week to dissolve. The solution is thrown over the ground (not reused). Large ganapati idols are immersed in large water bodies. The idols have a coat of paint which aren't good for the ecosystem of the water body if mixed in water. The immersion tank isn't large enough to immerse a large ganapati idol. The idol being large in size would take lot of time to dissolve. The usage of the immersion raft hasn't ~~being~~ been thought through across the timeline of dissolving the immersed idol. The enzymes are ~~timely~~ added to the lake within every month, and not put once a year.

RMZ corp. incorporated exercise equipment in the park beside the lake:

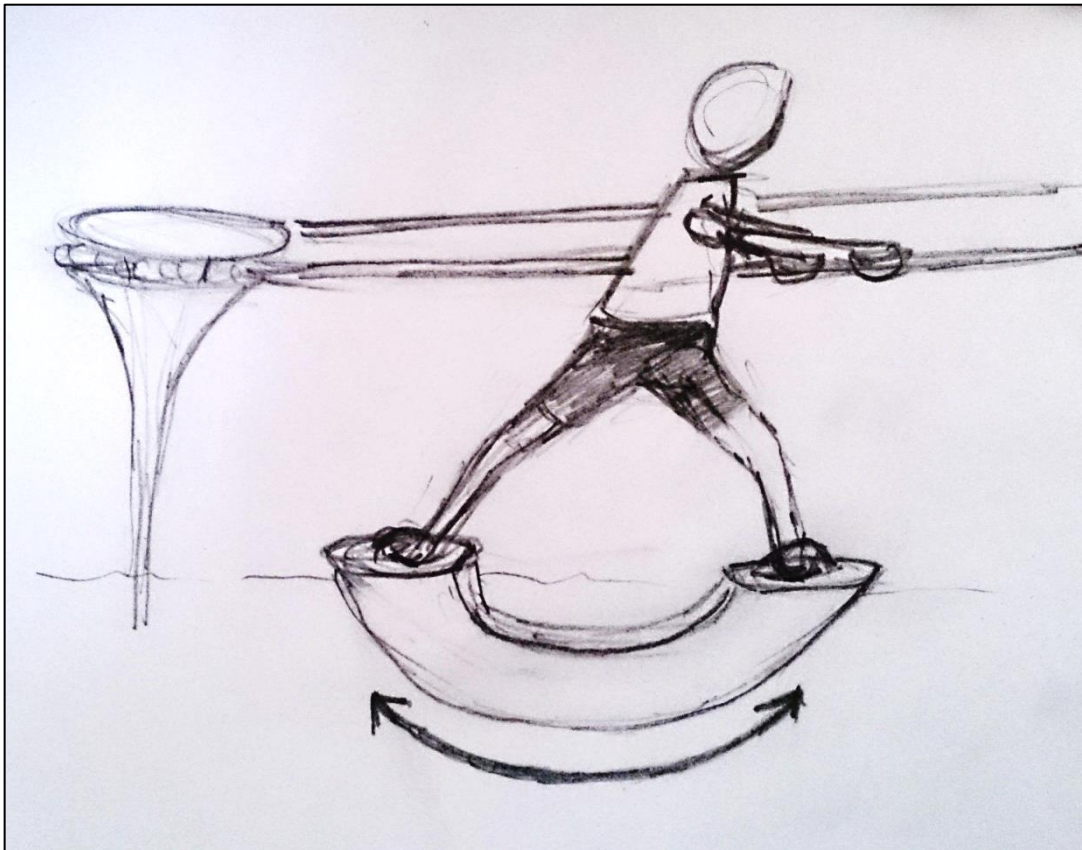


Cycling equipment and equipment for strengthening abdominal muscles and lower limbs:



P.S: there were more equipment but I am concentrating on these three

Idea 2:



The concept was to bring in to and fro motion of the given above exercise equipment on water and perhaps aerating the water body. The individual is guided along the path as he pulls himself towards or away from the bank of the lake using the help of a rope which is supposed to be fixed by a pole in the water body.

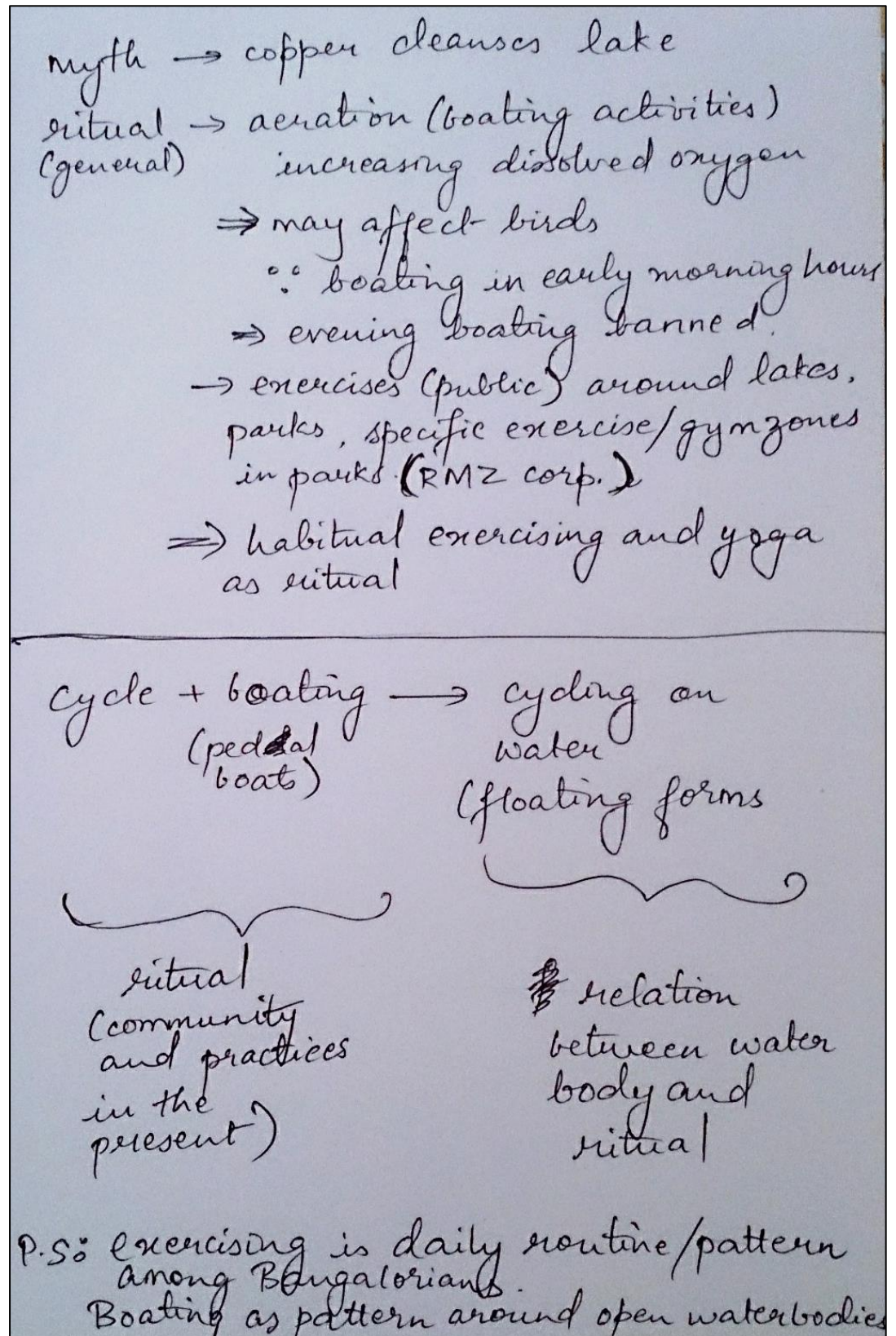
Critique: the whole set is unstable. There's a high risk of the individual to fall into water as one tries to balance oneself. The pole should have a sturdy base which depends on the depth of water and the depth varies seasonally. The ritualistic practice is not conceptually strong for this idea (collaboration/interaction of ritual and water body cannot be seen properly here).

11th April'16

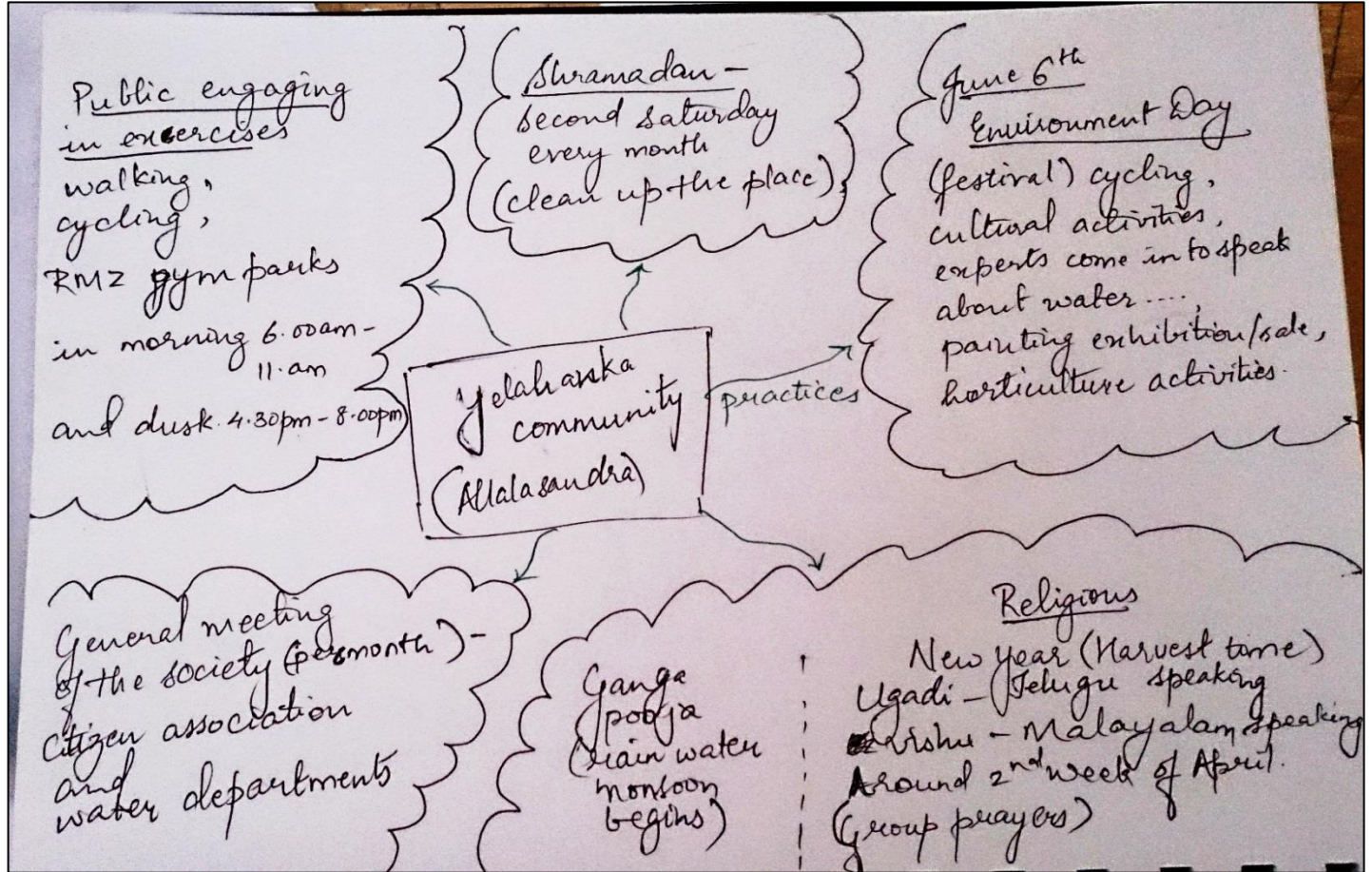
Final Idea

Introduction: Experts say that the amount of DO (dissolved oxygen) and pathogen level in water determine its quality. The Bangalore Keres' are filled up with the input of treated sewage water throughout the year along with rainwater during the monsoons. Disposing off untreated sewage is illegal and another concern which is dealt at a slow pace but there are consequent measures taken by citizens and necessary departments. The Allalassandra villagers believed that copper cleansed the lake as it would settle the sediments/particulates floating in water on to the lake bed; and after the lake dried, the rich silt would be used for manure and other agricultural purposes. As time developed in Bangalore, people became aware of developing a healthy body. Now if one would venture out early morning (6.30am-9.00am) or dusk hours (4.30pm-7.00pm), one would surely notice Bangalore citizens practicing various exercises. Around the parks in the Allalassandra lake, walking and cycling is seen as daily routine. RMZ corp. has also incorporated gym equipment in the park which has proved to be helpful as many engage with it through an unbiased perspective of any age or gender.

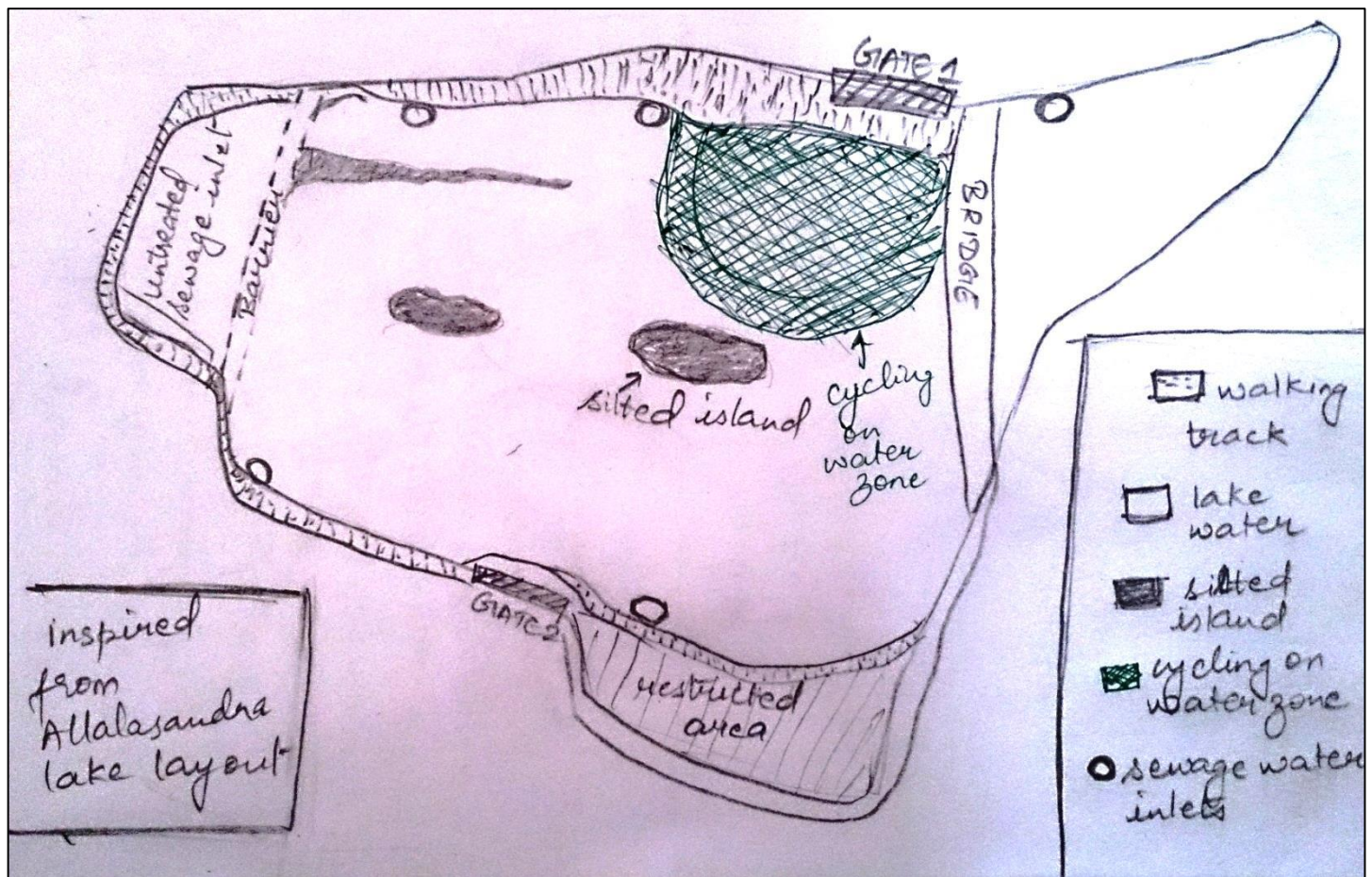
The Citizen Association which is currently responsible of the respective lake has requested for fountain aerators and also hopes for involving boating activities in future. Aeration helps in increasing the DO levels. Thus, taking exercise (particularly the stationary cycling equipment in the park gym) as a ritual in contemporary sense and boating as another activity which is ritualistic for any kind of open water body (for its aeration purpose), I plan to combine both to make a floating form that practically is like cycling on water. When the idea becomes a success, the interaction between here and people increases; thus sufficing hopes of Citizen Association to subtly implicate pressure on government for taking necessary actions on the lake.



Mind Map-



Thematic Map of Allalassandra lake-



The floating object is named as 'Cyclow'. When asked of what I was currently working on, I would brief the entire project as 'cycle on water'; people would hear it as 'cyclone water'. So I decided to come up with a name that sounds like cyclone but will also make a person stop and think about the word. **CYLO-cycle; ON-o; W-water.**

Concept note- 'CYCLOW'

Overview:

Citizens of Bangalore engage in exercising activities to the extent that it becomes a daily ritual which is observed before and after office hours. Naturally, walking tracks and parks around lakes and gardens would never be vacant. For a fact, Allalassandra Citizen Association celebrate festivals where activities like Cycling, painting exercises for kids, stalls for exhibition and sale of artworks, workshops on water management with experts and many more activities are conducted yearly (6th June- Environment day). The Citizen Association which is currently responsible of the respective lake has requested for fountain aerators and also hopes for involving boating activities in future for aeration of lakes. Aeration helps in increasing the DO levels. Thus, taking exercise as a ritual in contemporary sense and boating as another activity which is ritualistic for any kind of open water body, I plan to combine both to make a floating form that practically is like cycling on water. Conceptually, *Cyclow* is a combination of cycling gym equipment and pedalling boats.

Context and Functioning:

Cyclow will function with the mechanism of cycle gears and propellers of the boat will form the cycle wheels. The direction of the path of Cyclow can also be controlled with the help of Tiller and Rudder which forms the steering handle to the cycle. Cyclow basically functions when one pedals and puts the Pedalling gear into motion thus also turning the Propeller gears which makes the form to move forward.

As per the given task of floating forms, the set also includes buoys which constrict the area of using Cyclow. This measure is taken to respect and not disturb the ecosystem of entire lake. Since Cyclow also forms another method of boating, it will help in aerating the lake water thus increasing the DO levels at a considerate level. Also, the timings for using Cyclow are constrained to morning hours to not affect the bird population around the lake. The individuals using Cyclow should preferably be adults depending on their health and doctor's instructions (as it will be more tiring than cycling).

Objective:

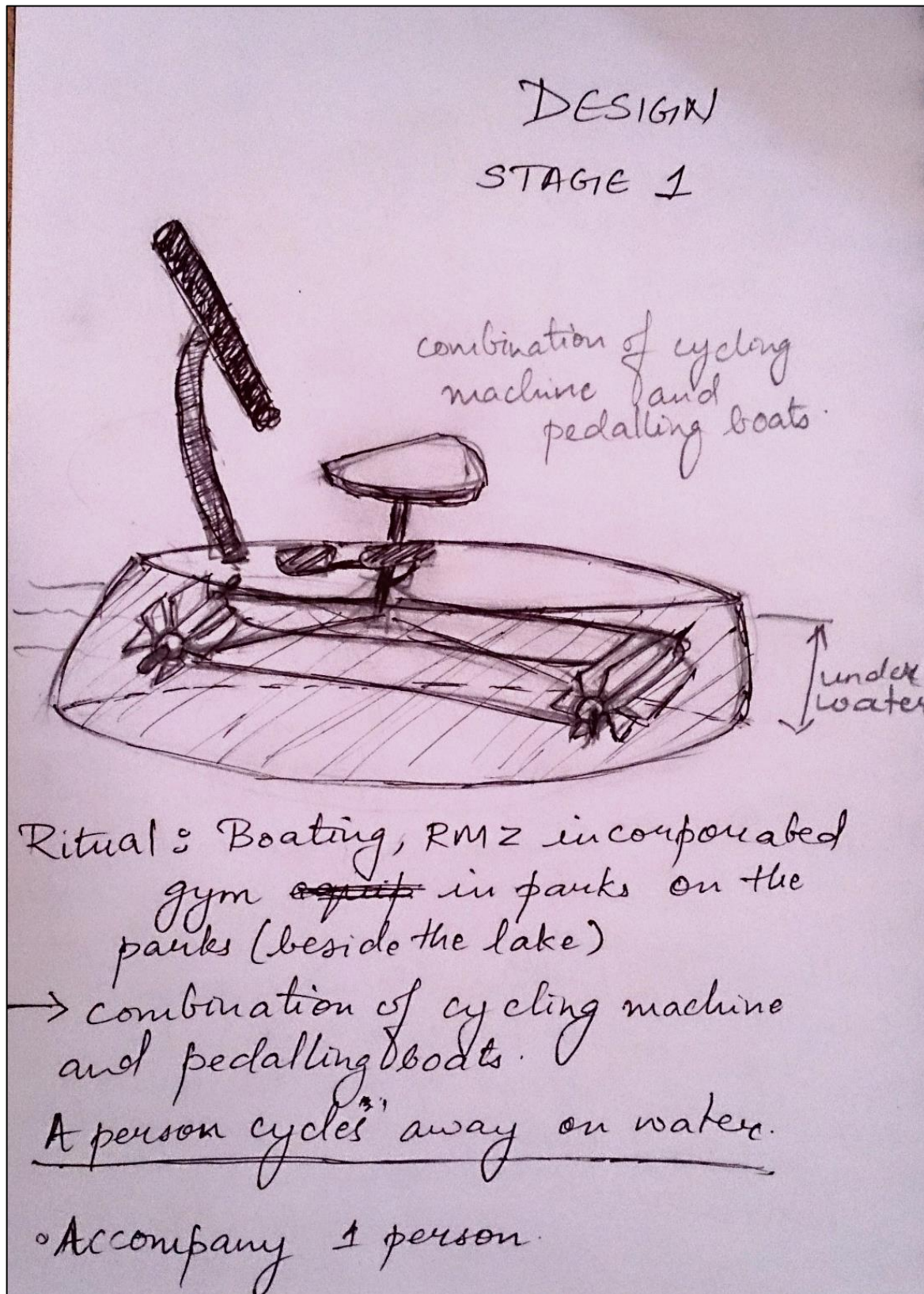
Cyclow has to be used individually thus giving individual freedom of movement in the given space as well as the notion of cycling on water (which will basically be like individual gyming on water). RMZ corp. can help with building of Cyclow equipment as they have incorporated exercising equipment in parks thus bringing an innovative line in their business. When the idea becomes a success, the interaction between kere and people increases; thus sufficing hopes of Citizen Association to subtly implicate pressure on government for taking necessary actions on the lake or intrigue private owners and pursue them on owning the lake for necessary care of the lake area. Individually, one riding Cyclow will receive benefits of the daily exercise; as well as help in improving the health of the lake by physically aerating the water with help of Cyclow.

Suggestions:

If wanted, the base of Cyclow can be coated with copper as it supports the myth of cleansing the lake. Batteries can be attached to Cyclow to store the converted kinetic energy from mechanical energy when one cycles and thus can be used later for street lights in the park around the lake.

Documentation of the floating forms involves two sections:

- I. Floating forms (miniature version of Cyclow which doesn't have the pedalling gears working and buoys)
- II. Mechanism of Cyclow



Reflection: I was finding it challenging to figure out the making of cycle chains. A classmate suggested of using mechanism of train wheels. Later I realised the technicalities of the train wheel mechanism is more tricky and will need lot of trials to get the desired output. Depending on time limit that we have I decided to make a simpler version of cycle chain.

Reference:

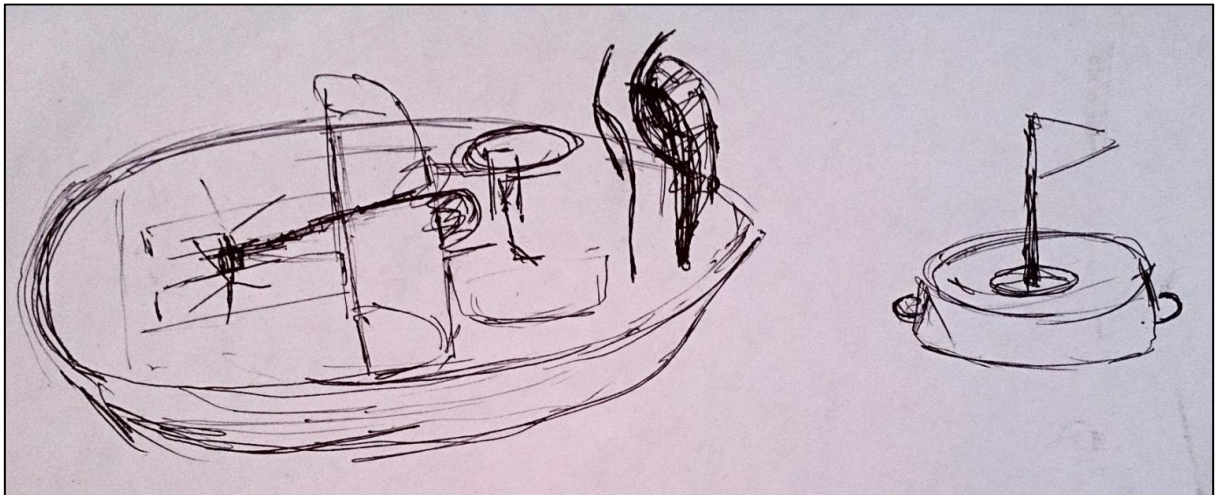
<https://www.youtube.com/watch?v=4HZW35VWiiQ&nohtml5=False&spfreload=10>(How to make

a Rubber Band Powered Boat | Toy boat); <https://www.youtube.com/watch?v=14lEKxTcIso> (How to make Paddle Boats); https://www.youtube.com/watch?v=h8j5-dC6_x8&nohtml5=False (Bike Chains - How it's Made); <https://www.youtube.com/watch?v=rWchudX-Tqs&nohtml5=False> (How To Replace A Bicycle Chain); <https://www.youtube.com/watch?v=zKQyRftAlvE> (How to make wood gears super simple!); <https://www.youtube.com/watch?v=Yb55d1-78Jo> (Walschaerts Valve Gear for Lego Steam Locomotive).

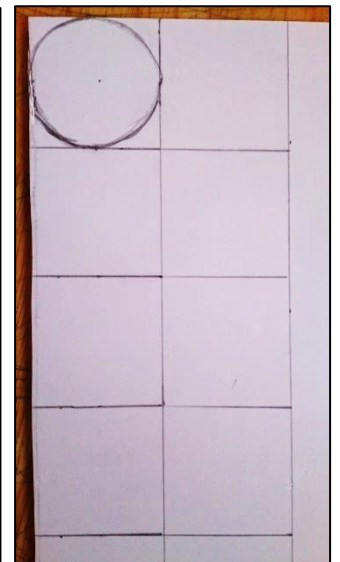
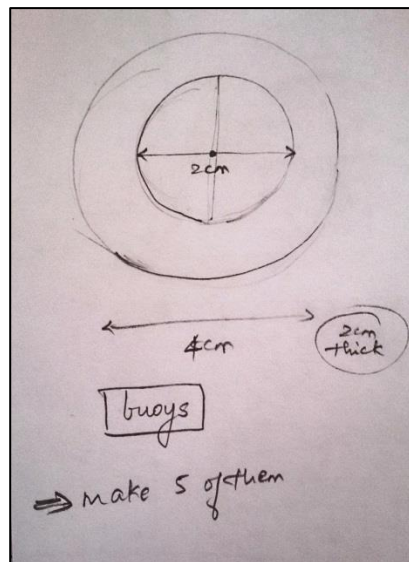
12th April '16

I. Making of floating forms: Final Design stage

Rough sketch of Cyclo and buoys-



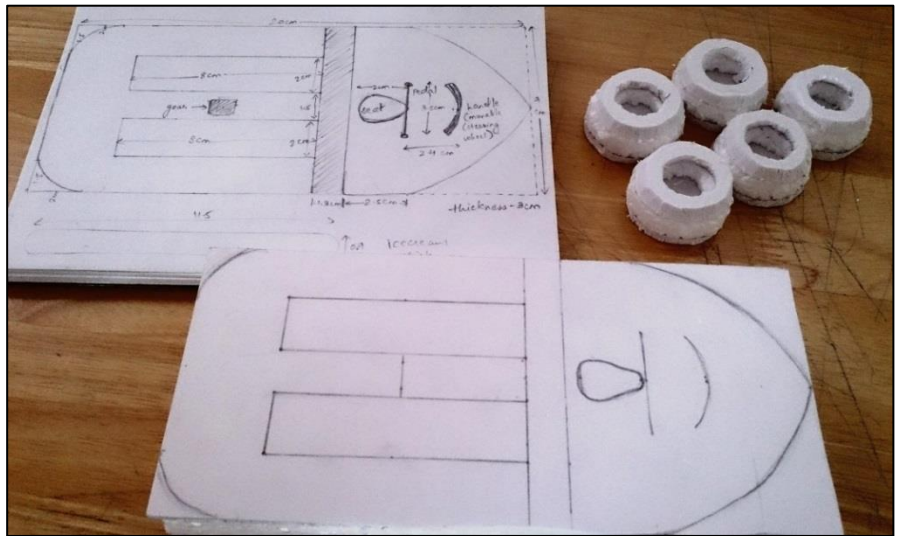
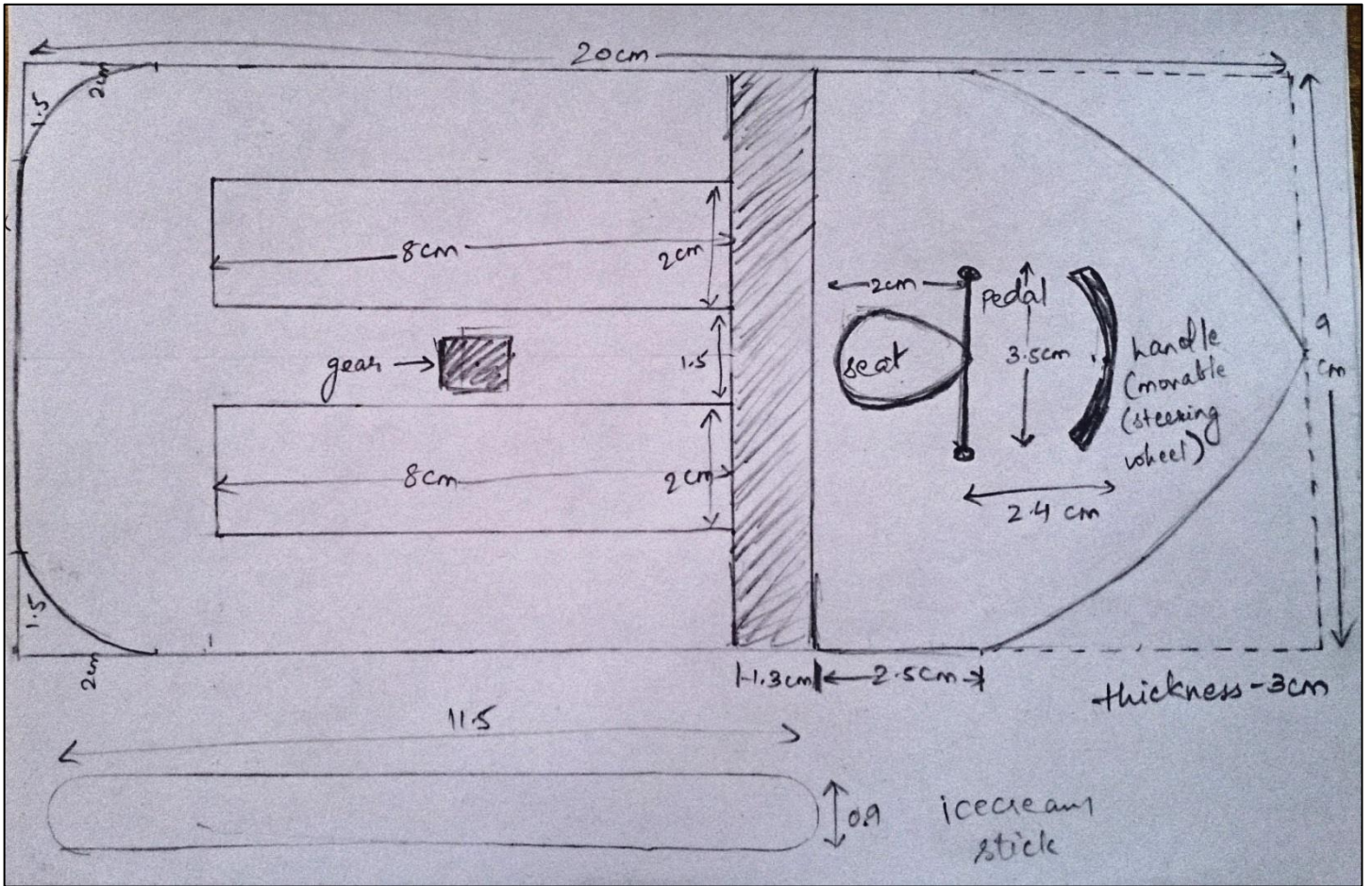
Making of Buoy-



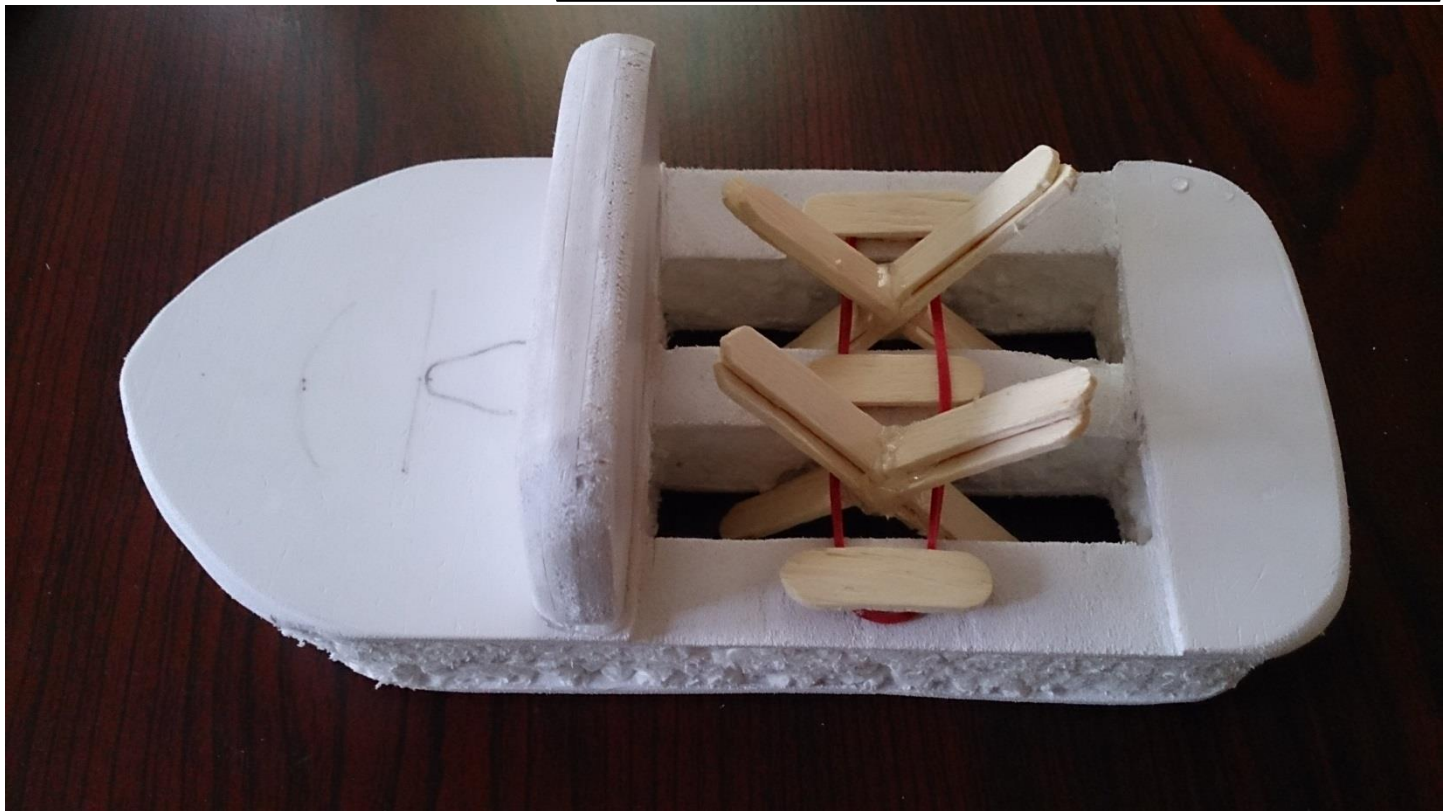
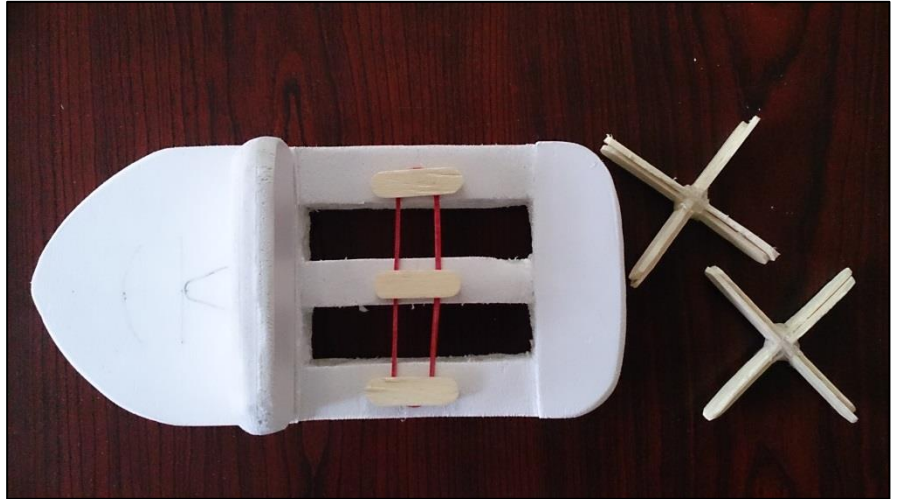
Template-



Making of Cyclow-



Making of propellers-

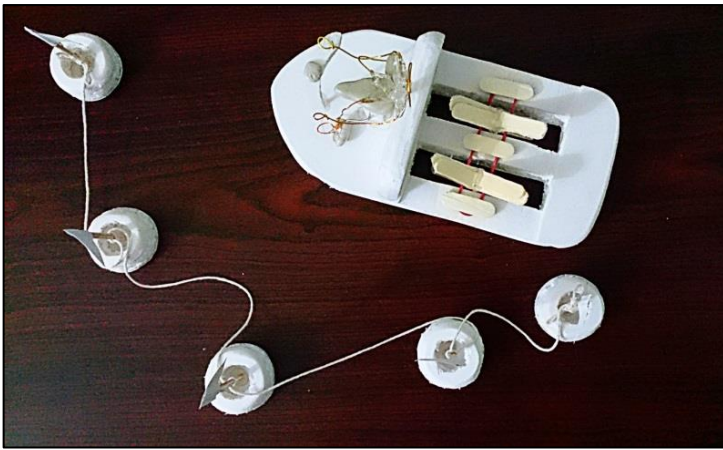




Prototype of a man-



Complete set of the floating forms-

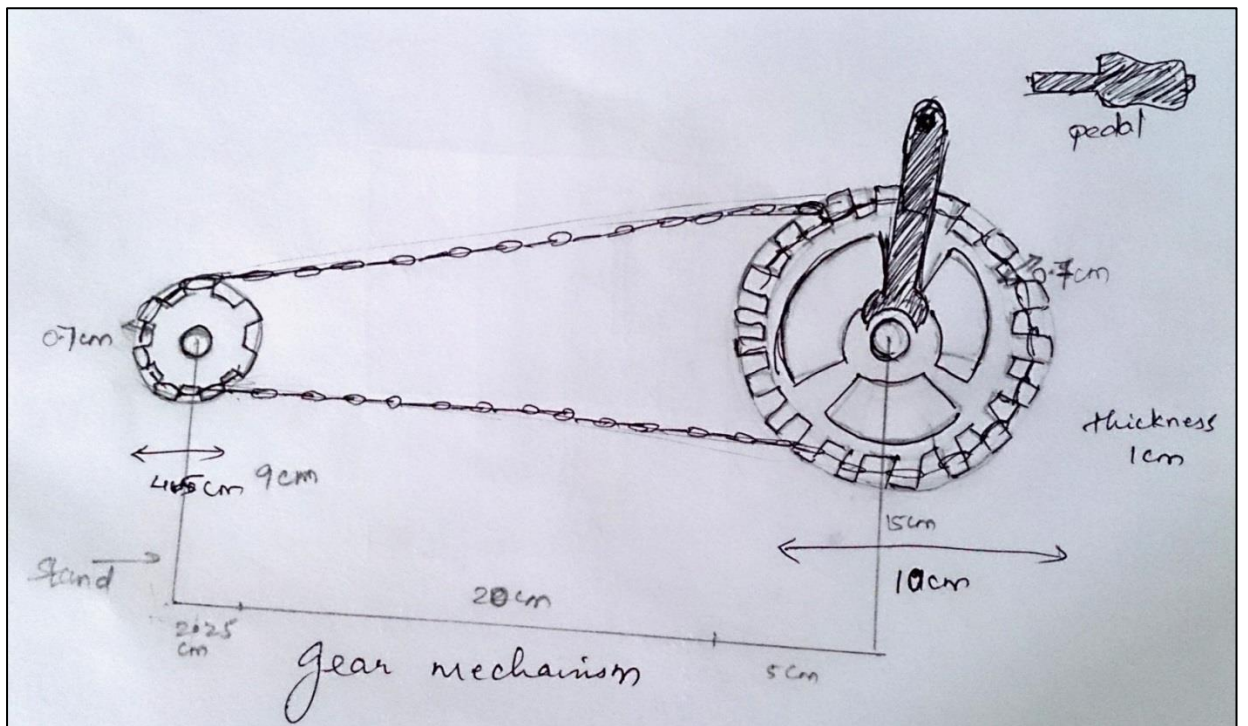
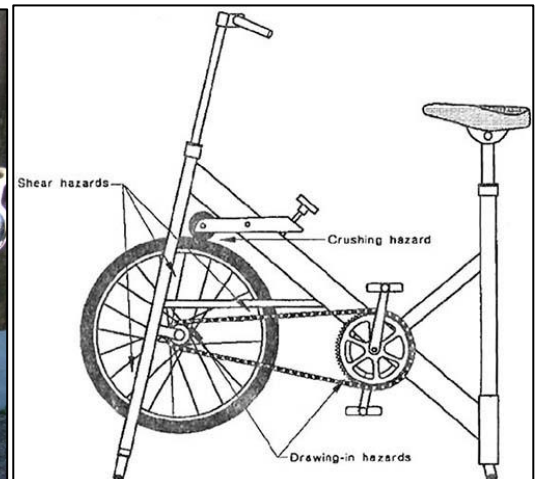


II. Making of the mechanism- Final design stage

13th April '16

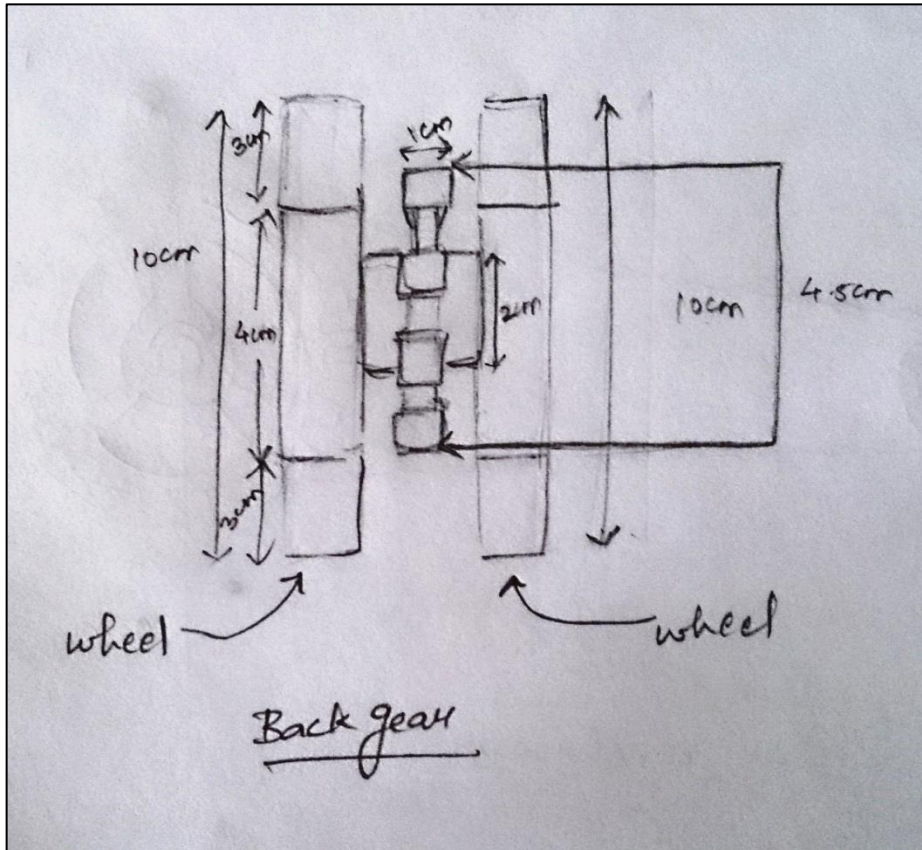
Making of gears-

Design reference for cycle chain mechanism-

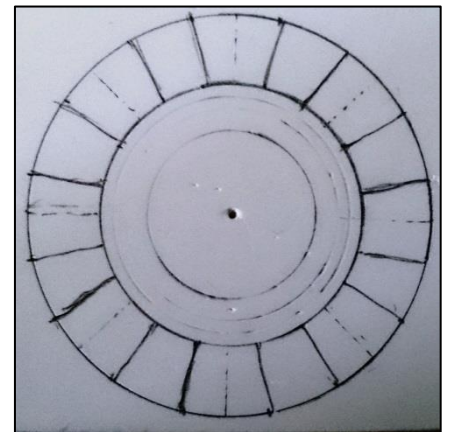


Side view-

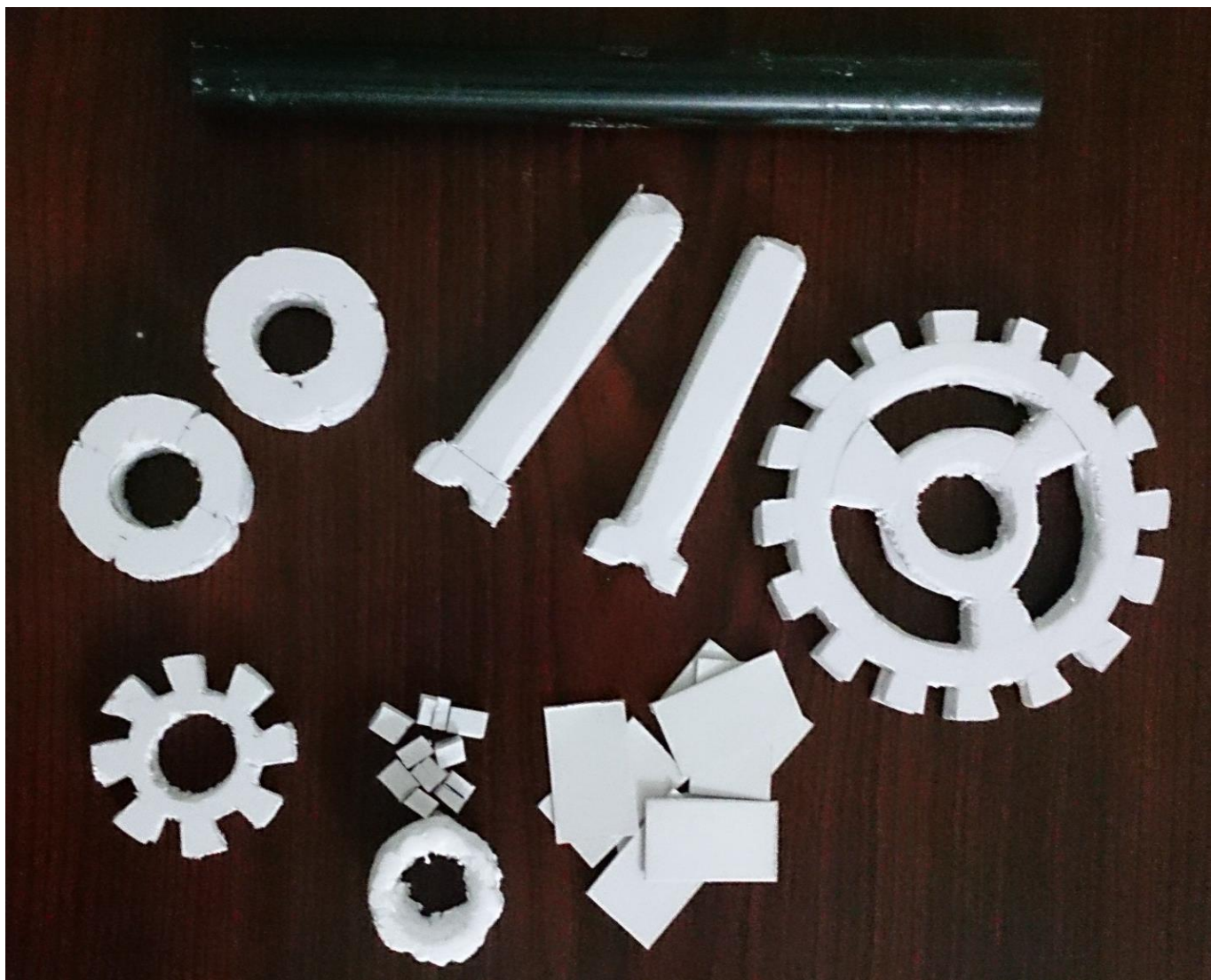
Top view of back gear



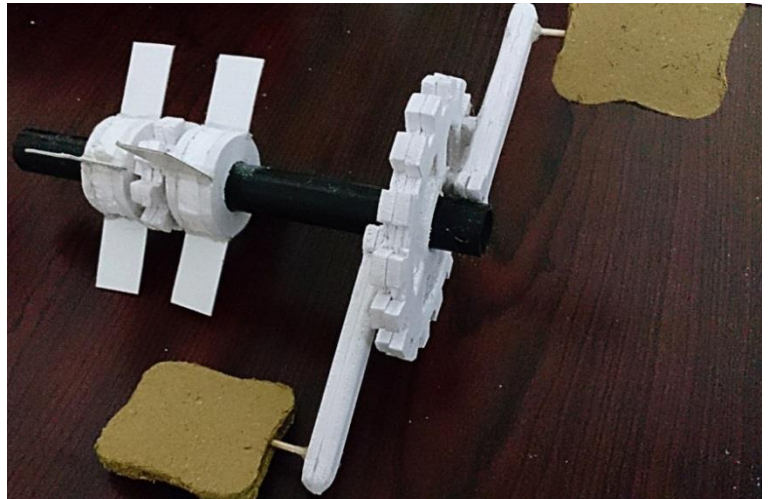
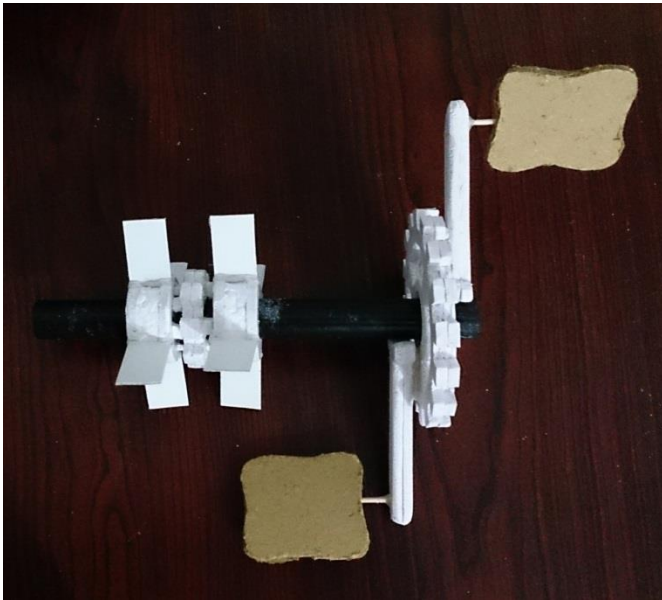
Gear template



Parts of gear-

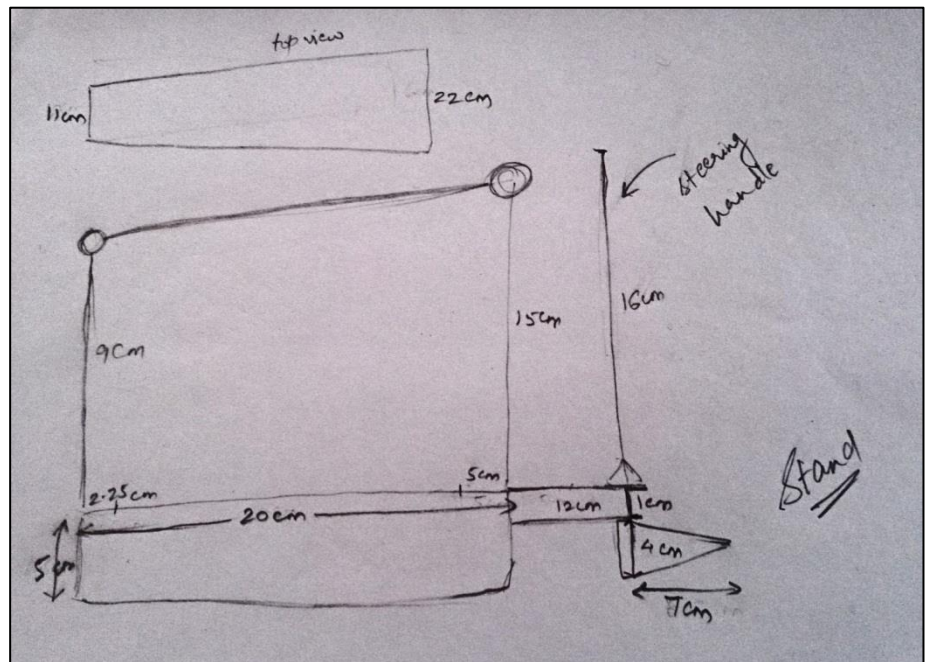


Complete set of gears and propellers-

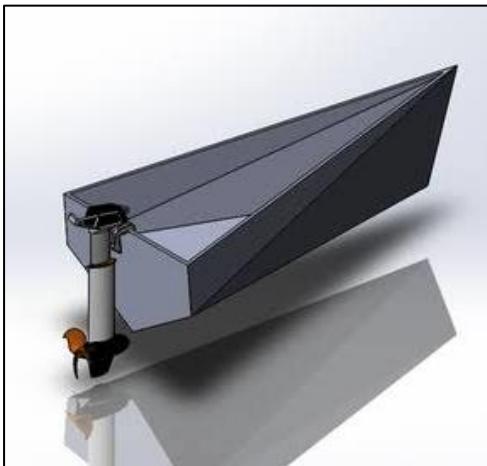


14th April '16

Making of the stand for showing the *mechanism* -



Side view-



Rudder-

Stand with tiller and rudder-



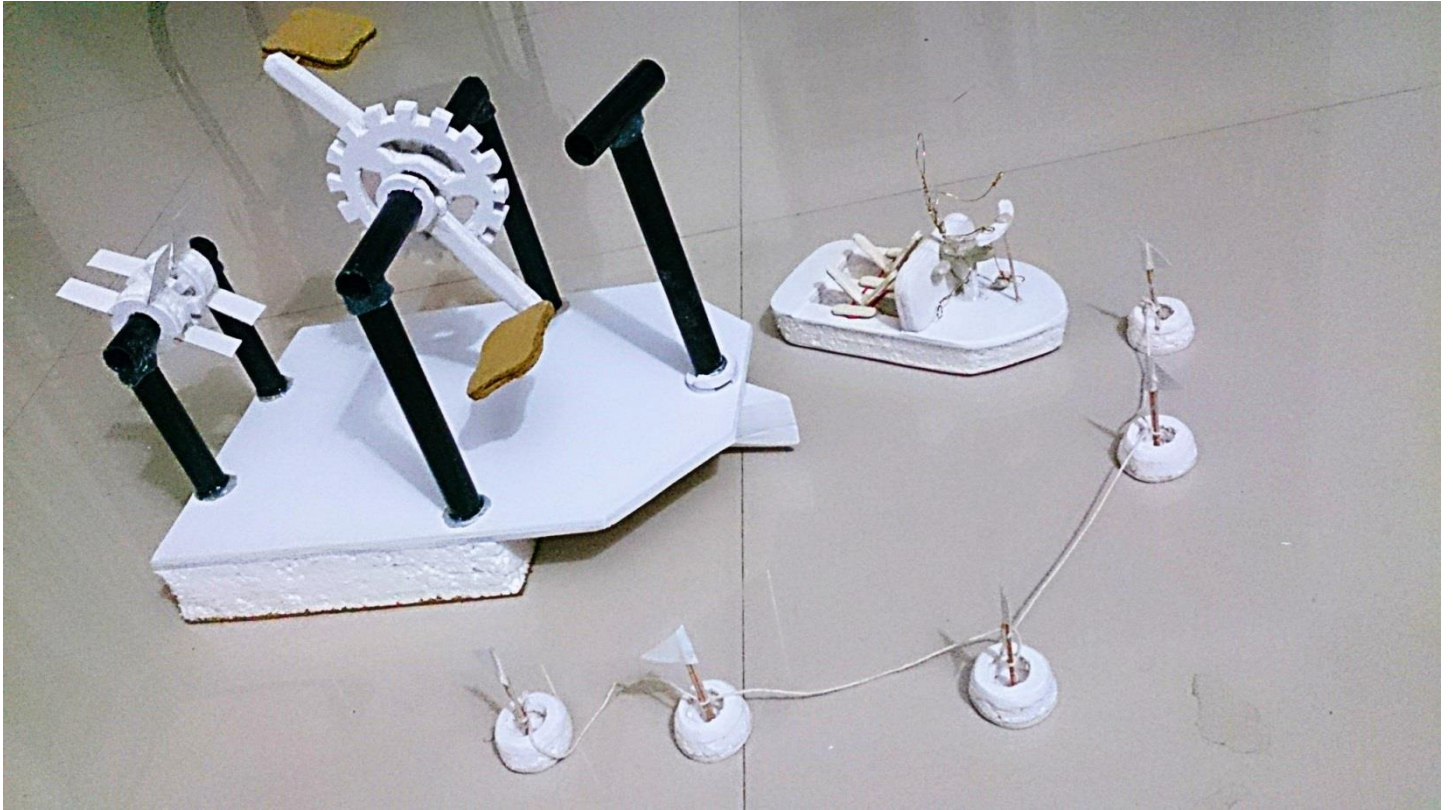
Complete set of *mechanism*-



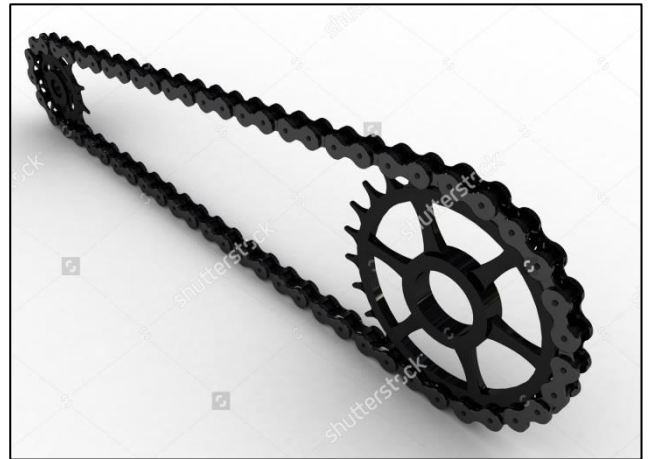
Reflection:

Making of cycle chain is left. Materials that can probably be used for making is rubber band, thread or wires.

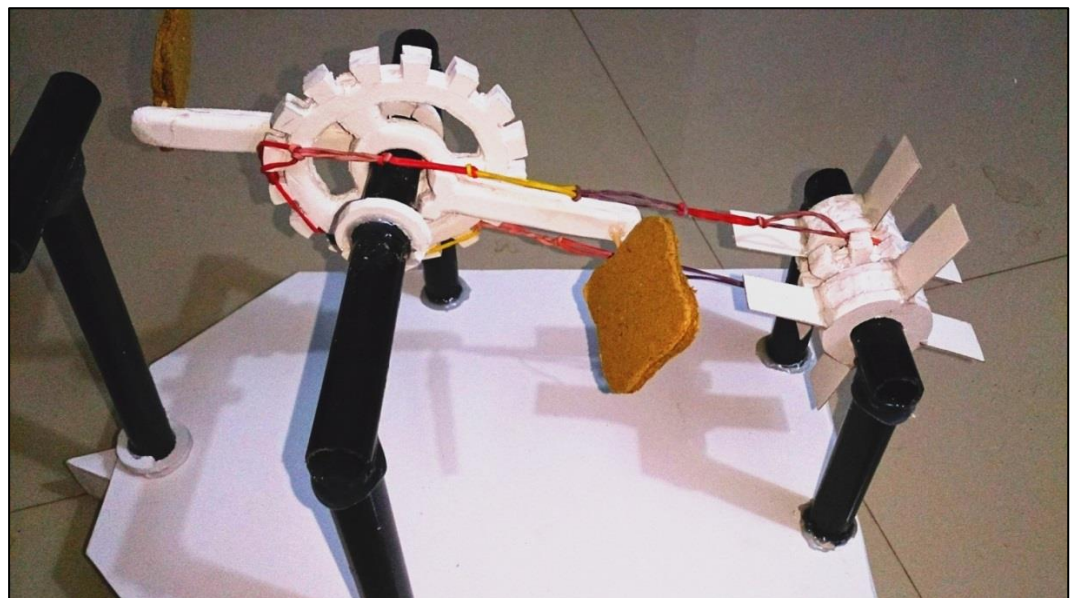
Complete set of the project-



15th April '16

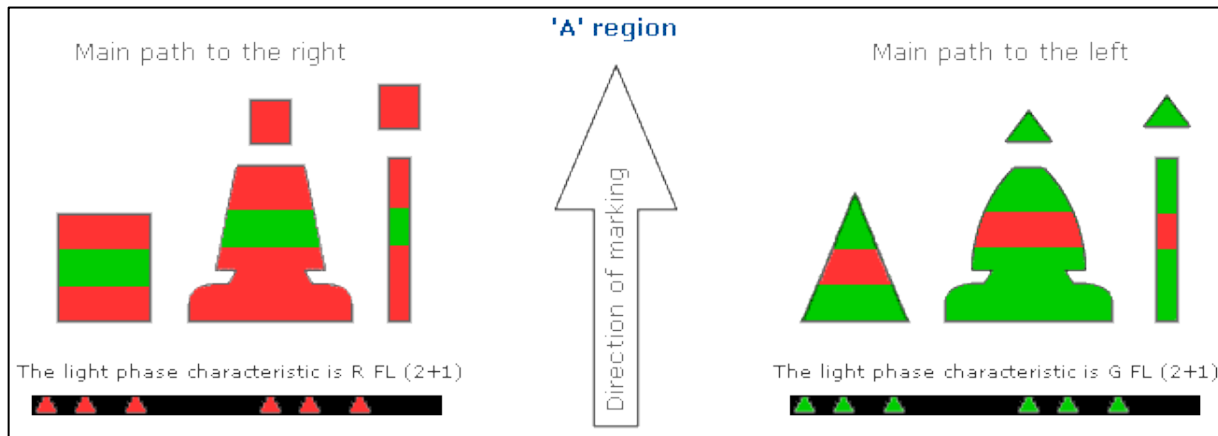


Reference for making the cycle chain-



Reflection: Tried making the chain with rubber bands. Due to its elastic property and flexibility, the rubber band chain would come off the gears.

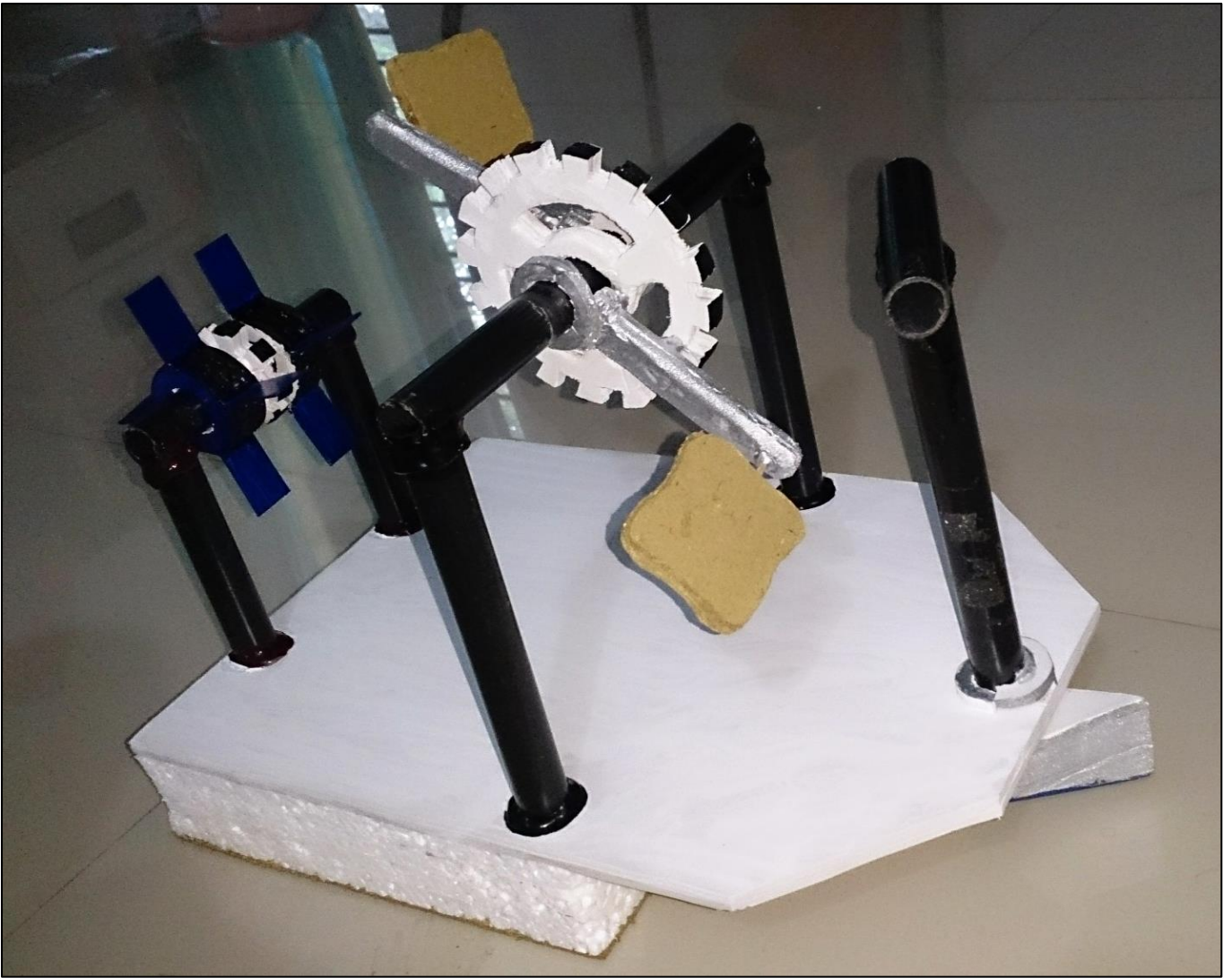
Colour combination for buoys-



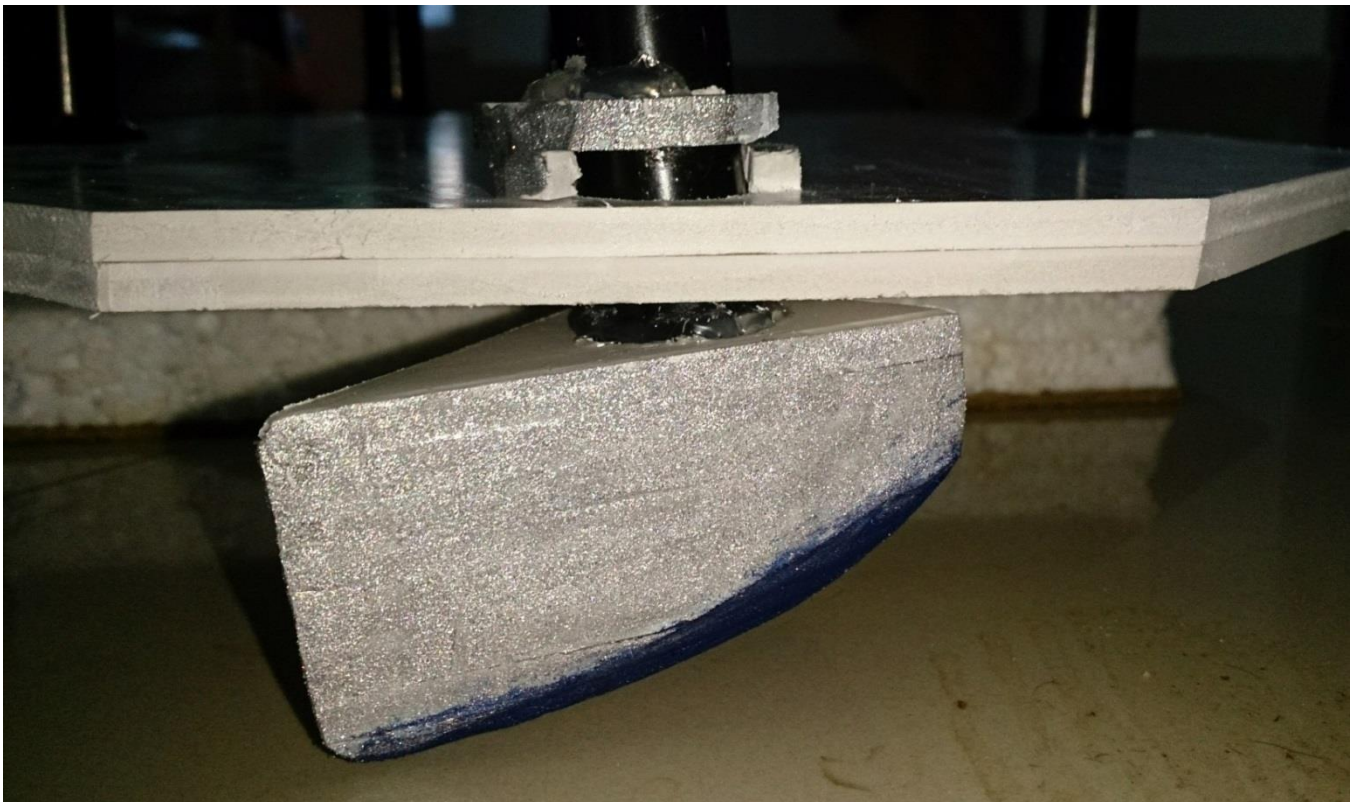
Complete set of the floating forms-



Complete set of the mechanism-



Tiller and Rudder-



➤ Testing the float set (final output)



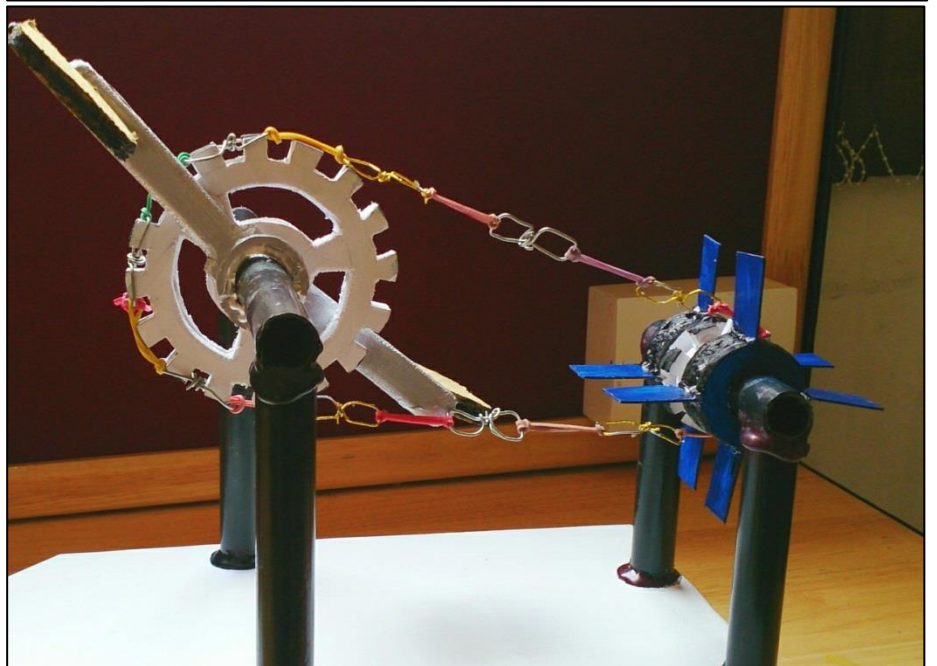
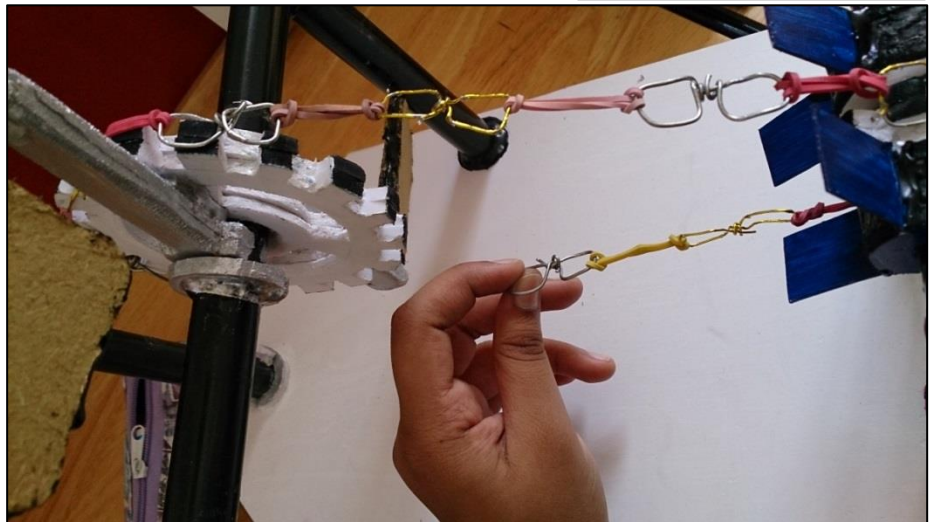
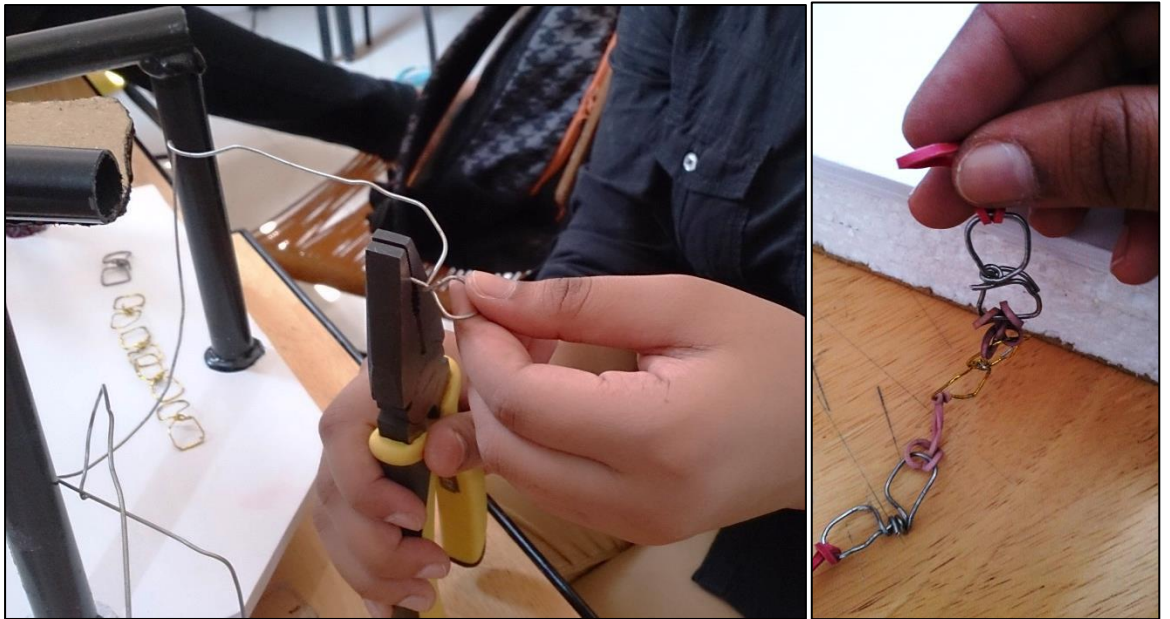
Buoys-

Testing the propellers-

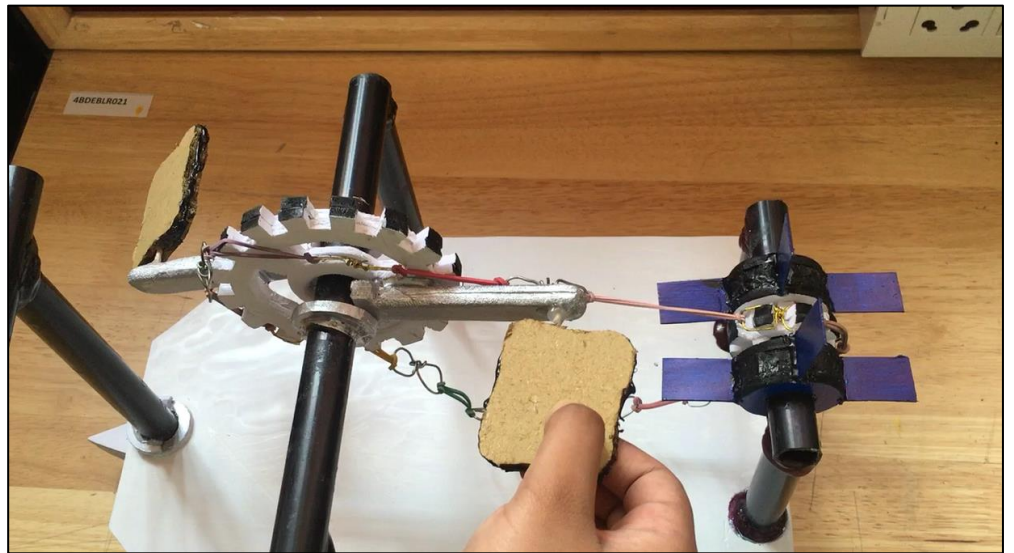


Cyclow on water-

Making of the cycle chain with wire and rubber band combination-

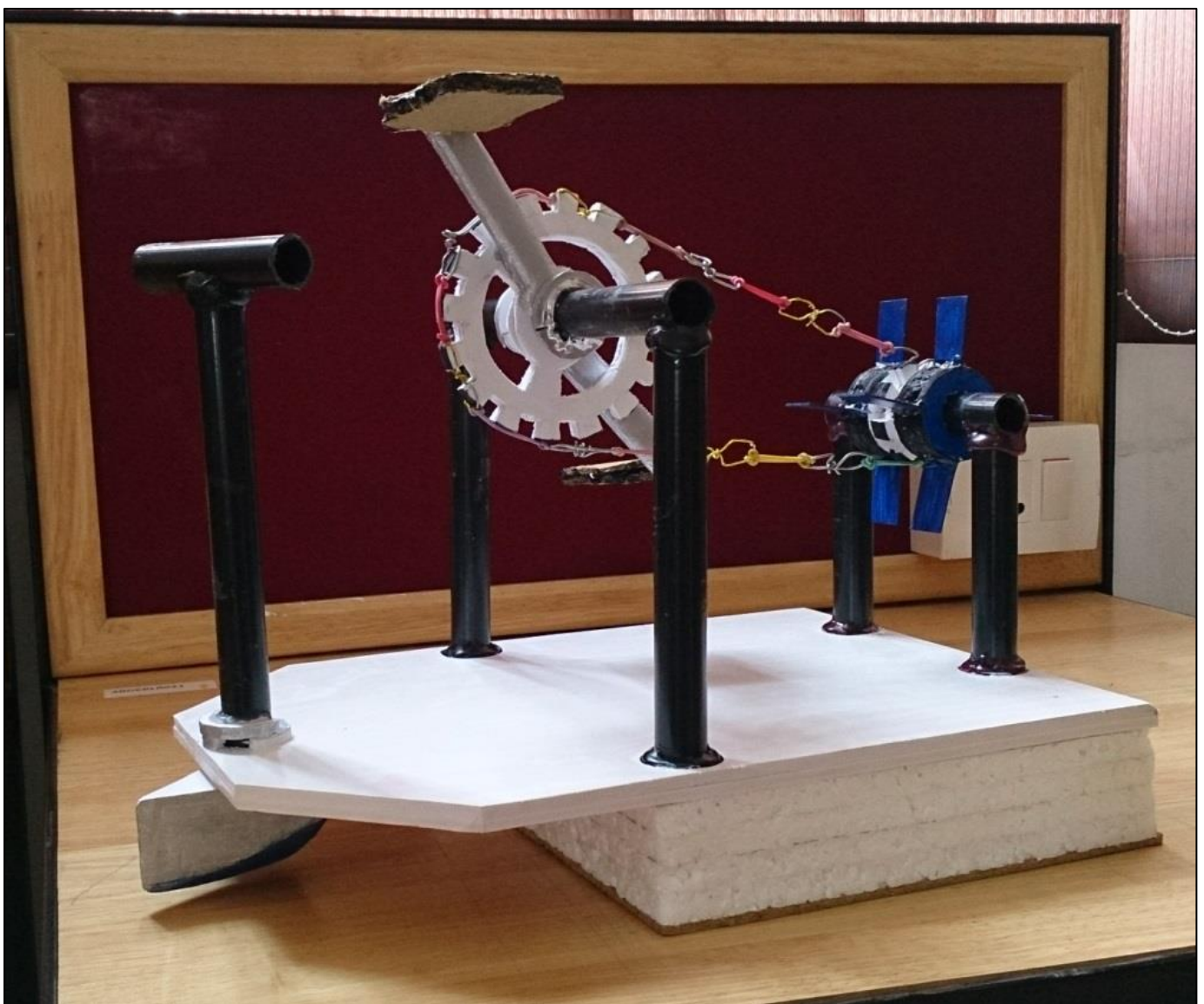


Reflection: The elasticity of the rubber bands builds up tension which turns the propellers as the pedals are moved in anti-clockwise direction. The wire loops give rigidity and firmness supporting the mechanism of the chains. There's still chance of the chain to come off the gears (shown in the following picture) as the wire loops have to be uniform.



Working of the *mechanism*-

Final look of the mechanism stand-



Tiller and rudder

Pedalling gear

Propeller

Material list

Sunboards, thermocol, icecream sticks, rubber bands, wires, m-seal, toothpicks, threads, PVC pipes, cardboard, mount board and basic stationary.

- Adobe premiere pro is used to edit the videos showing the working and floating forms.

Reflection

On our visit to Allalassandra Lake, I was intrigued with the open gym equipment in the park beside the lake. People of all age types were engaging with it. A classmate confirmed that RMZ corp. has incorporated such equipment in most of the parks in Bangalore. This action has been fruitful as many engage with it.

We were supposed to find relations between rituals and the lake. I thought that we don't have to look far, when we speak of religious rituals related to the lake. Although in the contemporary sense and the time spent in Bangalore, I have observed the localites engaging in various exercises and seem to be health conscious. Hence I was willing to see exercising as a ritual and wanted to connect it to the lake in the form of the cycling gym equipment I had seen earlier.

Figuring out the design of Cyclow was the challenge. I researched considerably on boat shapes and functioning of cycles and pedaling boats to figure out the technicalities of the form to float and move in water. Making of cycle chains were tricky as well, because the right materials and measurements were a must. I ended up using rubber bands and wire due to shortage of thin wires. I had planned to make the chain with wires which would be layered/twisted and secured with similar wires so that its functioning would be effective. I also got to explore the usage of sunboards. I learnt that they are compressed thermocols. My carving and cutting skills were tested when I attempted to cut various shapes on sunboard. Although I still need to figure out different substitute materials that can be used to make Cyclow and still be as effective in its functioning; because after all I used thermocol for the project which is a pollutant.

The two weeks have been testing my capabilities of patience and trials and errors (and that too all in mind games and visualization). I am content that I was considerably patient along the way and tried out various options when prior ideas seem to fail. I guess 'Try till you succeed' becomes the motto of Srishti exams and testing out limits to how far we think and use our will to complete our task. I can say that I am satisfied with what I have to show as the outcome of my project depending on the time constrains.

There is still lot to learn like how to manage time and budget to complete our task with content and satisfaction as we put our entire efforts in work so that we don't regret it later. But time heals all along with gaining experience.