Amphibian Bot

As the name suggests, in this project we will make a bot which can run on both water and land smoothly, we will not follow the mainstream path of hover mechanism, we are going to modify the wheels in such a way that it will run on water and land without any transformation in between which will help it to move smoothly from land to water and vice versa. Wheels would be in such a way that it will have two components, both the components will work all the time but they will come into play depending on where the bot is. Wheel will have a outer shaft which will have flaps, that will splash the water and will run over it. If possible we will try to add sonar system or nitro type mechanism. From sonar we will its data to make a target destroyer through some mechanism.

1. Motivation

An idea just came to mind that we can make a car run over
water if modify its wheels and somehow make it float over the
water surface.

2. Plan of action

1) First Week : learning about solid works for designing the wheels and streamline shape,
purchasing parts required and water proofing of bot. Learning matlab to plot the graph of the depth of water that our bot will measure.
2) Second Week : Designing a ground based vehicle/bot

according to maneuvering requirements like identifying suitable motors and wheel size,placement of battery and electrical circuits on the bot and also balancing the bot over water using our solid works knowledge.

3) Third Week : Designing the circuit board which includes the soldering and fitting parts of the bot .

4) Fourth Week : Actual construction of the vehicle upto a level of first test drive.

5) Fifth Week : Carrying out first test drive of the vehicle and figuring out glitches and possible improvements. Then if we have time remaining then we will work on the sonar mechanism and other modifications possible.

6) Sixth Week : Final touch up to the bot.

3. **Components Required**

1. 4 motors of 200 rpm of high torque

2. Lipo battery

3.transmitter and receiver

4.electrical components

5.sonar equipment if possible and other necessary materials

4. Cost

6000-7000 Rs

5. **Skills you need to learn**

We will need to learn solid works in order to design our wheels

also we will need to know about waterproofing of the bot and the electrical circuits involved in a wireless bot.