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ARDUINO BASED SNAKE ROBOT CONTROLLED USING ANDROID APPLICATION

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ABSTRACT

We humans have repeatedly acted motivated by nature really that we try to copy all things that kind likely, individual such I llustration is making a mechanical reptile. Which slides and moves like a reptile and form it fun and knowledgeable to build. In this project we will discover to attain motions like the reptile utilizing Servo motors and Arduino. The reptile-like robot is a biomorphic energetic-excessive machine that simulates a reptile. The shape and sizes of the twisting robot is revolved around on allure own use, various use may demand various sizes and shapes, because this project primarily mark search out design a snake-like machine that can prevent the barriers, so the reptile-like machine is planned to a moderate size accompanying 12 divisions, because the reptile-like machine can move flexibly in the landscape that has a lot of barriers. In order to form the reptile-like machine function and move like a absolute biological reptile, the reptile-like machine be going to involve numerous joints that allow the reptile-like machine to have numerous points of freedom, that present it the capability to bend, reach and approach a massive strength in its table accompanying an limitless number of configurations. This flexibility can allow the machine to move around in more involved surroundings. So, the use for this reptile-like machine could be very beneficial in hard to reach places or dangerous surroundings.

Index Terms – Arduino, Bluetooth, Servo Motor, Assault Pack

I. INTRODUCTION

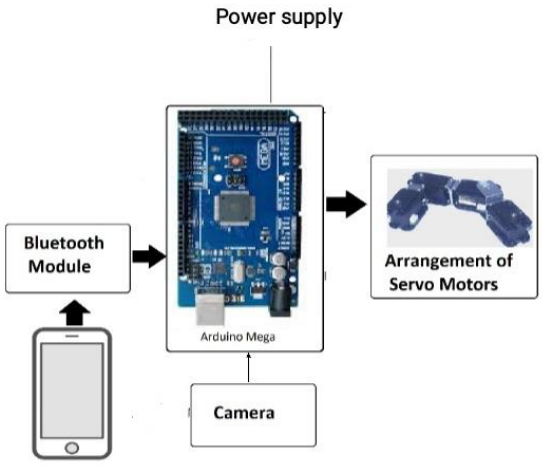
. The idea for reptile machine comes from organic snakes. Snakes display wonderful flexibility skills and can adapt basically any type of landscape, containing narrow and restricted positions. They are good climbers, very effective swimmers, and few snakes can even fly by begin undertaking arms and utilizing their material to slide through the air. A reptile robot is a mechanical machine created to move like a organic reptile. Inspired by the strength and support of the movement of organic snakes, reptile machines carry the potential of convergence the increasing need for mechanical flexibility in anonymous and questioning environments.The reptile controls having twelve of something sections stimulated by servo motors and linked with hardware supports. The servos are conditional an Arduino Mega and stimulate by a 7.4-volt assault pack. The snake possibly conditional an like a man app using Bluetooth. The reptile is more capable of independent of self-determining activity. After all, 12 sections are related, head and tail portions need to be additional in consideration of sustain the Arduino and batteries.Snake machines are a new type of machines, famous also as sly machines. As the name offers, these machines occupy various actuated joints accordingly various qualities of independence. This gives the system superior ability to bend, reach and approach a immense strength in allure table among infinite number of configurations. It can travel through nearly all types of terrains. So it maybe secondhand for many uses in the way that rescue responsibilities, firefighting and maintenance location it grant permission either be highly narrow or also hazardous for people to operate.

II. OBJECTIVE

Main goals concerning this work maybe pictured as:

- To decrease human effect
- To make a machine that can move through places location persons cannot reach
- Mainly passes through pipelines
- Detect the barriers and eliminate it
- Can be used in nuclear energy plants, fire fighting, supply of pipes, television etc

III. SYSTEM BLOCK DIAGRAM



IV. ADVANTAGES

- Useful in hard to reach places or hazard surroundings
- Move in unbalanced terrains
- Stability
- Terrainability
- Traction

V. DISADVANTAGES

- Low power and movement efficiency
- High cost of actuators(Servos and motors)
- Difficult to control high number of degrees of freedom

VI. APPLICATIONS

It maybe secondhand in various fields like:

- Agriculture
- Sanitation
- Fire fighting
- Surveillance support of complex and likely hazardous constructions or structures like nuclear plants or pipelines
- Intelligent duties

- Media
- Exploration
- Research, Education, Military, Disastar board and resue

VII. SCOPE

A reptile machine is considerably different from a traced machine,rotated machine and move along on foot machine,being a mobile machine along great repetition.Because of multi-joint adaptable construction design, a snake machine has the benefit of multi-walk motion and the capability to conform to a complex foreign environment and possibly common in trouble rescue,submarine survey,technical experiment and other different surroundings that usual machines or persons cannot enter.

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