**Project Proposal**

**On**

**FOUR LEG WALKER**

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**1. Introduction**

The project mainly aims to make an IOT Based four leg walker which detects the metal found inside the caves and the mountains.The project will help to detect whether the material found is a metal and can be used for further use.Moreover, it will reduce the load of the people by detecting whether the material found is a metal or not and generates a sound to notify. The project will also further extends its limits by adding a camera and can change their path by depicting the obstacle in its way.

**2. Problem Statement**

The goal is to make a four leg iot based walker which helps in mining as metal detector and ease the human workload .Features like camera module ,night vision can also be added to make it more efficient.

As the world is shifting towards machines and robots ,this project is also an attempt to reduce the work stress,and to prevent human resource from any mishappening in mining industry

**4. Objective**

The objective of this project is to develop the four leg walker using minimum number of servomotor. The minimum number of servo motor allows the walking robot to minimize the power consumption while construct a program that can produce coordination of multi-degree of freedom for the movement of the walker.

The main objective is to reduce the human workload and to keep humans out of harm’s way.

**5.Hardware and Software Specifications**

**ARDUINO UNO:**Arduino is an open-source electronics prototyping platform/environment .We can program an arduino using arduino ide.

**Servo Motor-**A servo motor is an electrical device which can push or rotate an object with great precision. If you want to rotate an object at some specific angles or distance, then you use servo motor.

**Camera or vision sensor:**The camera module OV7670 can be interfaced with Arduino UNO.

**Inductive Proximity sensor:**An inductive proximity sensor can detect metal targets approaching the sensor,without physical contact with the target.

**Power Supply circuit and metal/plastic body frame,etc**

**6.Testing Technologies**

**Functional Testing** ,it is a kind of black box testing that is performed to confirm that the functionality of an application or system is behaving as expected.

**Performance Testing**,Perf Testing is a type of testing performed to check how application or software performs under workload in terms of responsiveness and stability.

**7. Target audience**

Who doesn’t want to save his/her time? Everyone in this world know the value of the time. And we know that the world is shifting towards robotics and artificial intelligence ,in that case using mining robots or for leg walker could be a better option as these robots can be used to keep humans out of harm’s way and to ease the workload.

**8.Future Scope**

As the world is shifting towards robotics and machine learning, the project can play its part in its own way. The project is a step towards developing India mission by keeping human resources out of harm’s way and to ease the work ,mainly in the mining industry. The data collected by the sensor over a given mining area can be used to analyse or to detect certain items in the bounded constraints.Technology like Artificial Intelligence and machine learning can also be used in future to make this project more effective and reliable.