SWARM ROBOTICS

WEEK 1:

1:Arrangement of required components.

2:Assembly of bots without electrical components.

WEEK 2:

1:Fitting of ICs and other electronic components on the bot.

2:Attaching distance measuring sensors.

WEEK 3:

1:Learning image processing.

WEEK 4:

1.Learning image processing.

2.Learning language for coding in arduino.

WEEK 5 & 6:

1.Coding and testing/Implementaion of image processing technique.

Distance measuring Algorithm –

The main bot will have two ultrasound trabsmitters at a suitable distance apart. Each of the other bots will have a ultrasound reciever.Using the RF channel,utrasound,

the distance between the two transmitters and the receiver bot will be determined using the SONAR priciple.Using these two distances from the two refrence transmitters

we will determine the x,y coords of each bot (2 variables , 2 distance equations). Once the coords are known then a formation can easily be achieved.

OR

The bots can be controlled through image processing.

Components required:

Arduino: 4

Sensors for measuring distance: 4 pairs

Rf module: 4

Servo Motors: 8

Castor wheel: 4

Chasis: 4

Webcam: 1

Wheels: 8

Other basic electrical components.

Ex: ICs,PCBs,wires,etc.

PRIZE ESTIMATE:

Around **10000 - 12000**

We expect to learn the concept of image processing as well as efficient coding skills involving co-ordination between bots.