ABSTRACT

Humanoid robot is human-shaped robot that designed like human being, walking gait, moving, etc is designed like human. This robot has many functions, because of its design, it is easy to adapt with environment. There are humanoid robots participate in robot contest like KRSBI (Kontes Robot Sepak Bola Indonesia) which built to walk, run, and kick a ball to play football like human. The Humanoid robot's problem is about the balance, because of its function like human to walk using two feet, kicking a ball, and even running, the balance of the robot has to kept as good as possible.

Method that used to keep balance on this robot is Fuzzy Logic, with feedback from accelerometer and servos as actuator. Accelerometer is sensor that used to measure acceleration, so the robot will sense the tilt of its body while stand upright or walk. Through the I2C communication, Raspberry Pi 2 can read it's data which has the output of x and y. This sensor will give feedback to system for processing of Fuzzy Logic which has the output range between 0-1023 to rotate the servos between 0-360 degree to balance the robot.

Conclution of this research is fuzzy system is already running as expected, but couldn't keep the robot balance properly. The research about robot can keep its balance when the robot is walking with fuzzy logic system has not reached its goal yet .

Keywords : *Robot Humanoid, Sensor Accelerometer, Feedback, Raspberry Pi 2,Servo, Aktuator*