**Code Information About Beast:**

**How does Beast move?**

Stop And Go or Random Movement.

**Stop And Go:**

(*Robowiki,2017*) **Stop and Go** is a simple Movement technique to dodge bullets fired by enemy robot guns. Any advanced targeting system will chop movement into little pieces. Any enemy robot that maintains a log or and average of Beast’s velocity will not be fooled. Firstly, Beast try Stop and Go at the beginning of a battle, and let say if Beast fails, it will replace with a simpler, generic overall movement technique, which is **Random Movement.**

The main idea behind Stop and Go is quite simple to understand. If the enemy robot fires at Beast while Beast are standing, then Beast going to start moving for dodging. If the enemy robot fires when Beast are moving, Beast will stop.

**Random Movement:**

(*Robowiki,2017*) **Random Movement** is a form of movement technique which the direction to move is partly or entirely determined by a completely random number generator (For example, Math.random()). This is just for make it harder to enemy robot to predict the future position. Movement are completely random, ignoring everything during battle.

**How does Beast fire?**

SymbolicPatternMatching (Beasts Gun)

**Symbolic Patter Matching:**

(*Robowiki,2008*) **Symbolic Pattern Matching** a type of pattern matcher that maps the previous states of the enemy robot movement into some symbolic space (like a group of symbols). The main matching idea itself acts just like any other pattern matcher, compares the last items in the series (which is represent the recent movement information) with the rest of the series.

Generally, the symbols are characters and We created the series by convert them into a **String**. It gives you lots of flexibility, because the pattern matching algorithm is always the same; we just need to change the input (in code) to make it function in many ways.

**How does Beast is dodging bullets?**

**Stop And Go**, and if that fails, Beast switches to **Random Movement**. So, Beast is going to changes direction randomly when enemy robot fires.

**Beast Future Improvements:**

**Moving System:**

For Moving System, we think that it is useable and effective for dodging bullets. Because in battle area, Beast get damage so rarely. For corner sides of battle area Beast was stalling before. After last updates, this serious issue fixed.

**Attacking System:**

We are using SymbolicPatternMatching gun technique. Briefly, it gets the enemy robot location by using Symbol System and convert it to String. It is a sneaky technique for 1vs1 robot match. Because Beast detect and lock the first robot it saw. If someone wants to change that, we can suggest that, make it Scanner area of Beast narrower because for big battles, Beast is trying to shoot everyone it does not matter the enemy robot is far away or not and it uses energy. That means, Beast miss bullets sometimes because enemy robot has a long distance to Beast and that means, Beast starts to waste energy.

**General Improvement about Beast:**

Beast has not a complex code-system to understand. It has a well-commented and designed java code. So, if anyone wants to change any line or part in code. It going to be easy for developer. We always aim that, anybody can understand easily our code even, the person has not any knowledge about java, robocode.

**References:**

Robowiki. 2017. Stop And Go. [ONLINE] Available at: http://robowiki.net/wiki/Stop\_And\_Go. [Accessed 12 May 2019].

Robowiki. 2017. Random Movement. [ONLINE] Available at: http://robowiki.net/wiki/Random\_Movement. [Accessed 12 May 2019].

Robowiki. 2008. Symbolic Pattern Matching. [ONLINE] Available at: http://robowiki.net/wiki/SymbolicPatternMatching. [Accessed 12 May 2019].