Contemporary Data Processing Technology (CCOD) Lab 1 (September 08, 2016)

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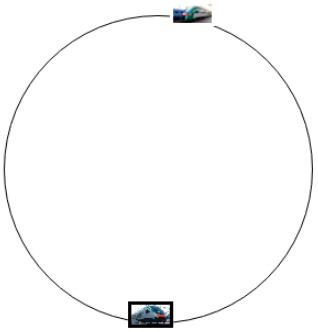
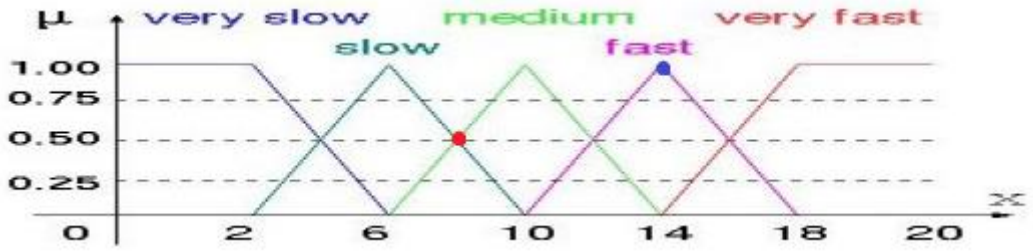
Control two metro cars using Speed, Distance, and Brake



fst speed: 8
snd speed: 14

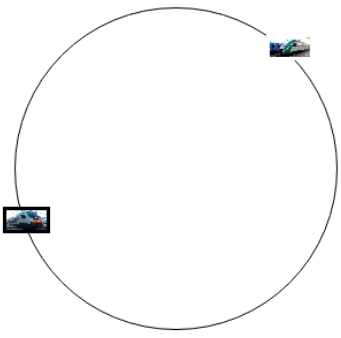
fst to snd distance is 496
snd to fst distance is 504



2nd train has 50% slow

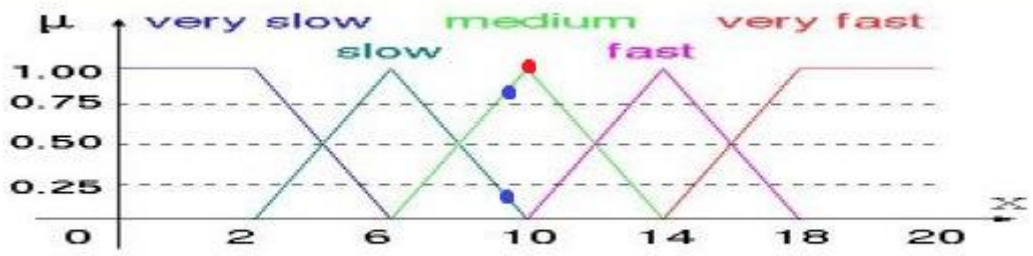
2nd train has 50% medium

1st train 100% fast



fst speed: 10
snd speed: 9

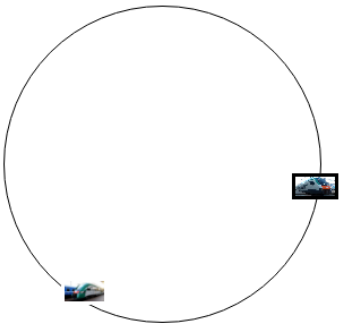
fst to snd distance is 406
snd to fst distance is 594



1st train has 100% medium

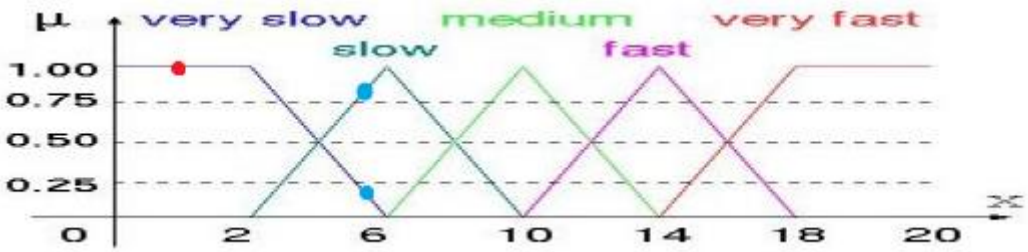
2nd train has 17.5% slow

2nd train has 82.5 medium



fst speed: 5
snd speed: 1

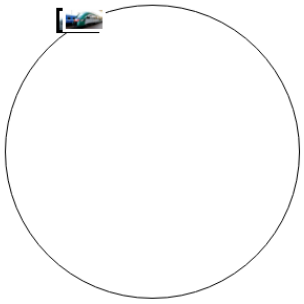
fst to snd distance is 276
snd to fst distance is 724



1st train has 100% very slow

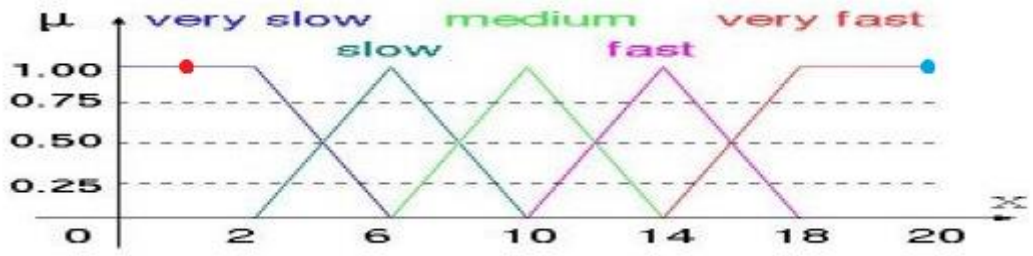
2nd train has 16.5% very slow

2nd train has 83.5% very slow



fst speed: 1
snd speed: 20

fst to snd distance is 0
snd to fst distance is 1000



1st train has 100% very slow

2nd train has 100% very fast

Source code

Index.html:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title></title>
  <link rel="stylesheet" href="css/style.css">
</head>
<body>
  <div class="subway_loop">
  <img class="train fst" src="img/5.jpg" width="20px" height="10px">
  <img class="train snd" src="img/6.jpg" width="20px" height="10px">
  </div>
  <div class="speed sndSpeed">snd speed: <span class="sndSpeedValue"></span></div>
  <div class="speed fstSpeed">fst speed: <span class="fstSpeedValue"></span></div>
  <div class="distance sndDistance">snd to fst distance is <span
class="sndDistanceValue"></span></div>
  <div class="distance fstDistance">fst to snd distance is <span class="fstDistanceValue"></span></div>
  <script src="js/script.js"></script>
</body>
</html>
```

Style.css

```
.subway_loop {
  margin: 20% auto;
  width: 159px;
  height: 159px;
  border: 1px solid black;
  border-radius: 80px;
}

.train {
  position: relative;
  border: 2px solid;
}

.snd {
  left: 50%;
  top: 0;
  border-color: #FFFFFF;
}

.fst {
  left: 50%;
  top: 100%;
  border-color: black;
}

.speed {
  position: fixed;
  font-size: 14px;
  left: 5%;
}
```

```
.sndSpeed {
  bottom: 0px;
}

.fstSpeed {
  bottom: 20px;
}
.distance{
  position: fixed;
  font-size: 14px;
  left: 65%;
}
.sndDistance {
  bottom: 0px;
}
.fstDistance {
  bottom: 20px;
}
```

Script.js

```
var fst = document.querySelector(".fst");
var snd = document.querySelector(".snd");
var sndSpeedValue = document.querySelector(".sndSpeedValue");
var sndDistanceValue = document.querySelector(".sndDistanceValue");
var fstSpeedValue = document.querySelector(".fstSpeedValue");
var fstDistanceValue = document.querySelector(".fstDistanceValue");
var startSpeed = 0.001;
var x0 = 77;
var y0 = 74;
var r = 79;
var i = -1.5;
var j = 1.5;
var start = Date.now();
```

```
var sndSpeed = 0.001,
  fstSpeed = 0.001;
var rand;
var sndway = 0,
  fstway = 0;
var rightsnd = snd.style.left + 20;
var leftsnd = snd.style.left;
var rightfst = fst.style.left + 20;
var leftfst = fst.style.left;
var topsnd = snd.style.top;
var bottomsnd = snd.style.top - 10;
var topfst = fst.style.top - 10;
var bottomfst = fst.style.top;
var timer = setInterval(function () {
  var timePassed = Date.now() - start;
  snd.style.left = x0 + r * Math.cos(i) - 35 + 'px';
  snd.style.top = y0 + r * Math.sin(i) - 5 + 'px';
  fst.style.left = x0 + r * Math.cos(j) - 10 + 'px';
  fst.style.top = y0 + r * Math.sin(j) - 5 + 'px';
  i = i + sndSpeed;
  j = j + fstSpeed;



  rand = randomValue(-1, 1) / 10000;
  if (sndSpeed > 0 || rand > 0) {
    sndSpeed += rand;
  }
  if (sndSpeed > 0.002) sndSpeed = 0.002;
  sndway += sndSpeed;
  sndSpeedValue.innerHTML = Math.round(sndSpeed * 10000);
  sndDistanceValue.innerHTML =500 + Math.round(Math.abs(sndway - fstway) / 6.0414 * 1000);
  rand = randomValue(-1, 1) / 10000;
```

```
  if (fstSpeed > 0 || rand > 0) {
    fstSpeed += rand;
  }
  if (fstSpeed > 0.002) fstSpeed = 0.002;
  fstway += fstSpeed;
  fstSpeedValue.innerHTML = Math.round(fstSpeed * 10000);
  fstDistanceValue.innerHTML = 1000 - (500 + Math.round(Math.abs(sndway - fstway) / 6.0414 * 1000));
  if (Math.abs(sndway - fstway) > 3.02) {
    clearInterval(timer);
  }
}, 2);
function randomValue(min, max) {
  return Math.round(min - 0.5 + Math.random() * (max - min + 1));
}
```