

Muzyka Alexandr 10.09.2016 Lab#1

Файл script.js

```
let cnv = document.getElementById("cnv");
let img=document.getElementById("train");
let ctx = cnv.getContext("2d");
const cnvWidth = cnv.getAttribute("width");
const cnvHeight = cnv.getAttribute("height");
const radius = 1000/(2*3.14);
let train1Angle = 0, train2Angle = 180;
let train1Speed = 10, train2Speed = 10;

function changeSpeed() {
  if(Math.random()<0.5){
    if(train1Speed<20){
      train1Speed++;
    }
    } else if(train1Speed>1){
      train1Speed--;
    }
    if(Math.random()<0.5){
      if(train2Speed<20){
        train2Speed++;
      }
      } else if(train2Speed>1){
        train2Speed--;
      }
    }
  }

function updateView() {
  ctx.clearRect(0,0,cnvWidth,cnvHeight);
  ctx.beginPath();
  ctx.lineWidth = 5;
  ctx.setLineDash([10]);
  ctx.arc(cnvWidth/2, cnvHeight/2, radius, 0, 2*Math.PI);
  ctx.arc(cnvWidth/2, cnvHeight/2, radius-10, 0, 2*Math.PI);
  ctx.stroke();

  let point1 = getXY(train1Angle);
  ctx.drawImage(img,point1.x-30,point1.y-22.5);
  let point2 = getXY(train2Angle);
  ctx.drawImage(img,point2.x-30,point2.y-22.5);

  train1Angle += train1Speed;
  train2Angle += train2Speed;

  if(Math.abs(point1.x-point2.x)<15 && Math.abs(point1.y-point2.y)<15 ){
    clearInterval(interval1);
    clearInterval(interval2);
  }
  let distanceX = Math.abs(train1Angle-train2Angle) * Math.PI / 180 * radius;
  document.getElementById("speedTrain1").innerHTML = train1Speed;
  document.getElementById("distanceX").innerHTML = distanceX;
  document.getElementById("speedTrain2").innerHTML = train2Speed;
  document.getElementById("distanceY").innerHTML = 1000-distanceX;
}

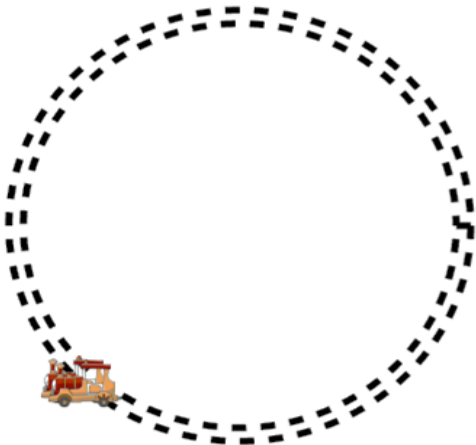
function getXY(angle) {
  let x = Math.cos( angle * Math.PI / 180) * radius + cnvWidth/2;
  let y = Math.sin( angle * Math.PI / 180) * radius + cnvHeight/2;
  return {x,y};
}
```

```
let interval1 = setInterval(changeSpeed, 500);
let interval2 = setInterval(updateView,100);
```

Файл index.html

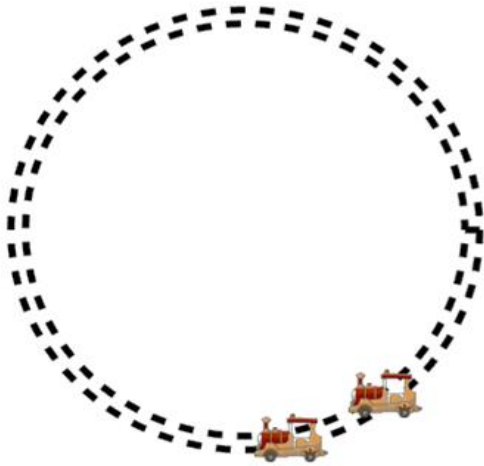
```
<!DOCTYPE html>
<html>
  <head>
    <title>lab #1</title>
  </head>
  <body>
    <canvas id="cnv" width="400" height="400"></canvas>
    <ul>
      <li>Speed train 1: <space id="speedTrain1">10</space></li>
      <li>Speed train 2: <space id="speedTrain2">10</space></li>
      <li>Distance X: <space id="distanceX">10</li>
      <li>Distance Y: <space id="distanceY">10</li>
    </ul>
    
  </body>
</html>

<script src = "src/script.js"></script>
```



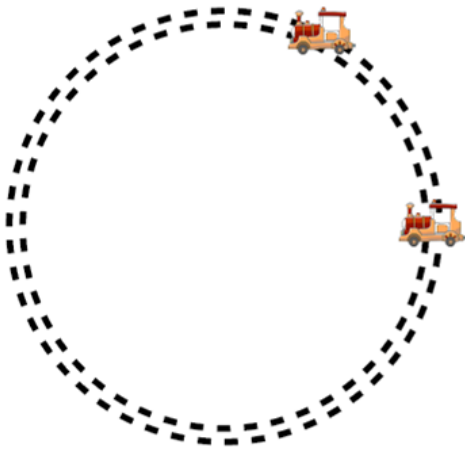
- Speed train 1: 14
- Speed train 2: 20
- Distance X: 1000
- Distance Y: 0

	Very slow	Slow	Medium	Fast	Very fast
Train1	0	0	0	1	0
Train2	0	0	0	0	1



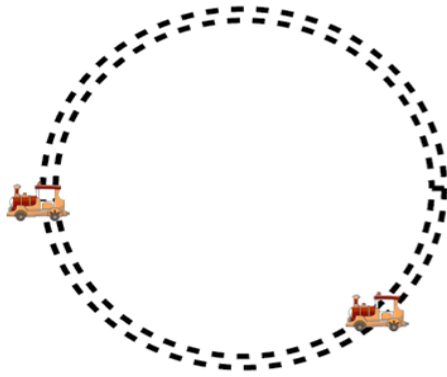
- Speed train 1: 13
- Speed train 2: 19
- Distance X: 944.9234803790955
- Distance Y: 55.07651962090449

	Very slow	Slow	Medium	Fast	Very fast
Train1	0	0	0.25	0.75	0
Train2	0	0	0	0	1



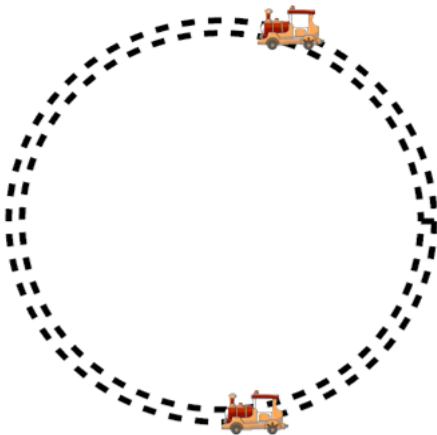
- Speed train 1: 12
- Speed train 2: 18
- Distance X: 844.8727589271912
- Distance Y: 155.12724107280883

	Very slow	Slow	Medium	Fast	Very fast
Train1	0	0	0.5	0.5	0
Train2	0	0	0	0	1



- Speed train 1: 13
- Speed train 2: 17
- Distance X: 655.8880628513721
- Distance Y: 344.11193714862793

	Very slow	Slow	Medium	Fast	Very fast
Train1	0	0	0.25	0.75	0
Train2	0	0	0	0.25	0.75



- Speed train 1: 14
- Speed train 2: 16
- Distance X: 594.7459552974307
- Distance Y: 405.25404470256933

	Very slow	Slow	Medium	Fast	Very fast
Train1	0	0	0	1	0
Train2	0	0	0	0.5	0.5