# Assignment Distance Calculator

## Author: Richard Hoquee

## Date: 6/09/2019

## Approach

Use Spring Framework, Spring Boot

Testing: Mockito

## Controller

Call validate parameters in service layer,

* throw exception for bad data.

Call conversion service in a separate service.

* Pass back JSON response in controller.

## Validation Service

Check both input value are numeric.

Check unit parameters are either Meters or Yards. Create an Enum for comparison.

If (valid) {

doCalculateDistance(paramater1, unit1 , parameter 2, unit 2, responseUnit)

} else {

Throw InvalidDataException for all cases when data invalid

}

## Conversion Service

Response doCalculateDistance (paramater1, distanceunit1 , parameter 2,

distanceunit 2, responseUnit)

Response response;

If (responseUnit = metres) {

response = convertToMetres(parameter1, unit1 , parameter 2, unit2)

} else {

response = convertToYards(parameter1, unit1 , parameter 2, unit2)

}

Return response;

Response ConvertToMetres(parameter1, unit1 , parameter 2, unit2) {

Response response;

p1\_metres = 0

p2\_metres = 0

If (unit1.equals(“metres”) && unit2.equals(“metres”) {

response = paramater1+ paramater2

Return response;

}

If(unit1.equals(“yards”){

p1\_metres = calculateToMetres(parameter1)

}

If(unit2.equals(“yards”){

p2\_metres = calculateToMetres(paramater2)

{

If (unit1.equals(“metres”) && unit2.equals(“yards”)

response = parameter1 + p2\_metres

Else If(unit1.equals(“yards”) && unit2.equals(“metres”)

response = p1\_metres + parameter2

Else response = p1\_metres + p2\_metres

Return response;

}

Float calculateToMetres(float yards)

float metres = yards/ 1.0936

return metres

Response ConvertToYards(parameter1, unit1 , parameter 2, unit2) {

Response response;

p1\_yards = 0

p2\_yards = 0

If (unit1.equals(“yards”) && unit2.equals(“yards”) {

response = paramater1+ paramater2

Return response;

}

If(unit1.equals(“metres”){

p1\_yards = calculateToYards(parameter1)

}

If(unit2.equals(“metres”){

p2\_yards = calculateToYards(parameter2)

{

If (unit1.equals(“yards”) && unit2.equals(“metres”)

response = parameter1 + p2\_yards

Else If(unit1.equals(“metres”) && unit2.equals(“yards”)

response= p1\_yards + parameter2

Else response = p1\_yards + p2\_yards

return response;

}

Float calculateToYards(float metres)

float yards = metres\* 1.0936

return yards