**Tables:**

dbo.UKOutwardCodes

Dbo.UKPostCodes

These contain Latitude and Longitude values for all UK Post Codes

HaversineFormula

The haversine formula determines the great-circle distance between two points on a sphere given their longitudes and latitudes. Important in navigation, it is a special case of a more general formula in spherical trigonometry, the law of haversines, that relates the sides and angles of spherical triangles.

Calculates distance between 2 points using latitude and Longitude values.

**A method from Patient.cs**

public Position PatientPosition(AspergillosisContext context)

{

if (PostCode == null) return new Position();

var dbPostCode = context.UKPostCodes.Where(pc => pc.Code.Equals(PostCode)).FirstOrDefault();

if (dbPostCode == null) return new Position();

var position = new Position();

position.Latitude = Math.Round(Decimal.Parse(dbPostCode.Latitude), 6);

position.Longitude = Math.Round(Decimal.Parse(dbPostCode.Longitude), 6);

return position;

}

public void SetDistanceFromWythenshawe(AspergillosisContext context, ILogger logger)

{

var patientPosition = PatientPosition(context);

var distanceCalculator = new GraphhopperApi(new RestClient(GraphhopperApi.ENDPOINT), logger);

var distance = distanceCalculator.RequestDistance(patientPosition);

DistanceFromWythenshawe = (double) distance;

}

Uses GraphHopper Api to determine tavel distance between two places.

public struct Position

{

public decimal Latitude;

public decimal Longitude;

public string AsString()

{

return Latitude.ToString() + "," + Longitude.ToString();

}

}

public class GraphhopperApi : RestApiBase

Uses NuGet package RestSharp

REST API client Library for .Net

**From Patient.js**

var distanceUpdate = function () {

$(document).off("click.distance").on("click.distance", "button#distance-update", function (e) {

e.preventDefault();

LoadingIndicator.show();

$.post("/postcodes/update", function (response) {

LoadingIndicator.hide();

});

});

};

public class PostcodesController : Controller

Imports.js

public class ImportsCo

ntroller : Controller

public class ExternalImportsController : Controller

public class DataTableDbImportsController : DataTablesController