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# Handout 3 - find names of failed outlets near a position

# Function to calculate distance between two points using Pythagoras
FUNCTION getDistance( REAL hereX, REAL hereY, REAL x, REAL y ) RETURNS REAL
    DECLARE xDiff INITIALLY hereX - x
    DECLARE yDiff INITIALLY hereY - y

    # Use Pythagoras to find the distance between the two (x,y) points
    DECLARE distance INITIALLY sqrt( (xDiff * xDiff) + (yDiff * yDiff) )

    RETURN distance
END FUNCTION


# This will be the collection of failed outlets - just storing the names.
DECLARE failedNearMe AS ARRAY OF STRING INITIALLY []


# This is dummy data - could typically be read in from GPS, or via text input etc.
DECLARE myX INITIALLY -4.25772
DECLARE myY INITIALLY 55.86079
DECLARE minimumDistance INITIALLY 1.0  # This is a dummy distance


# Now scan through all outlets, checking on failure status and distance
FOR EACH outlet FROM outlets DO
    IF outlet.ratingValue = "Improvement Required" AND
       (minimumDistance >=
        getDistance( myX, myY, outlet.longitude, outlet.latitude )) THEN
        SET failedNearMe TO failedNearMe & [ outlet.businessName ]
    END IF
END FOR EACH


# Now print out all the failed outlet names
FOR EACH failed FROM failedNearMe DO
    SEND failed TO DISPLAY
END FOR EACH
```