

Comment:

dictionary data is a dictionary (json format) that have every Hi Hermite coefficient and have the final polynomial
sm is a import of sympy from python to to represent variables in a polynomial

parse_expr(): this function that change a string to sympy expression (is a function from sympy)
lagrange.lagrange: its a methos in the lagrange.py file that give us the lagrange coefficient

diff(x) it's a method from sympy to found a derivative of a specific function

json.dumps it's a method to do a json from a dict

Input: array arrayX array arrayY, array arrayz, int size
Output: json data

```
begin hermite
x <- sm.symbols('x')
array arrayAux
array arrayDerivate
array arraySquare
array H
array H2
int counter <- 0
dictionary dic <- lagrange.lagrange(x,y,size)
while (counter < size(dic)-1) do:
    arrayAux.add(parse_expr(dic[counter]))
    arraySquare.add(parse_expr(dic[counter])*parse_expr(dic[counter]))
    counter <- counter + 1
counter <- 0
while (counter < size(arrayAux)) do:
    arrayDerivate.add(arrayAux[counter].diff(x))
    counter <- counter + 1
counter <- 0
while (counter < size) do:
    value <- arrayDerivate[counter].subs(x,arrayX)
    aux <- (((x-arrayX[counter])*value*(-2))+1)
    aux <- aux * arraySquare[counter]
    H.add(aux)
    value <- (x-arrayX[i])*arraySquare[i]
    H2.add(value)
    counter <- counter + 1
```

```

polynomial <- 0
counter <- 0
while (counter < size(H)) do:
  results[counter] <- arrayY[counter]*H[counter]
  polynomial <- polynomial+(arrayY[counter]*H[counter])
  counter <- counter + 1
results["polynomial"] <- polynomial
data <- json.dumps(results)
return data
end hermite

```