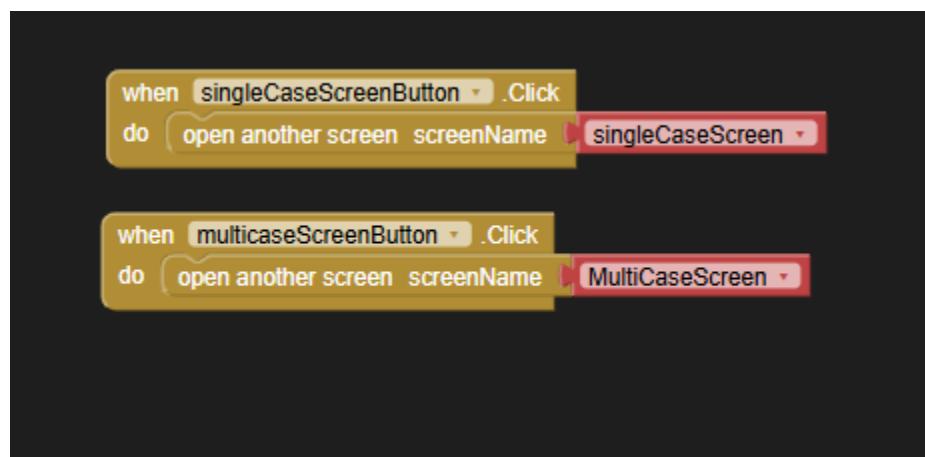
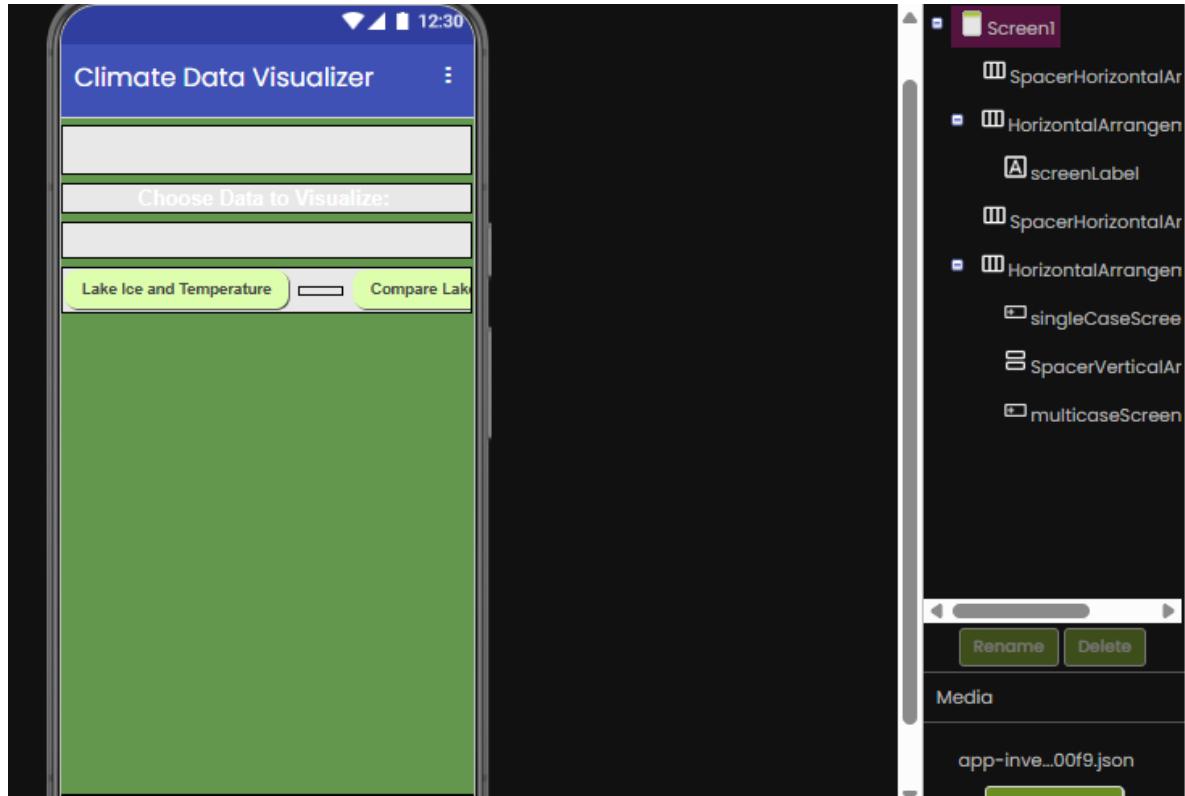


Proyecto IceMelt: Modeling and Predicting Climate Change

Lección 1: Visualizing Climate

- Pantalla y bloques 1



- SingleCaseScreen

The screenshot displays a mobile application titled "Visualize Climate Data". The screen features two line charts: "Ice Duration" and "Temperature". The "Ice Duration" chart shows a linear relationship between Days of Ice Cover (X-axis, 1 to 4) and Ice Duration (Y-axis, 0 to 3). The "Temperature" chart shows a similar linear relationship between Year (X-axis, 1 to 4) and Temperature (Y-axis, 0 to 3). Below the charts are two buttons: "Home" and "Show Data".

Scratch Script:

```

when [homeButton] .Click
do [open another screen screenName Screen1]

when [showDataButton] .Click
do [call [topChartData2D] .Clear
call [BottomChartData2D] .Clear
call [spreadsheet1] .ReadSheet
sheetName "Spirit Lake"]

when [spreadsheet1] .GotSheetData
sheetData
do [set [topChartLabel] .Text to "Spirit Lake, Orleans, Iowa"]
call [topChartData2D] .ImportFromSpreadsheet
spreadsheet [spreadsheet1]
xColumn "Year"
yColumn "Ice"
useHeaders true
call [BottomChartData2D] .ImportFromSpreadsheet
spreadsheet [spreadsheet1]
xColumn "Year"
yColumn "Temp"
useHeaders true

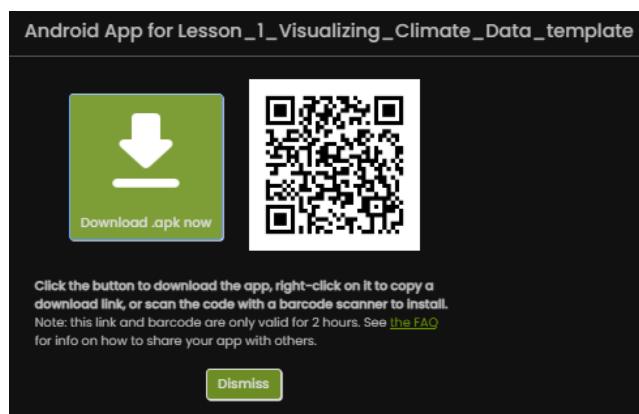
```

The Scratch script consists of three main sections. The first section, triggered by the "homeButton" click, opens a new screen named "Screen1". The second section, triggered by the "showDataButton" click, clears the data for both charts and reads data from a spreadsheet sheet named "Spirit Lake". The third section, triggered by the "spreadsheet1" "GotSheetData" event, sets the top chart's label to "Spirit Lake, Orleans, Iowa" and imports data from the spreadsheet into both charts.

- MultiCaseScreen

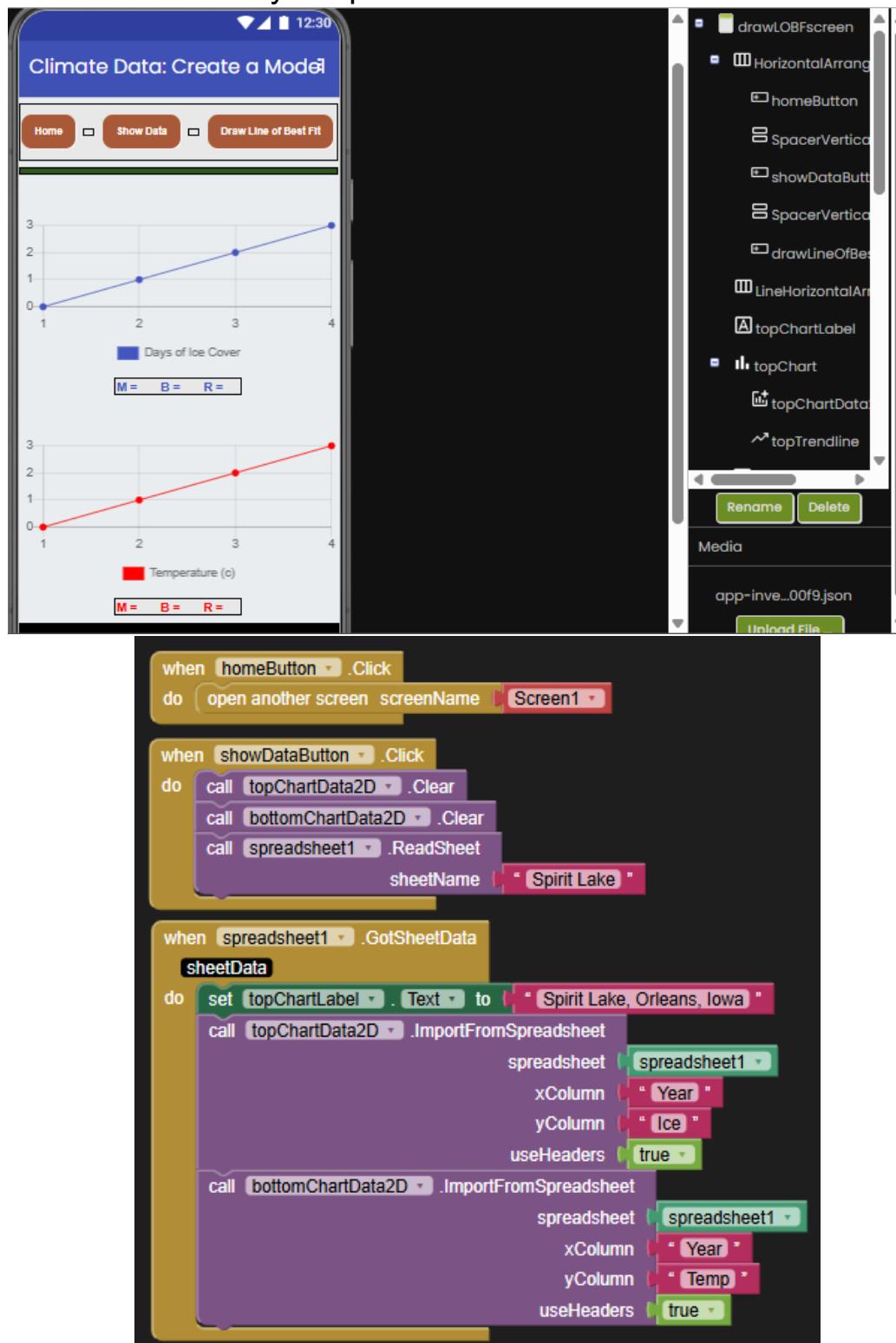


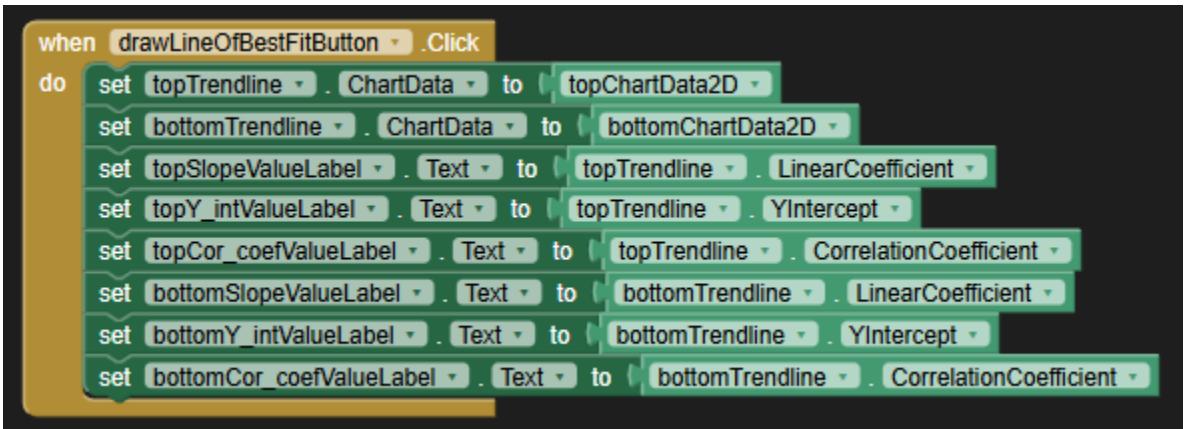
- APK



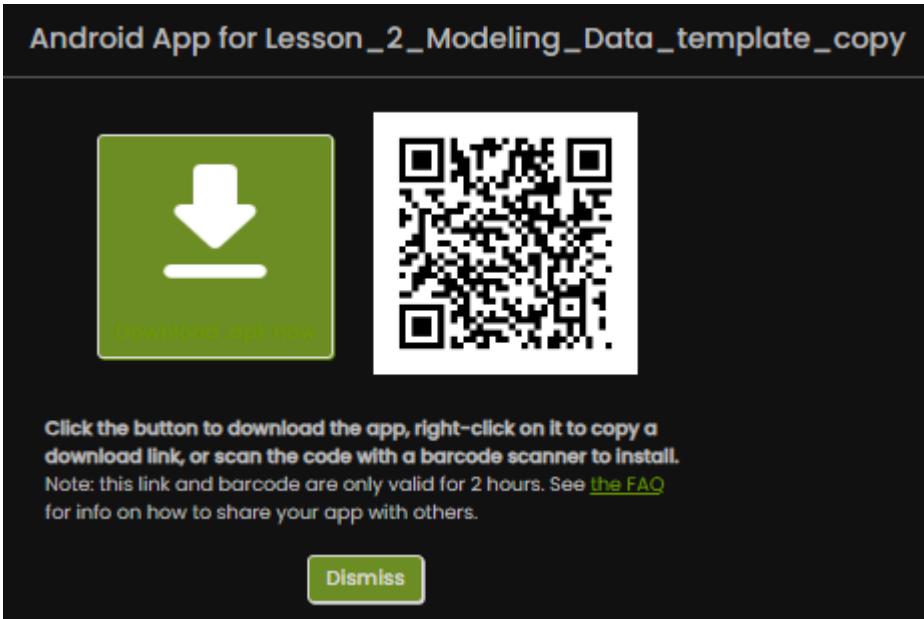
Lección 2: Visualizing Climate

- drawLOBFscreen y bloques

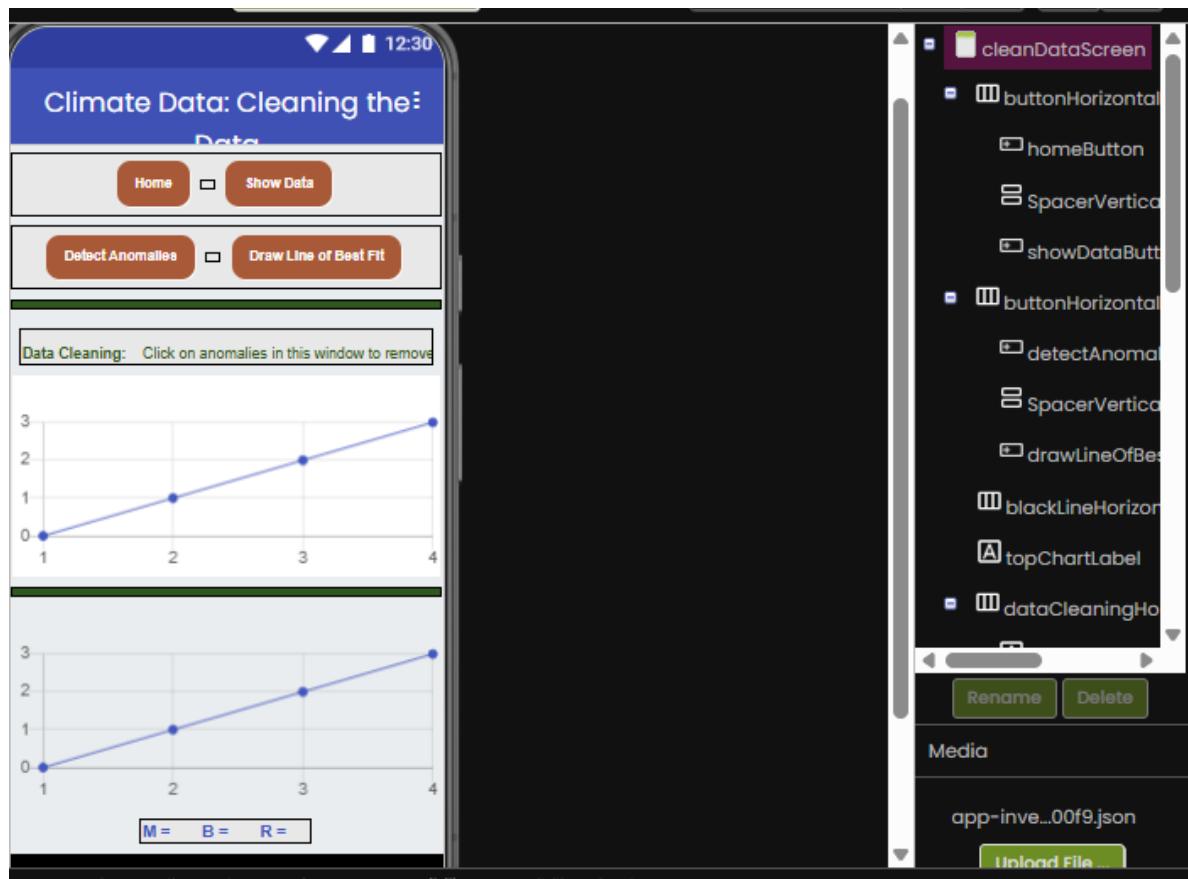




- APK



Lección 3. Cleaning Climate Data



```

when drawLineOfBestFitButton .Click
do set Trendline1 . ChartData to cleanedChartData2D

when detectAnomaliesButton .Click
do call dataCleaningChartData2D .HighlightDataPoints
    dataPoints | call AnomalyDetection1 . DetectAnomaliesInChartData
        chartData | dataCleaningChartData2D
        threshold | 2
    color | green

when dataCleaningChartData2D .EntryClick
x | y
do call dataCleaningChartData2D .RemoveEntry
    x | get x |
    y | get y |
call cleanedChartData2D .Clear
call cleanedChartData2D .ImportFromList
list | call dataCleaningChartData2D .GetAllEntries

when Trendline1 .Updated
results
do set SlopeValueLabel . Text to Trendline1 . LinearCoefficient
set Y_intValueLabel . Text to Trendline1 . YIntercept
set Cor_coeffValueLabel . Text to Trendline1 . CorrelationCoefficient

```

```

when homeButton .Click
do open another screen screenName Screen1

when showDataButton .Click
do call cleanedChartData2D .Clear
call dataCleaningChartData2D .Clear
call spreadsheet1 .ReadSheet
sheetName | "Spirit Lake"

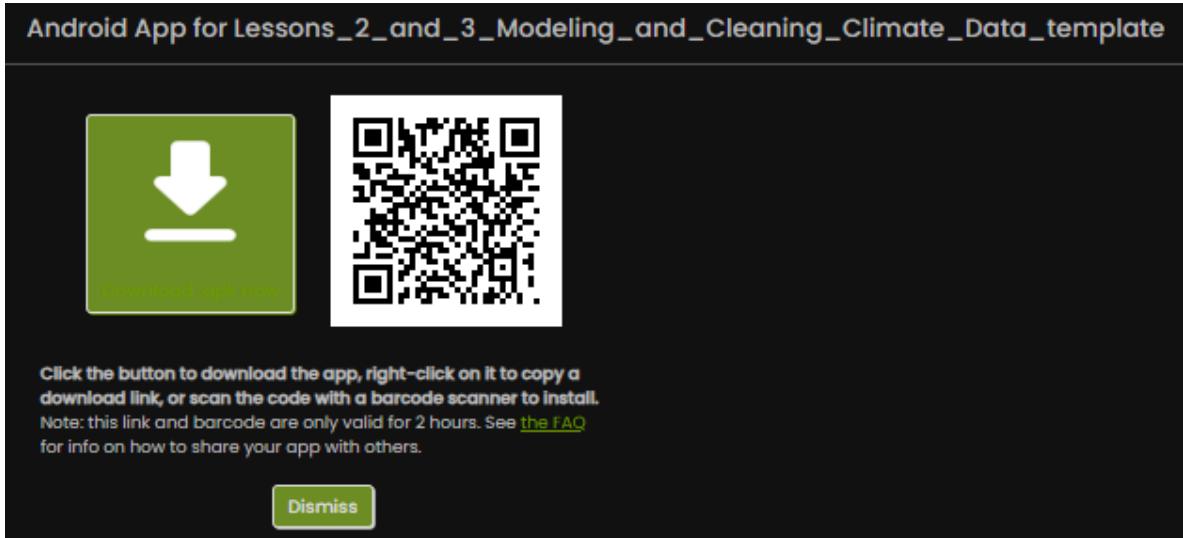
```

```

when spreadsheet1 .GotSheetData
sheetData
do set topChartLabel . Text to "Spirit Lake, Orleans, Iowa"
call dataCleaningChartData2D .ImportFromSpreadsheet
spreadsheet | spreadsheet1
xColumn | "Year"
yColumn | "Ice"
useHeaders | true
call cleanedChartData2D .ImportFromSpreadsheet
spreadsheet | spreadsheet1
xColumn | "Year"
yColumn | "Ice"
useHeaders | true

```

- APK



Lección 4. Predicciones e Inteligencia Artificial

- Pantalla y bloques



```

when homeButton .Click
do open another screen screenName Screen1

when showDataButton .Click
do call cleanedChartData2D .Clear
call dataCleaningChartData2D .Clear
call spreadsheet1 .ReadSheet
sheetName " (Spirit Lake) "
set dataCleaningChart .Visible to true
set dataCleaningHorizontalArrangement .Visible to true
set AiResponseHorizontalArrangement .Visible to false

when spreadsheet1 .GotSheetData
sheetData
do set topChartLabel .Text to " Spirit Lake, Orleans, Iowa "
call cleanedChartData2D .ImportFromSpreadsheet
spreadsheet spreadsheet1
xColumn "Year"
yColumn "Ice"
useHeaders true
call dataCleaningChartData2D .ImportFromSpreadsheet
spreadsheet spreadsheet1
xColumn "Year"
yColumn "Ice"
useHeaders true

```

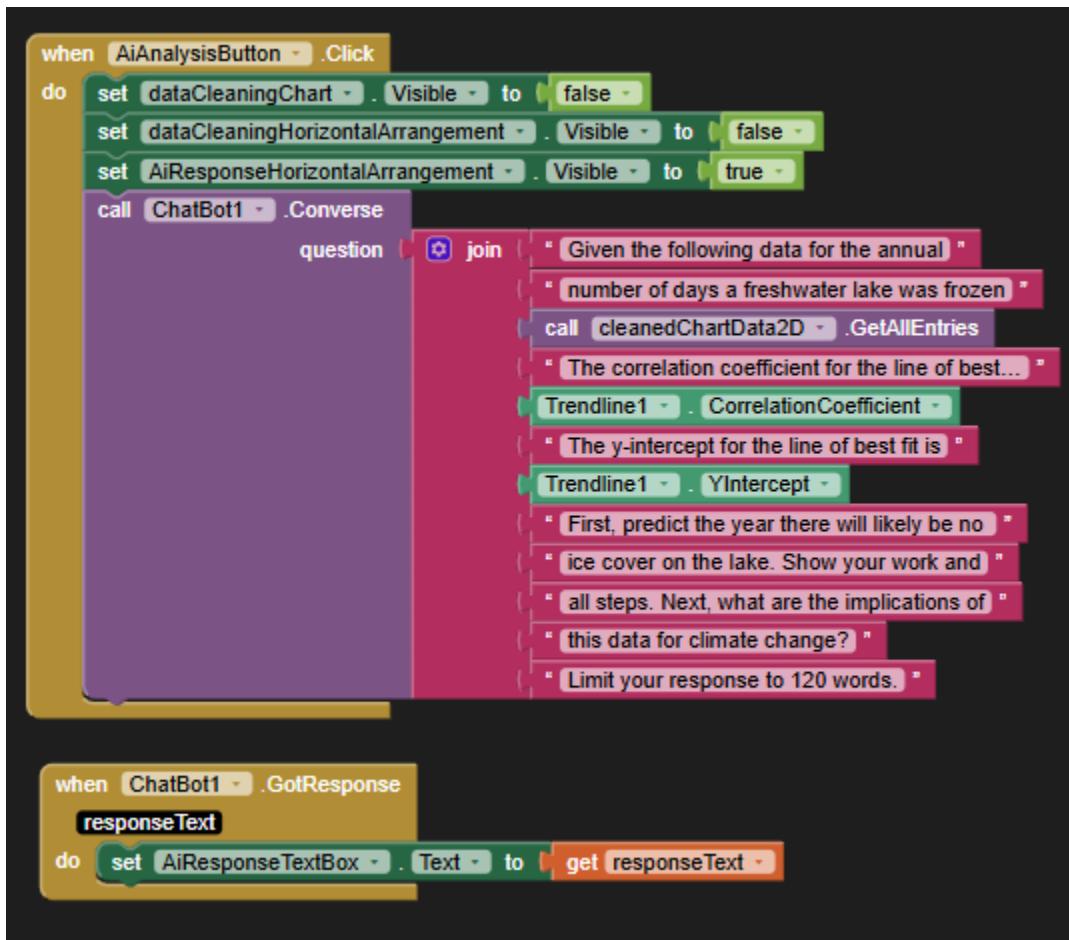
```

when drawLineOfBestFitButton .Click
do set Trendline1 .ChartData to cleanedChartData2D

when Trendline1 .Updated
results
do set SlopeValueLabel .Text to Trendline1 .LinearCoefficient
set Y_intValueLabel .Text to round Trendline1 .YIntercept
set Cor_coefValueLabel .Text to Trendline1 .CorrelationCoefficient
set X_InvValueLabel .Text to round Trendline1 .XIntercepts
call cleanedDataChart .ExtendDomainToInclude
x Trendline1 .XIntercepts

when detectAnomaliesButton .Click
do call dataCleaningChartData2D .HighlightDataPoints
dataPoints call AnomalyDetection1 .DetectAnomaliesInChartData
chartData dataCleaningChartData2D
threshold 2
color red

```



- APK

