

# Actividad 9. Proyecto

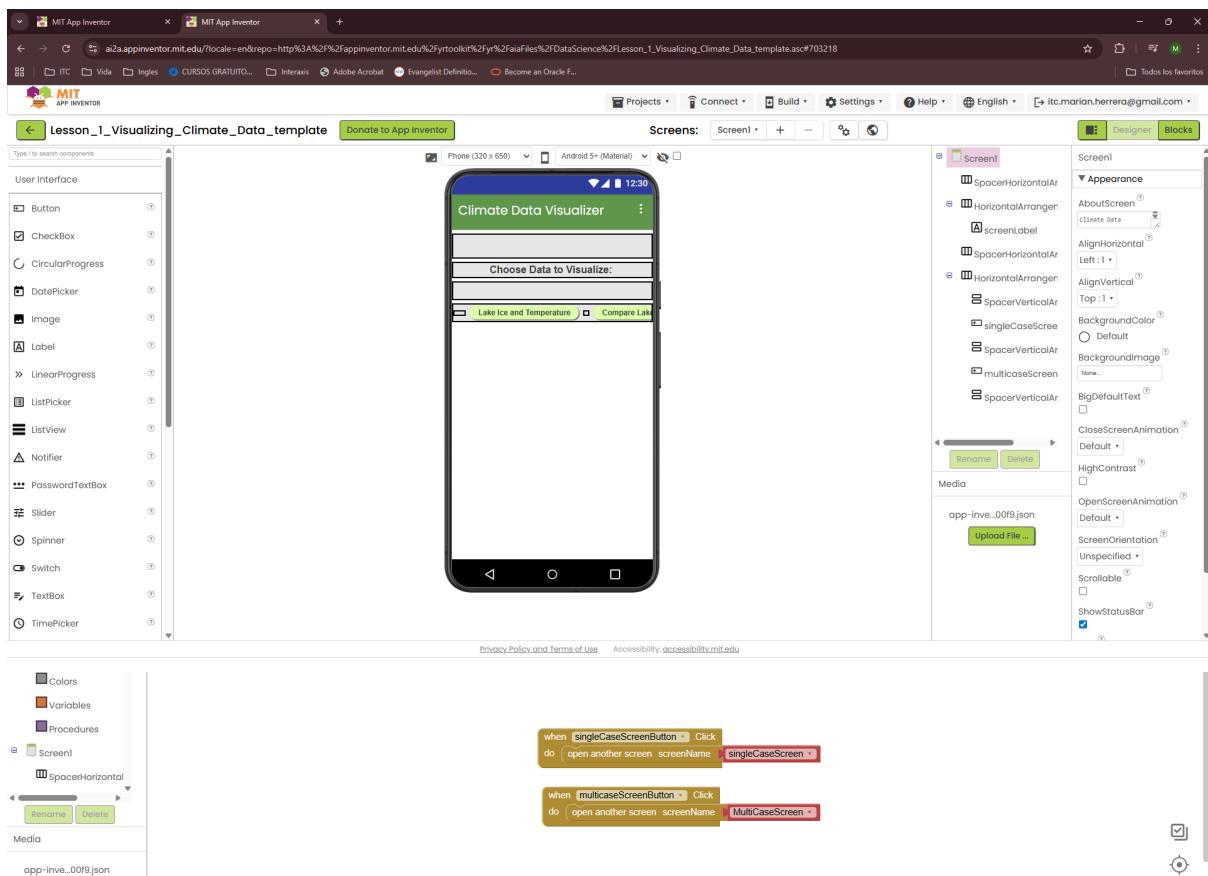
## IceMelt

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### Step 1: Visualize Climate Data

#### Initial Screen



## MultiCaseScreen Screen

The screenshot shows the MIT App Inventor Designer interface for the 'MultiCaseScreen' screen. The screen displays two charts: 'Ice Duration' and 'Temperature'. The 'Ice Duration' chart shows data for two locations: Sprint Lake and Otsego Lake. The 'Temperature' chart shows temperature data over time. The Designer panel on the right shows the component tree and behavior blocks for the MultiCaseScreen.

**Component Tree:**

- MultiCaseScreen
  - LineHorizontalArr
  - LineHorizontalArr
  - HorizontalArr
  - LineHorizontalArr
  - LineHorizontalArr
  - topChartLabel
  - topChart
    - topChartData2
  - LineHorizontalArr
  - BottomChart
    - BottomChartD

**Behavior (blocks):**

```

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

when showDataButton - Click
do call topChartData2D - Clear
call spreadsheet1 - ReadSheet
sheetName [Sprint Lake]
call spreadsheet2 - ReadSheet
sheetName [Otsego Lake]

when spreadsheet1 - GotSheetData
sheetData
do set topChartLabel - Text to [Sprint Lake, Orleans, Iowa]
call topChartData2D - ImportFromSpreadsheet
spreadsheet [spreadsheet1]
xColumn [Year]
yColumn [Ice]
useHeaders [true]

when spreadsheet2 - GotSheetData
sheetData
do set topChartLabel - Text to [Otsego Lake, Cooperstown, New York]
call BottomChartD - ImportFromSpreadsheet
spreadsheet [spreadsheet2]
xColumn [Year]
yColumn [Ice]
useHeaders [true]

```

## SingleCaseScreen Screen

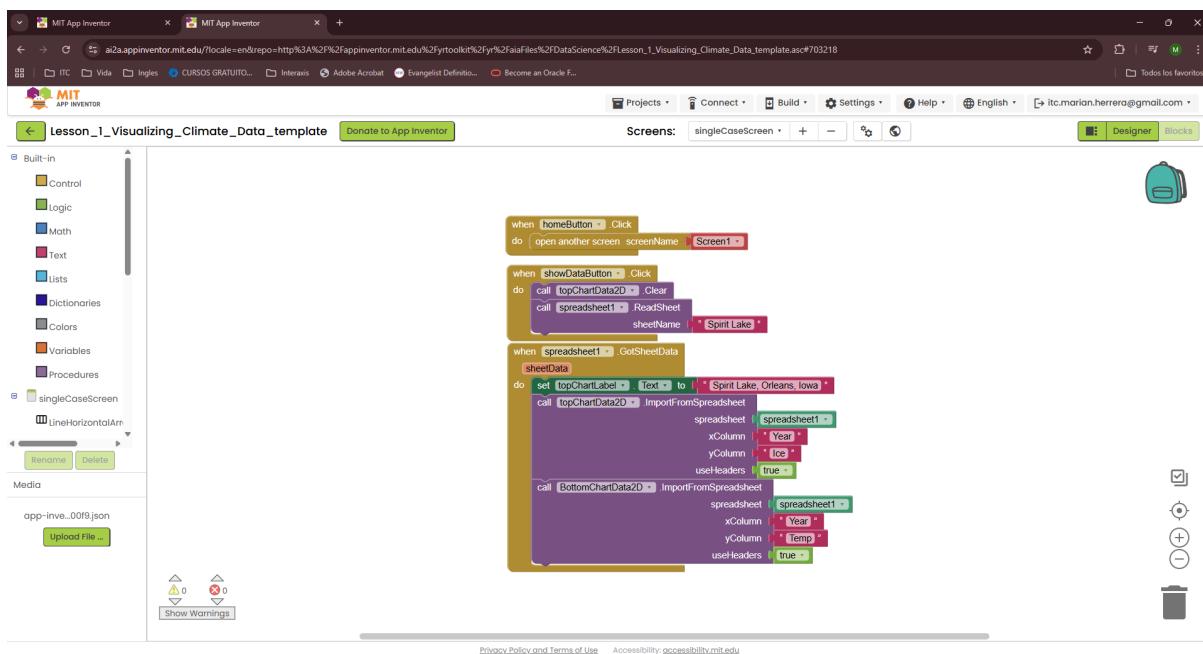
The screenshot shows the MIT App Inventor Designer interface for the 'singleCaseScreen' screen. The screen displays two charts: 'Ice Duration' and 'Temperature'. The 'Ice Duration' chart shows data for 'Days of Ice Cover'. The 'Temperature' chart shows temperature data over time. The Designer panel on the right shows the component tree and appearance settings for the topChartLabel.

**Component Tree:**

- singleCaseScreen
  - LineHorizontalArr
  - LineHorizontalArr
  - HorizontalArr
    - homeButton
    - SpacerVertical
    - showDataButton
  - LineHorizontalArr
  - LineHorizontalArr
  - topChartLabel
  - topChart
    - topChartData2

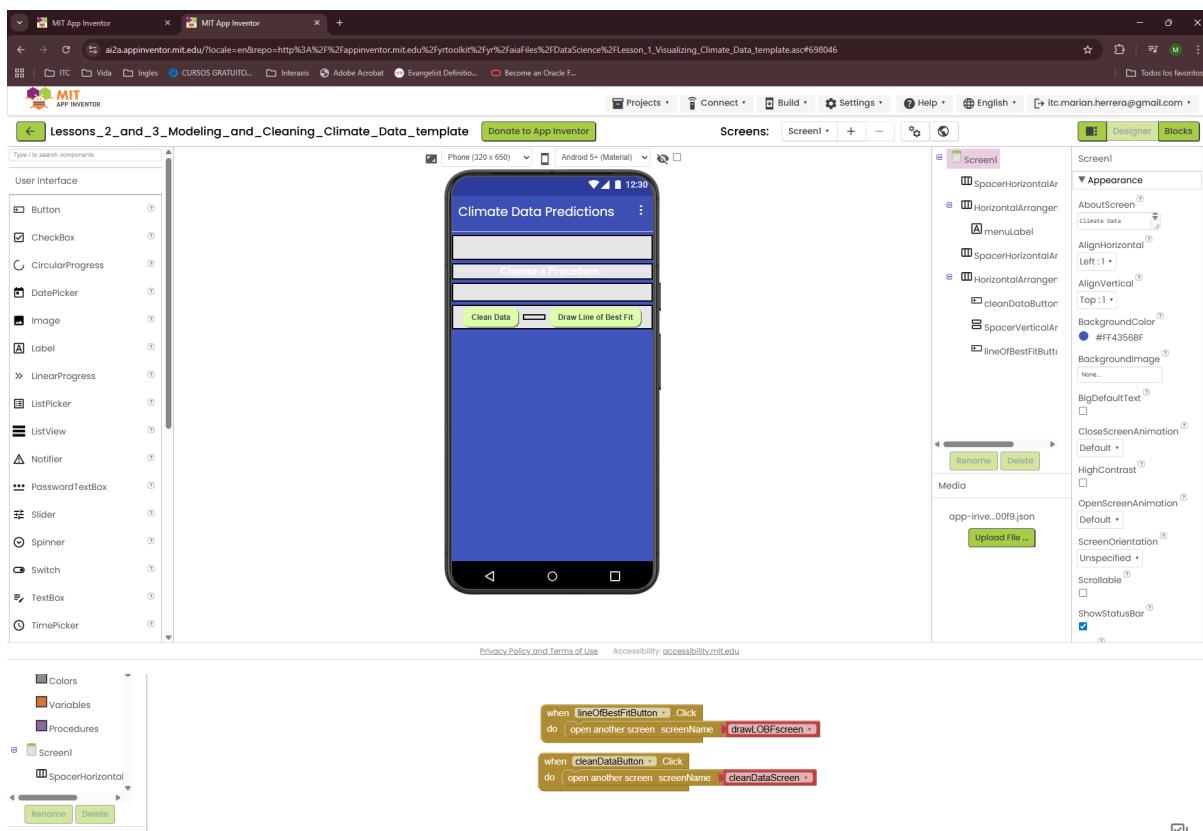
**Appearance (topChartLabel):**

- BackgroundColor: None
- FontBold: checked
- FontItalic: unchecked
- FontSize: 18
- FontTypeface: default
- HTMLFormat: unchecked
- HasMargins: checked
- Height: Automatic
- Width: Automatic
- Text:
- TextAlignment: left: 0
- TextColor: #FF30571D

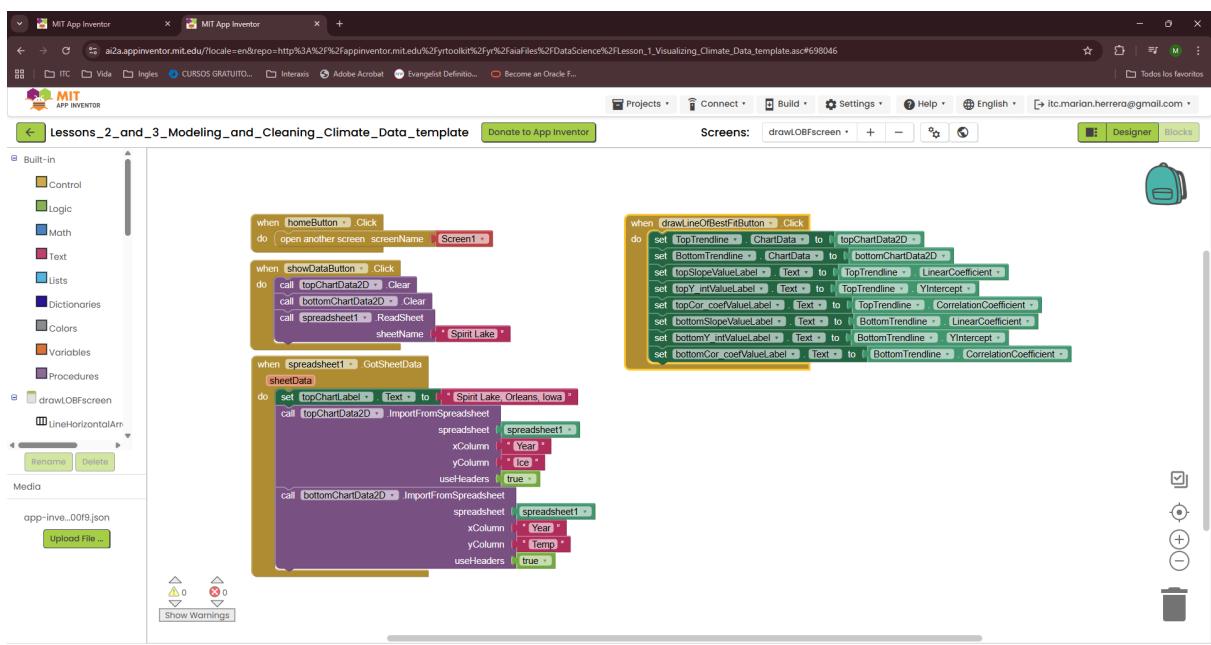
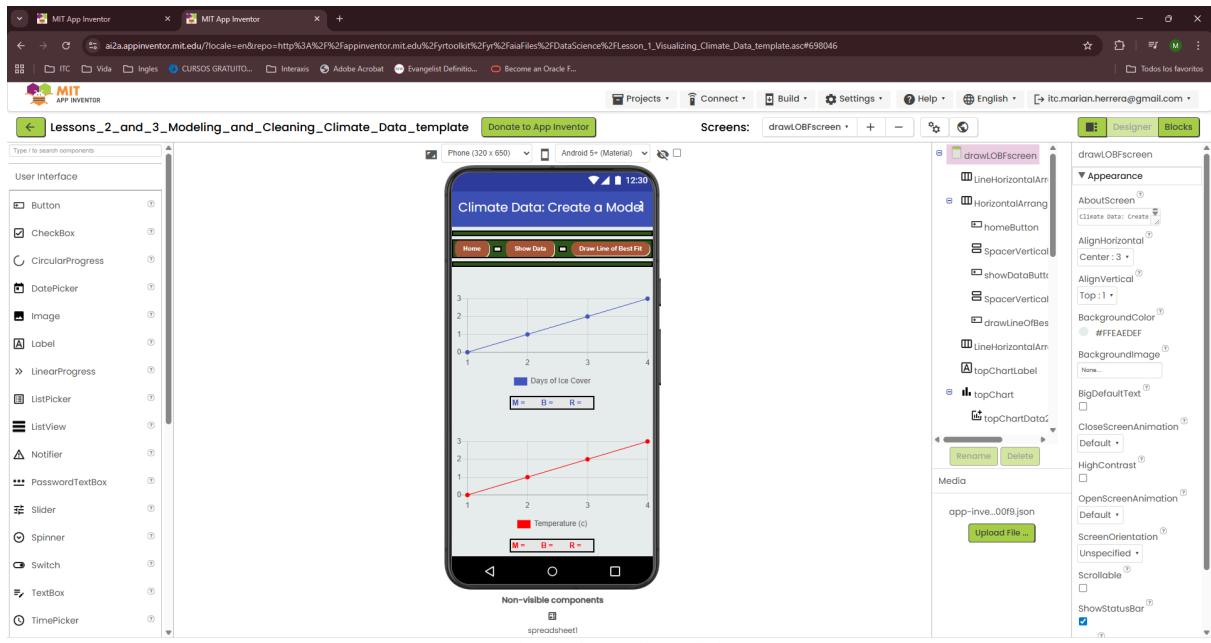


## Step 2 and 3: Modeling and Cleaning Climate data

### Initial Screen



# DrawLOBF Screen



# Clean Data Screen

The screenshot displays two side-by-side interfaces for the MIT App Inventor platform.

**Designer View (Left):** Shows the visual representation of the 'cleanDataScreen'. It features a title bar 'Climate Data: Cleaning the Data', a navigation bar with 'Home' and 'Show Data' buttons, and two buttons 'Detect Anomalies' and 'Draw Line of Best Fit'. Below these are two scatter plots. The top plot shows data points (1, 0), (2, 1), (3, 2), and (4, 3). The bottom plot shows data points (1, 0), (2, 1), (3, 2), and (4, 3) with a linear regression line. A text input field at the bottom has placeholder text 'M = B = R ='.

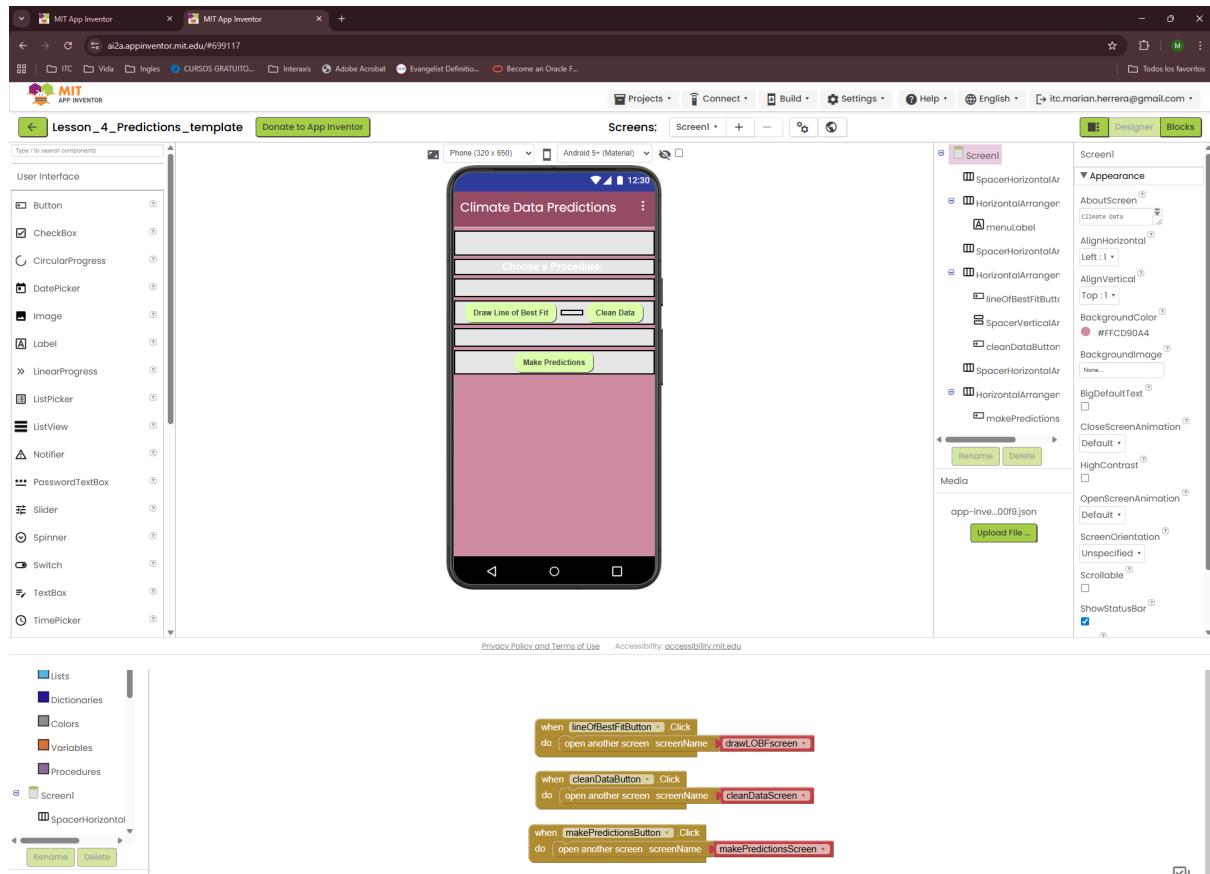
**Blocks View (Right):** Shows the underlying logic for the 'cleanDataScreen' screen. The blocks are organized into several procedures:

- when homeButton Click:** Triggers when the home button is clicked, opening another screen named 'Screen1'.
- when showDataButton Click:** Triggers when the 'Show Data' button is clicked, clearing the charts and reading data from a spreadsheet named 'Spirit Lake'.
- when spreadsheet1 GotSheetData:** Triggers when the spreadsheet gets sheet data, importing it into 'cleanedChartData2D'.
- when drawLineOfBestFitButton Click:** Triggers when the 'Draw Line of Best Fit' button is clicked, setting the chart data to 'cleanedChartData2D'.
- when detectAnomaliesButton Click:** Triggers when the 'Detect Anomalies' button is clicked, calling 'dataCleaningChartData2D' to highlight data points and 'AnomalyDetection1' to detect anomalies in the chart data.
- when dataCleaningChartData2D EntryClick:** Triggers when a data point in the chart is selected, removing the entry from the chart data.
- when Trendline1 Updated:** Triggers when the trendline is updated, setting slope, intercept, and correlation coefficient labels based on the trendline data.

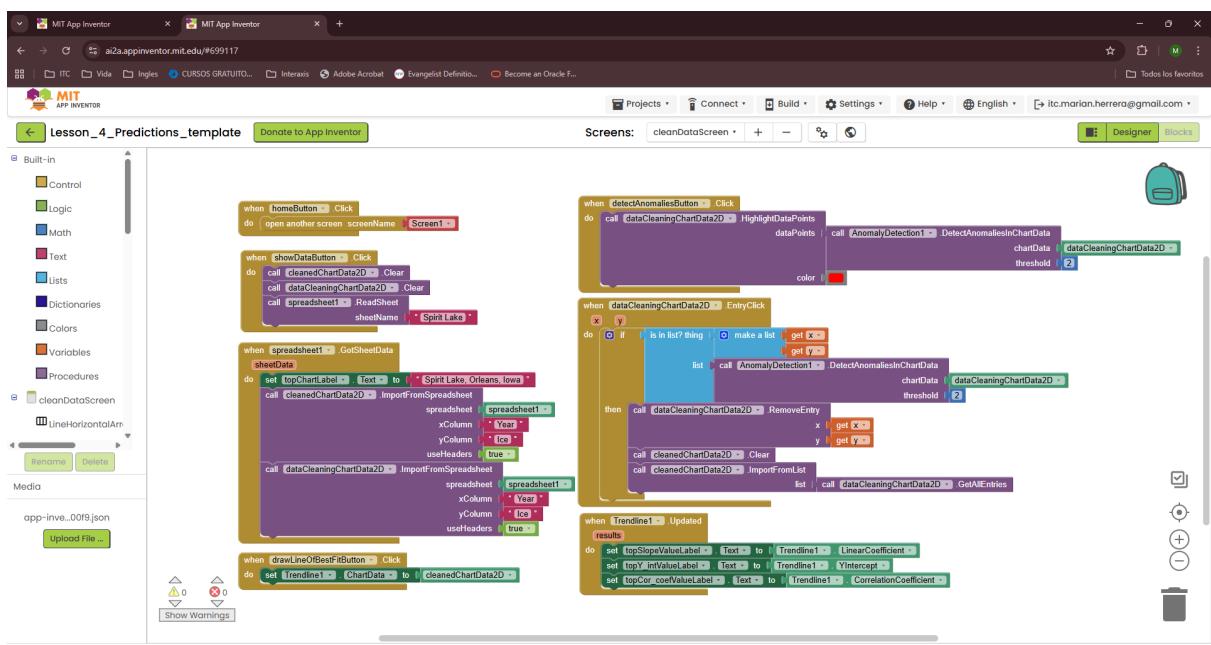
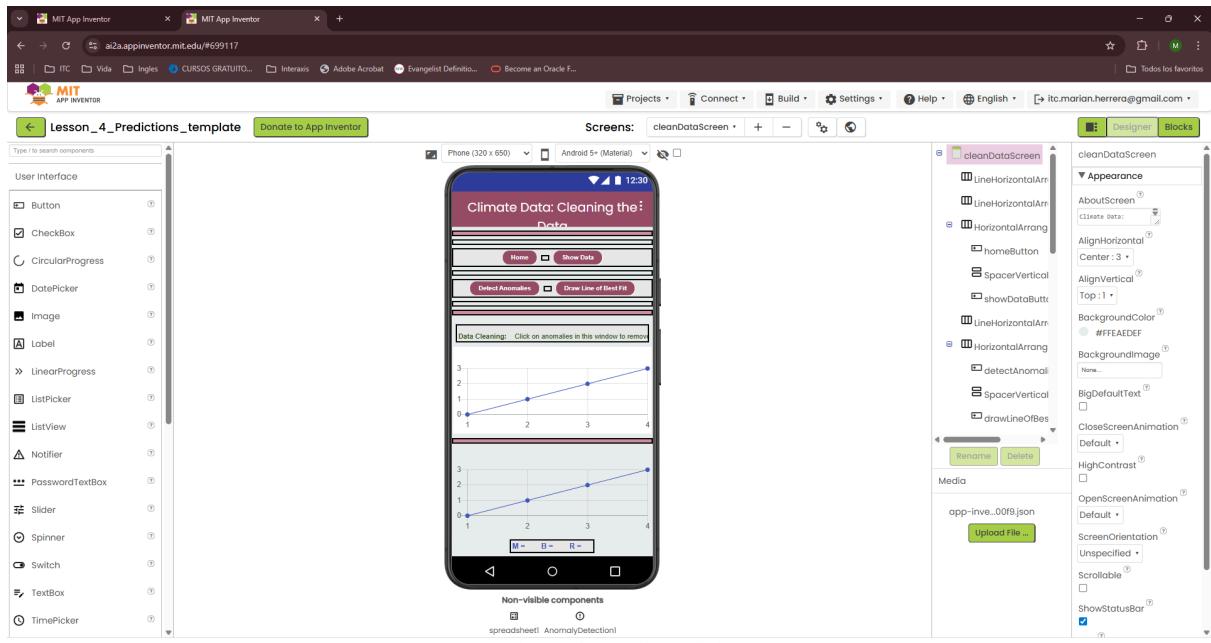
The interface also includes a component palette on the left and a properties panel on the right, both for the 'cleanDataScreen' component.

# Step 4: Compare Statistical and AI Predictions in Climate Data

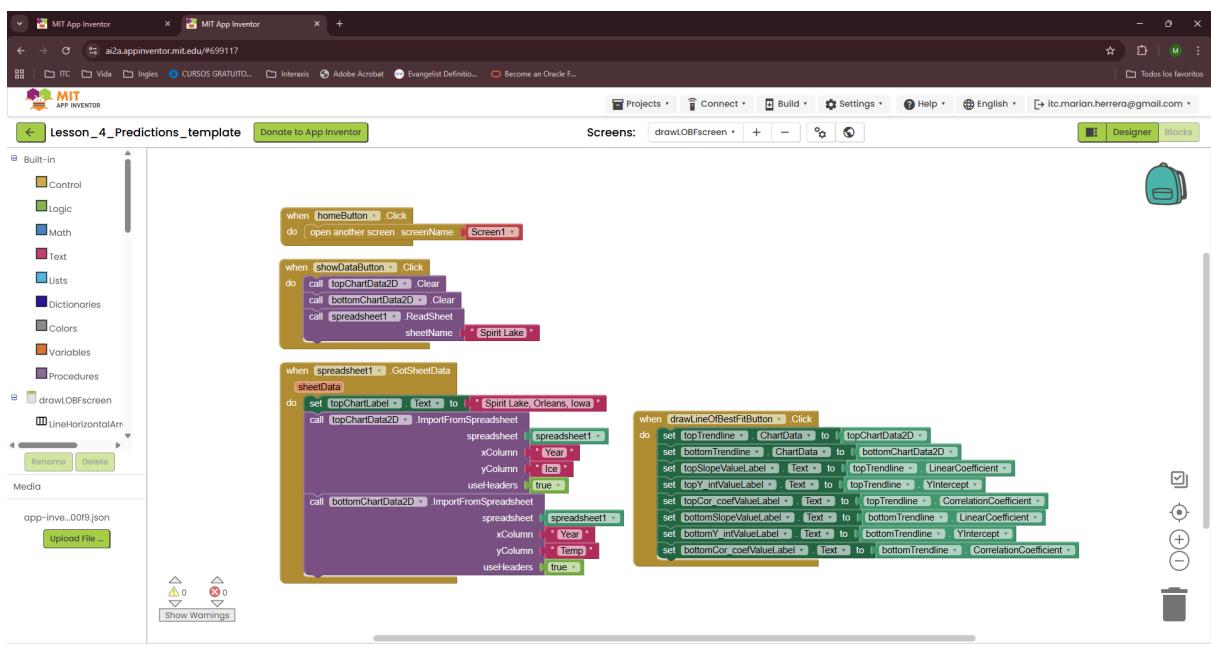
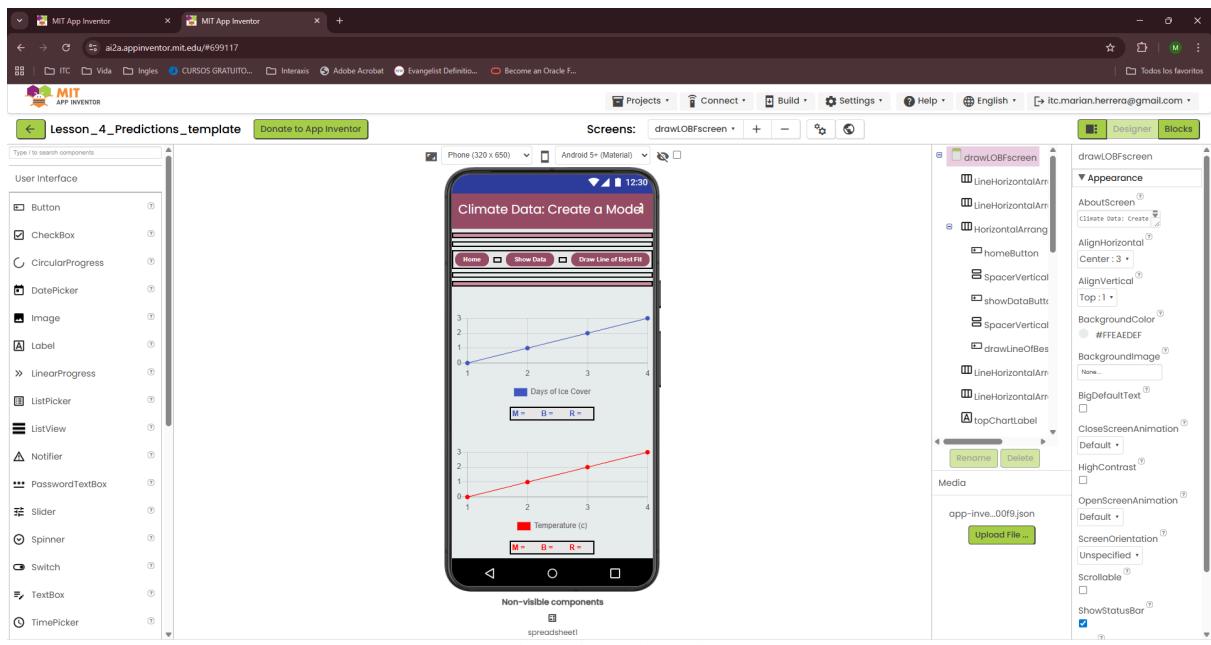
## Initial Screen



# Clean Data Screen



# DrawLOBF Screen



# Make Predictions Screen

The screenshot shows the MIT App Inventor Designer view for the 'makePredictionsScreen'. The interface includes:

- Components Panel:** On the left, it lists various UI components like Button, CheckBox, CircularProgress, etc.
- Properties Panel:** On the right, it shows properties for the current component, such as 'makePredictionsSc' under 'makePredictionsScreen'.
- Code Editor:** Below the Designer, the code blocks for the screen's logic are displayed. Key blocks include:
  - 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.GetSheetData: do set topChartLabel.Text to ["Spirit Lake, Orleans, Iowa"]
  - when Trendline1.Updated: do set SlopeValueLabel.Text to [Trendline1.LinearCoefficient]; set Y\_interceptLabel.Text to [round(Trendline1.YIntercept)]; set Corr\_coeffValueLabel.Text to [Trendline1.CorrelationCoefficient]; set X\_interceptLabel.Text to [round(Trendline1.XIntercepts)]; call dataCleaningChart1.ExtendDomainToInclude [Trendline1.XIntercepts]
  - when detectAnomaliesButton.Click: do call dataCleaningChartData2D.HighlightDataPoints [dataPoints]; call AnomalyDetection1.DetectAnomaliesInChartData [chartData]; dataCleaningChartData2D.threshold [2]
  - when dataCleaningChartData2D.EntryClick: do call dataCleaningChartData2D.RemoveEntry [x]; call cleanedChartData2D.Clear; call cleanedChartData2D.ImportFromList [list]; call dataCleaningChartData2D.GetAllEntries
  - when AIAnalysisButton.Click: do set DataCleaningChart.Visible to [false]; set DataCleaningHorizontalArrangement.Visible to [false]; set AIResponseHorizontalArrangement.Visible to [true]; call ChatBot1.Converse [question]
  - when ChatBot1.GetResponse: do set AIResponseTextBox.Text to [get.responseText]
  - when drawLineOfBestFitButton.Click: do set Trendline1.ChartData to [cleanedChartData2D]