Session 10 - Assessment Task 3

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Outline

What your App must be able to do

- Your App must be able to work with the EIF real time data system installed in the FEIT building at https://eif-research.feit.uts.edu.au/
- You may use either the HTTP or JSON interfaces
- A user of your App must be able to choose the family of sensors, and then choose the particular sensor within that family
- The user must be able to select the Start end End dates and times for collecting the data

What your App must be able to do with the data

- Your App must be able to calculate a number of statistical values related to the Data

Mean	Calculate the mean value of the Data
Median	Calculate the median value of the Data
Standard_Deviation	Calculate how variable the data is

- In addition, you will get extra marks if your App can indicate the probability that your Data will be greater or less than certain values

How your App must display the data

- Once your App has collected the Data, it must display it in a suitable plot
- Your App needs to have "Drop Down" selectors for its inputs, and
- "Sliders" or input boxes for its numerical inputs
- Your App needs to use suitable "auto-scaling" for its plots

What your App must be able to do

- Your App must do a Terminal Assignment optimization using PBIL
- It must calculate the number of Terminals and Concentrators from the size of the Cost Table
- It must allow experimentation with Learning Rate and Epoch Size
- It must test input data for usability. eg Is the number of Concentrators a binary number, and does it need to be

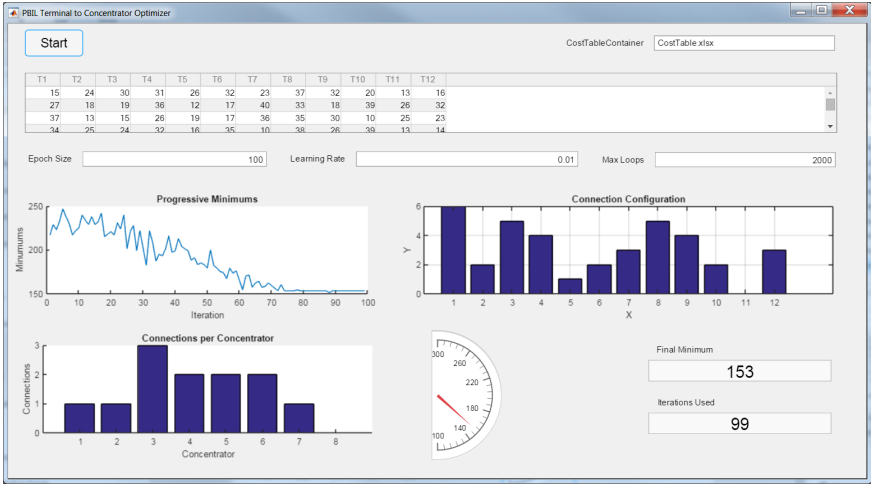
What information your App must input

- It must input a Cost Table as an Excel file
- It must input appropriate constraints
- It must input Learning Rate, and
- Epoch Size

How your App must display its outputs

- Your App must display a graph
  - Its progression to a minimum
  - Its allocation distribution of terminals to concentrators
  - Its actual configuration chosen
  - And, it selected minimum cost

A typical screen shot



What your App must be able to do

- Your App must connect to a Matlab instance on a Smartphone
- It must collect data from at least one of the sensors. Suggest Lattitude and Longitude
- It must plot the results in real time.
- It is suggested that the computer or phone be set up as a personal hotspot, and the other device connected to that

What information your App must input

- It must input such info as
  - Sampling Rate
  - IP Address,
  - etc.
- Sensor selection
- etc

How your App must display its outputs

- Your App must display a graph
  - Of the data in real time
  - Smoothed data if so required
  - Dials etc, showing the orientation, etc

Outline

Matlab App Designer

- You must use the appdesigner capability of Matlab.
- It is supported by the online version of Matlab
- It is suggested that you re-use the algorithms you have already developed for other assignments

Outline

What you have to produce

1. The App of course
2. A report of 10 to 15 pages
3. Your source code that can be executed on an instance of Matlab
4. A stand alone executable if you can (Not essential)

The marking rubric

Criteria	Passable	Competent	Excellent
Operation and performance of the App	Points 1.00000	Points 2.00000	Points 3.00000
App meets requirements	Points 1.00000	Points 2.00000	Points 3.00000
Software development process	Points 1.00000	Points 2.00000	Points 3.00000
Quality and commenting of the code	Points 1.00000	Points 2.00000	Points 3.00000
Quality and structure of the report	Points 1.00000	Points 2.00000	Points 3.00000

What is entailed in the Presentation/Demonstration

- The Group needs to make a Presentation and Demonstration to the Academic Staff which includes
- Robin will set up a schedule of 30 minute presentation slots and the venue for the Groups during Exam Week

The marking rubric

Criteria	Poor	Competent	Excellent	Outstanding
Did the App work	Points 0.00000	Points 1.00000	Points 2.00000	Points 4.00000
Did the App meet requirements	Points 0.00000	Points 1.00000	Points 2.00000	Points 4.00000
Presentation	Points 0.00000	Points 1.00000	Points 2.00000	Points 4.00000
Teamwork	Points 0.00000	Points 1.00000	Points 2.00000	Points 3.00000