B EE 572 Power System Operation

Electrical Engineering
Engineering and Mathematics Division
School of STEM

Term Project

DUE: TUESDAY, MAY 24, 2018 (7:45 PM)

MATLAB Coding:

Write a generalized MATLAB code for Newton-Raphson (NR) power flow analysis. The code takes data of any given power system as inputs and generates bus voltage magnitudes and angles as outputs.
IEEE sample test systems (14-Bus, 30-Bus, 57-Bus, 118-Bus, and 300-Bus systems) are used to demonstrate the applicability and adaptability of the written code for different power systems. You can access the data for the IEEE sample test systems at http://www2.ee.washington.edu/research/pstca/ or any other reliable sources.
The code must be generic, meaning that it should be capable of importing the data for each IEEE sample test system to run the associated NR power flow.

PowerWorld Simulation:

Use PowerWorld simulator to build the IEEE 14-Bus test system and solve the power flow using the PowerWorld NR solver.

Project Presentation:

Each student is required to present his/her project in the class. The presentation may include but is not limited to a brief procedure such as algorithms and equations in use, power flow outputs such as load flow, generator outputs, line flows, etc., as well as discussion of the MATLAB results and their comparison with the PowerWorld simulation results. The presentation should not exceed 15 minutes.

Submission Packet:

The submission packet includes MATLAB codes, PowerWorld files (both .pwb and .pwd) and PowerPoint presentation.