**In this project, we were supposed to design n-effect multiple effect evaporator using Newton Raphson method.**

**We first took the readings of a triple effect evaporator like T, A1, A2, F,….etc. We wrote 3 eqns for each evaporator – Mas tran. eqn , heat transfer equation, energy balance equation. Next, we solved mass transfer equation and heat transfer equations and reduced them together to one equation, so in all we had 6 equations- 2 for each evaporator and 6 unknowns.**

**Now, we had to find the value of these unknowns using newtons Raphson method.**

**NR eqn is Jk \* del.Xk = -fk**

**Where Jk is the jacobian matrix which is obtained by partially differentiaiting the 6 equations with 6 unknowns, one by one, and the values thus obtained were put in matrix.**

**Del.Xk was the diff in values if unknowns i.e., x2-x1, x3-x2, etc.**

**Fk were the equations .**

**We designed a code to solve the problem using functions. The process was based on iteration and we defined a tolerance value at the start of the program. When the values of the variables fell within the tolerance range, we came out of the loop, and printed the values.**

**Multiple effect Evaporator :- It is an equipment which vaporizes and condenses the solution again and again to increase the concentration of less volatile component in the solution.**

**Newton Raphson Method :-**

**It is an iterative procedure to find the values of variables by repeatedly iterating them unless they converge at a common value within tolerance.**