Week 2 – Sudoku

Create binary constrains for all combinatins

Of Value, Row, Column, and Box = Then for these combinations, constraint is that sum must be 1

Week 3

Delivery to Customer 10.3

* Have: Cost To build Depot, Cost to deliver to customer, fraction to send to customer
* Have list of 1,0 to build depot – Build[d], flow[d,c]
* Minimise:
  + For all depots d => sum(Cost to build \* Build[d]) +
  + for all depots d, cust c => sum(delivery cost [d,c] \* flow[d,c])
* ST:
  + for all depots d, cust c => Sum(flow[d, c]) <= 1
  + flow[d, c] <= 1 – can’t have more than available

Location of transmitters 12.6

* Have:
  + COMMS – Communities
  + PLACES – Locations for towers
  + POP – Population of communities
  + COST – Price to build transmitter
  + COVERED [t,c] – transmitted covers a community
* Variables:
  + BUILD[p] build transmitter at place (1,0)
* Maximise:
  + Sum(POP[c] \* COVERED[c] for each c in COMMUNITITES)
* ST:
  + Sum(COST[p] \* BUILD[p] for each t in PLACES) <= $10m
  + Foreach P in place

Week 2 – Sudoku

Week 3 – Depot Location 10.3, GSM Transmitters 12.6

Week 4 – Nurse Scheduling 14.2, CCTV 15.2

Week 5 - 9.2 Barge Loading, 9.6 Cutting Steel Bars

Week 6 – Airline Hub 11.4, Rigged Election 15.3