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| --- | --- | --- |
| **STUDENT SURNAME** | **STUDENT INITIAL** | **STUDENT NUMBER** |
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**PARTICIPANTS**

A diagram of a network

Description automatically generated

Source: DBN

Destination: JHB

Adjacent nodes to the source: DBN

DBN neighbours: PMB, RBY

Cost of PMB = cost of DBN + distance between DBN and PMB

= 0 + 89

= 89

Cost of RBY = cost of DBN + distance between DBN and RBY

= 0 + 112

= 112

PMB neighbours: RBY, HMT

Cost of HMT = cost of PMB + distance between PMB and HMT

= 89 + 209

= 298

Cost of RBY = cost of PMB + distance between PMB and RBY

= 89 + 70

= 159

159> 112

RBY neighbours: HMT, VRT

Cost of HMT = cost of RBY + distance between RBY and HMT

= 112 + 110

= 222

298>222

Cost of VRT = cost of RBY + distance between RBY and VRT

= 112 + 106

= 218

HMT neighbours: JHB, VRT

Cost of JHB = cost of HMT + distance between HMT and JHB

= 222 + 210

= 432

Cost of VRT = cost of HMT + distance between HMT and VRT

= 222 + 41

= 261

VRT neighbours: HMT, JHB

Cost of JHB = cost of VRT+ distance between VRT and JHB

= 218 + 106

= 324

432 > 324

Cost of HMT = cost of VRT + distance between VRT and HMT

= 218 +41

= 259

|  |  |  |
| --- | --- | --- |
| NODE | SHORTEST DISTANCE | PREVIOUS |
| DBN | 0 |  |
| HMT | 298 222 | PMB RBY |
| JHB | 432 324 | HMT VRT |
| PMB | 89 | DBN |
| RBY | 112 | DBN |
| VRT | 218 | RBY |



Therefore, The shortest path from DBN to JHB is DBN 🡪RBY🡪VRT🡪JHB with the cost of 324