Sum *A* (key c1)

Min *A* (key c1)

Basetable *A*

Delta *A* =

|  |  |  |
| --- | --- | --- |
| rk | c1 | c2 |
| k1 | x1 | 20 |
| k2 | x1 | 30 |
| k3 | x2 | 10 |
| k4 | x2 | 35 |
| k5 | x3 | 80 |

|  |  |  |
| --- | --- | --- |
| rk | c1 | c2 |
| k1 | 🡪 x1 | 🡪 20 |
| k2 | 🡪 x1 | 🡪 30 |
| k3 | 🡪 x2 | 50 🡪 10 |
| k4 | x3 🡪 x2 | 15 🡪 35 |
| k5 | 🡪 x3 | 55 🡪 80 |

|  |  |
| --- | --- |
| rk | csum |
| x1 | 50 |
| x2 | 45 |
| x3 | 80 |

|  |  |
| --- | --- |
| rk | cmin |
| x1 | 20 |
| x2 | 10 |
| x3 | 80 |

Join (on *A*.c1 = *B*.c1)

|  |  |  |  |
| --- | --- | --- | --- |
| rk | jk | A.c2 | B.c2 |
| k1\_l1 | x1 | 20 | 10 |
| k2\_l1 | x1 | 30 | 10 |
| k3\_l2 | x2 | 10 | 40 |
| k3\_l3 | x2 | 10 | 55 |
| k3\_l4 | x2 | 10 | 10 |
| k4\_l2 | x2 | 35 | 40 |
| k4\_l3 | x2 | 35 | 55 |
| k4\_l4 | x2 | 35 | 10 |
| k5\_l5 | x3 | 80 | 25 |

|  |  |  |
| --- | --- | --- |
| rk | c1 | c2 |
| l1 | x1 | 10 |
| l2 | x2 | 40 |
| l3 | x2 | 55 |
| l4 | x2 | 10 |
| l5 | x3 | 25 |

|  |  |  |
| --- | --- | --- |
| rk | c1 | c2 |
| f1 | 🡪 x1 | 🡪 10 |
| f2 | 🡪 x2 | 🡪 40 |
| f3 | x4 🡪 x2 | 50 🡪 55 |
| f4 | x3 🡪 x2 | 35 🡪 10 |
| f5 | 🡪 x3 | 🡪 25 |

|  |  |  |  |
| --- | --- | --- | --- |
| rk | {c1,…,cn}A | | {c1,..,cn}B |
| x1 | (k1,20),(k2,30) | | (l1,10) |
| x2 | (k3,10) | ,(k4,35) | (l2,40),(l3,55),(l4,10) |
| x3 | (k5,80) | | (l5,25) |

Reverse join (on *A*.c1 = *B*.c1)

Pre-Agg *B* (key c1)

Pre-Agg *A* (key c1)

Basetable *B*

Delta *B*