**CS614 Assignment Solution**

MASTER TABLE

|  |  |
| --- | --- |
| **Order\_ID** | **Order\_Date** |
| 100 | 2-Feb-2019 |
| 201 | 2-Feb-2019 |
| 300 | 4-Feb-2019 |
| …. | … |

**Order details Table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Detail\_ID** | **Order\_ID** | **Product\_ID** | **Product\_Quantity** | **Sale\_Amount** |
| 100 | 100 | 2 | 1 | 100 |
| 101 | 100 | 3 | 2 | 200 |
| 200 | 201 | 5 | 1 | 50 |
| 201 | 100 | 7 | 1 | 90 |
| 300 | 300 | 15 | 1 | 600 |
| 301 | 300 | 56 | 1 | 800 |
| 302 | 300 | 57 | 1 | 850 |
| …. | … | … | …. | … |

**DENORMALIZED Table**

**1) DE normalization using pre-joining**

In pre-joining all columns are moved from the master table into the detail table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Detail table | Order\_id | Order\_date | Product\_id | Prod Quality | Sale\_Amount |
| 100 | 100 | 2-Feb-2019 | 2 | 1 | 100 |
| 101 | 100 | 2-Feb-2019 | 3 | 2 | 200 |
| 200 | 201 | 2-Feb-2019 | 5 | 1 | 50 |
| 201 | 100 | 2-Feb-2019 | 7 | 1 | 90 |
| 300 | 300 | 4-Feb-2019 | 15 | 1 | 600 |
| 301 | 300 | 4-Feb-2019 | 56 | 1 | 800 |
| 302 | 300 | 4-Feb-2019 | 57 | 1 | 850 |
| … | … | … | … | … | …. |

**2) Calculate the total space used with normalization**

SOL:

Total space with normalization

= (H.S of master table \* records in master table) + (H.S of detail table \* records in detail table)

= (30 \* 10) + (60 \* 120)

= 300 + 7200

= 7.5 GB

* **Calculate the total space used after de-normalization**

Total space after de-normalization

= (H.S of detail table + H.S of master table – common join path (orde\_id)) \* (records in detail table)

= (60 + 30 - 10) \* 120

= 80 \* 120

=9600

9.6 GB

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