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| **Document ID:** ExAp |  | **Author:** JV148 | **Date:** 07/03/2018 | **Version:** 1 |  |
| All data items, derivable in () |  | Remove repeated data to a new relation | Remove part-key dependencies | Remove inter-data dependencies |  |
| U Normal Form | L | 1 Normal Form | 2 Normal Form | 3 Normal Form | Relations |
| application\_number | 1 | application\_number | '' | application\_number |  |
| family\_name | 1 | family\_name | '' | family\_name |  |
| given\_name | 1 | given\_name | '' | given\_name |  |
| middle\_name | 1 | middle\_name | '' | middle\_name |  |
| title\_style | 1 | title\_style | '' | title\_style |  |
| home\_address | 2 |  |  | supporting\_note |  |
| home\_postcode | 2 | application\_number | '' | middle\_name |  |
| home\_telephone\_number | 2 | address | '' | \*institute\_name |  |
| home\_email | 2 | telephone\_number | '' | course\_title |  |
| term\_time\_address | 2 | email | '' | institute\_department | APPLICANT |
| term\_time\_phone\_number | 2 | postcode | '' | course\_end\_month |  |
| term\_time\_email | 2 | term / home | '' | course\_end\_year |  |
|  |  |  |  | course\_level |  |
| supporting\_note | 1 | supporting\_note | '' | model\_of\_attendance |  |
| institute\_name | 1 | institute\_name | '' | distance? |  |
| institute\_address | 1 | institute\_name | '' | level\_of\_study |  |
| institute\_postcode | 1 | institute\_postcode | '' | modular? |  |
| course\_title | 1 | course\_title | '' | application\_date |  |
| institute\_department | 1 | institute\_department | '' | disability? |  |
| course\_end\_month | 1 | course\_end\_month | '' |  |  |
| course\_end\_year | 1 | course\_end\_year | '' | \*application\_number |  |
| course\_level | 1 | course\_level | '' | telephone\_number | APPLICANT |
|  |  |  |  | address | ADDRESS |
| model\_of\_attendance | 1 | model\_of\_attendance | '' | email |  |
| distance? | 1 | distance? | '' | term / home |  |
|  |  |  |  |  |  |
| level\_of\_study | 1 | level\_of\_study | '' | institute\_name |  |
| modular? | 1 | modular? | '' | institute\_address | INSTITUTE |
| application\_date | 1 | application\_date | '' | institute\_postcode |  |
| disability? | 1 | disability? | '' |  |  |

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| All data items, derivable in () |  | Remove repeated data to a new relation | Remove part-key dependencies | Remove inter-data dependencies |  |
| U Normal Form | L | 1 Normal Form | 2 Normal Form | 3 Normal Form | Relations |
| order number | 1 | order\_number | order\_number | order\_number | ORDER |
| customer\_name | 1 | customer\_name | customer\_name | customer\_code\* | order\_number |
| customer\_address | 1 | customer\_address | customer\_address | delivery\_name | customer\_code\* |
| customer\_post\_code | 1 | customer\_post\_code | customer\_post\_code | delivery\_address | delivery\_name |
| delivery\_name | 1 | delivery\_name | delivery\_name | (goods\_total) | delivery\_address |
| delivery\_address | 1 | delivery\_address | delivery\_address | VAT\_rate | (goods\_total) |
| customer\_code | 1 | customer\_code | customer\_code | (VAT\_amount) | VAT\_rate |
| product\_ref\_num | 2 | (goods\_total) | (goods\_total) | (grand\_total) | (VAT\_amount) |
| catalogue\_page\_num | 2 | VAT\_rate | VAT\_rate | payment\_amount | (grand\_total) |
| product\_description | 2 | (VAT\_amount) | (VAT\_amount) | payment\_method | payment\_amount |
| order\_quantity | 2 | payment\_amount | payment\_amount | card\_number\* | payment\_method |
| product\_unit\_price | 2 | payment\_method | payment\_method |  | card\_number\* |
| (order\_line\_total) | 2 | card\_number | card\_number | card\_number |  |
| (goods\_total) | 1 | card\_expiry\_date | card\_expiry\_date | card\_expiry\_date | PAYMENT CARD |
| VAT\_rate | 1 | issue\_number | issue\_number | issue\_number | card\_number |
| (VAT\_amount) | 1 |  |  |  | card\_expiry\_date |
| (grand\_total) | 1 | order\_number | order\_number | customer\_code | issue\_number |
| payment\_amount | 1 | product\_ref\_num | product\_ref\_num | customer\_name |  |
| payment\_method | 1 | catalogue\_page\_num | order\_quantity | customer\_address | CUSTOMER |
| card\_number | 1 | product\_description | (order\_line\_total) | customer\_post\_code | customer\_code |
| card\_expiry\_date | 1 | order\_quantity |  |  | customer\_name |
| issue\_number | 1 | product\_unit\_price | product\_ref\_num | order number | customer\_address |
|  |  | (order\_line\_total) | catalogue\_page\_num | product\_ref\_num | customer\_post\_code |
|  |  |  | product\_description | order\_quantity |  |
|  |  |  | product\_unit\_price | (order\_line\_total) | CUSTOMER |
|  |  |  |  |  | customer\_code |
|  |  |  |  | product\_ref\_num | customer\_name |
|  |  |  |  | catalogue\_page\_num | customer\_address |
|  |  |  |  | product\_description | customer\_post\_code |
|  |  |  |  | product\_unit\_price |  |
|  |  |  |  |  | ORDER LINE |
|  |  |  |  |  | order number |
|  |  |  |  |  | product\_ref\_num |
|  |  |  |  |  | order\_quantity |
|  |  |  |  |  | (order\_line\_total) |
|  |  |  |  |  |  |
|  |  |  |  |  | PRODUCT |
|  |  |  |  |  | product\_ref\_num |
|  |  |  |  |  | catalogue\_page\_num |
|  |  |  |  |  | product\_description |
|  |  |  |  |  | product\_unit\_price |

**anything with \_numb / \_id / \_code / \_ref will be primary keys.**