**CODD’S RULES (AND EXAMPLES FROM CAR\_PARTS DATABASE)**

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**/\*Rule 1 : The information rule: All information in the database is to be represented in one and only one way, namely by values in column positions within rows of tables.\*/**

CREATE TABLE `customer\_address` (

`address\_Id` int(11) NOT NULL,

`number\_building` varchar(255) DEFAULT NULL,

`street` varchar(255) DEFAULT NULL,

`town` varchar(255) DEFAULT NULL,

`city` varchar(255) DEFAULT NULL,

`country` varchar(255) DEFAULT NULL,

`Last\_Name` varchar(50) DEFAULT NULL,

`First\_Name` varchar(50) DEFAULT NULL;

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**/\*Rule 2 : The guaranteed access rule: All data must be accessible. This rule is essentially a restatement of the fundamental requirement for primary keys. \*/**

ALTER TABLE `parts\_in\_orders`

ADD PRIMARY KEY (`Part\_in\_order\_id`),

ADD KEY `order\_id` (`order\_id`),

ADD KEY `part\_supplier\_id` (`part\_supplier\_id`);

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**/\*Rule 3 : Systematic treatment of null values: The DBMS must allow each field to remain null (or empty). \*/**

CREATE TABLE `suppliers\_address` (

`Address\_Id` int(11) NOT NULL,

`LastName` varchar(255) DEFAULT NULL,

`FirstName` varchar(255) DEFAULT NULL,

`Number\_building` varchar(255) DEFAULT NULL,

`City` varchar(255) DEFAULT NULL,

`Country` varchar(255) DEFAULT NULL

) ENGINE=MyISAM DEFAULT CHARSET=latin1;

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**/\*Rule 4 : Active online catalog based on the relational model: The system must support an online, inline, relational catalog that is accessible to authorized users by means of their regular query language. \*/**

describe 'car\_parts.\*';

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**/\*Rule 5: Comprehsive data sub-language rule.\*/**

SELECT SUM(address\_id) FROM table\_customer\_address;

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**/\* Rule 6 : The view updating rule: All views those can be updated theoretically, must be updated by the system.\*/**

CREATE customer\_address view\_name AS

SELECT address\_Id

FROM customer\_address;

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**/\*Rule 7 : High-level insert, update, and delete: The system must support set-at-a-time insert, update, and delete operators.\*/**

SELECT customer\_status.customer\_status, Customers\_status.status\_description,

FROM customer\_status

INNER JOIN status\_description

ON customer\_status=Customers\_status.status\_description;

**Rule 8 : Physical data independence: Changes to the physical level (how the data is stored, whether in arrays or linked lists etc.) must not require a change to an application based on the structure.**

???? (no answer)!!

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**/\*Rule 9 : Logical data independence: Changes to the logical level (tables, columns, rows, and so on) must not require a change to an application based on the structure.\*/**

?? (lost answer)!!

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**/\*Rule 10 : Integrity independence: Integrity constraints must be specified separately from application programs and stored in the catalog.\*/**

ALTER TABLE `cars`

ADD PRIMARY KEY (`car\_id`),

ADD KEY `car\_manufacturer\_nr` (`car\_manufacturer\_nr`);