<epam>

Relational Model

Relational Databases Basics

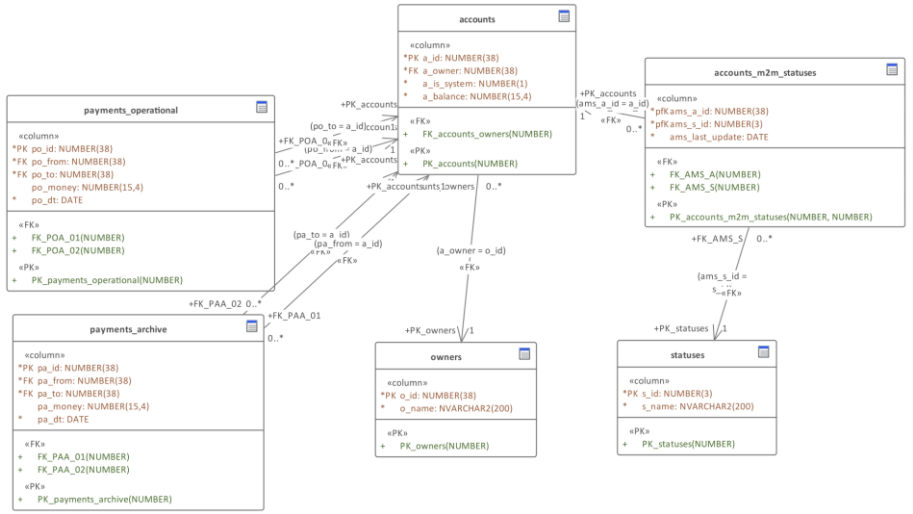
TRAINING

CENTER

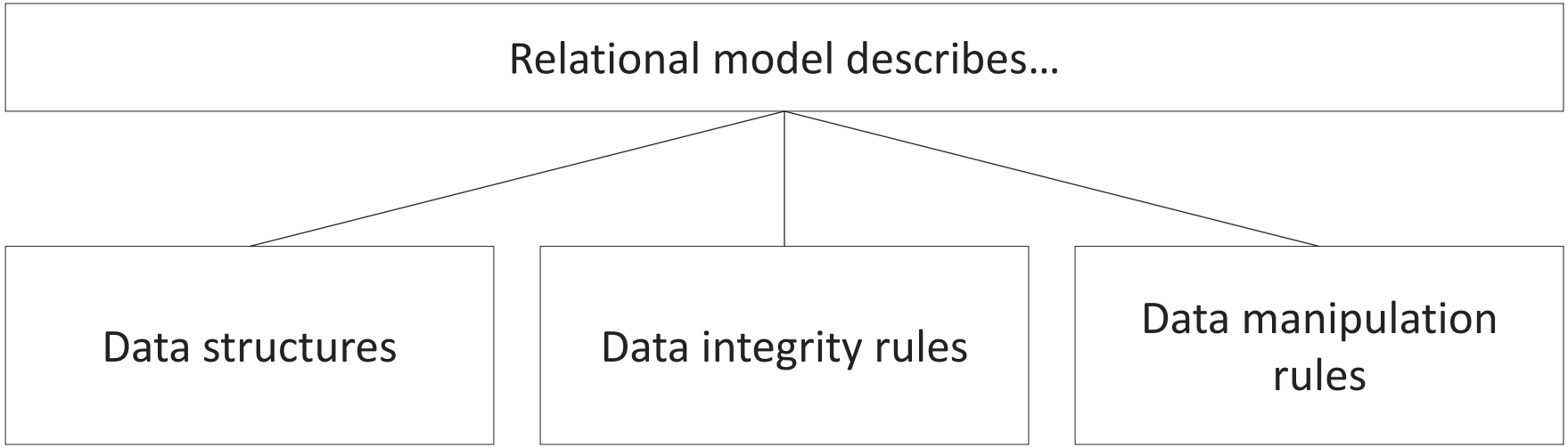
<epam>

Read and remember!

Relational Model – data model whose structure is based on a set of relations. Introduced in 1969 by Edgar F. Codd.

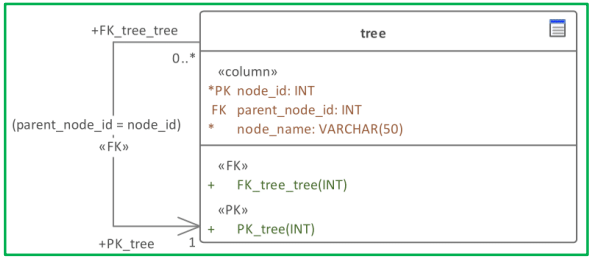


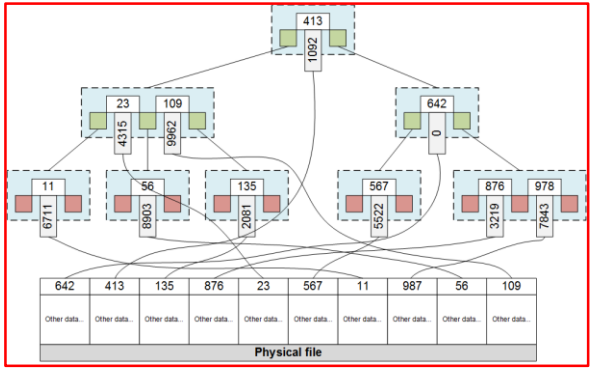
Three aspects of relational model



Two major facts to consider

Relational model is a **logical**, not a physical one





Relational model supports both declarative and imperative approaches

```
CREATE TABLE IF NOT EXISTS `news` (
  `n_uid` int(11) NOT NULL AUTO_INCREMENT,
  `n_parent` int(11) NOT NULL,
  `n_dt` int(11) NOT NULL,
  `n_header` text NOT NULL,
  `n_text` text NOT NULL,
  PRIMARY KEY (`n_uid`),
  KEY `n_parent` (`n_parent`),
  KEY `n_dt` (`n_dt`)
) ENGINE=InnoDB  DEFAULT CHARSET=utf8
```

```
CREATE TRIGGER `upd_date_ai` AFTER INSERT ON `news`
 FOR EACH ROW BEGIN
  DECLARE old_last_date int;
  SET old_last_date = (SELECT `nr_last_date`
   FROM `news_rubrics` WHERE
`nr_uid`=NEW.`n_parent`);
   IF old_last_date < NEW.`n_dt`
    THEN
     UPDATE `news_rubrics`
     SET `nr_last_date` = NEW.`n_dt`
      WHERE `nr_uid`=NEW.`n_parent`;
   END IF;
 END
```

Relational model pros and cons

Pros	Cons
RM is based on a simple set of basic structures	Relational databases require a lot of memory and CPU power
RM uses strict mathematical approaches	RM is hard to deal with in case of large databases
RM implies independency from internal structures	Some structures (trees, graphs and so on) are hard to implement in RM

But still…

For 50+ years RM remains the most common approach for database design

Most databases today are relational ones

Relational DBMS become more and more powerful

There are no reasons to think that RM will “retire” in the foreseeable future

<epam>

Relational Model

Relational Databases Basics

TRAINING

CENTER

<epam>