|  |  |  |  |
| --- | --- | --- | --- |
| **Übungsprotokoll**  **INSY - Informationssysteme** | | | |
|  | **Übungsdatum:**  KW 40/2021 –  KW 41/2021 | **Klasse:**  3AHIT | **Name:**  Felix Schneider |
| **Abgabedatum:**  11.10.2021 | **Gruppe:**  INSY\_2 | **Note:** |
| **Leitung:**  DI (FH) Alexander MESTL | **Mitübende:**  - | | |
| **Übungsbezeichnung**:  MySQL Radwerkstatt + Süßigkeitenfabrik - Modell | | | |

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# Aufgabenstellung

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Automatisch generierte Beschreibung

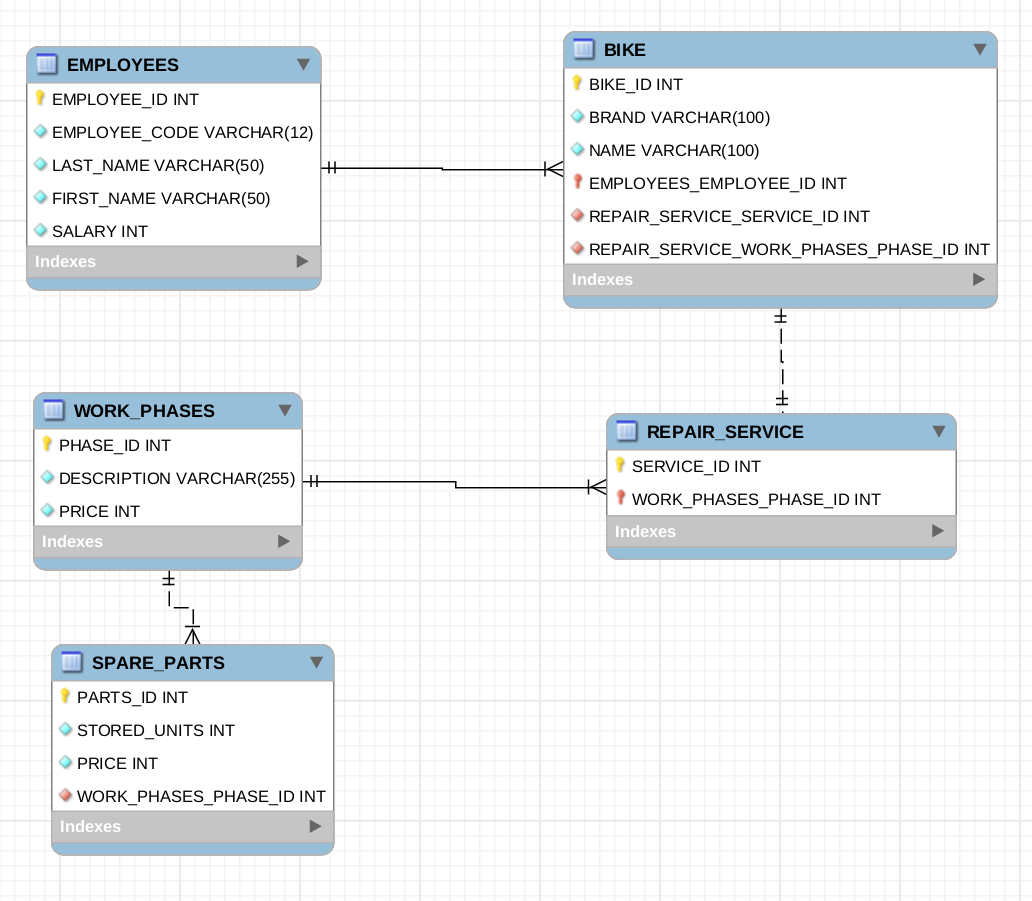
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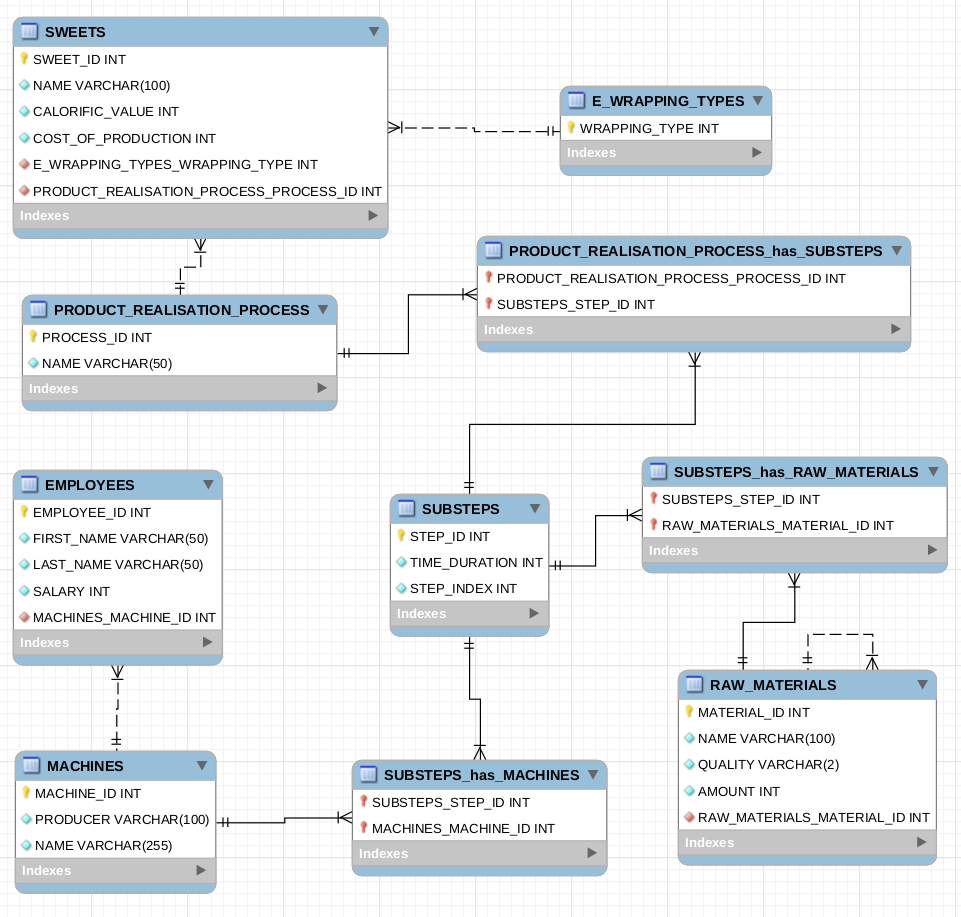
Automatisch generierte Beschreibung

# Theoretische Grundlagen

* siehe Datenmodellierung Informationssysteme – Dipl.-Ing. Msc. Paul Panhofer BSc.

# Ergebnisse





# Code

## Radwerkstatt

-- MySQL Script generated by MySQL Workbench

-- Mo 11 Okt 2021 18:29:42 CEST

-- Model: New Model    Version: 1.0

-- MySQL Workbench Forward Engineering

SET @OLD\_UNIQUE\_CHECKS=@@UNIQUE\_CHECKS, UNIQUE\_CHECKS=0;

SET @OLD\_FOREIGN\_KEY\_CHECKS=@@FOREIGN\_KEY\_CHECKS, FOREIGN\_KEY\_CHECKS=0;

SET @OLD\_SQL\_MODE=@@SQL\_MODE, SQL\_MODE='ONLY\_FULL\_GROUP\_BY,STRICT\_TRANS\_TABLES,NO\_ZERO\_IN\_DATE,NO\_ZERO\_DATE,ERROR\_FOR\_DIVISION\_BY\_ZERO,NO\_ENGINE\_SUBSTITUTION';

-- -----------------------------------------------------

-- Schema mydb

-- -----------------------------------------------------

-- -----------------------------------------------------

-- Schema mydb

-- -----------------------------------------------------

CREATE SCHEMA IF NOT EXISTS `mydb` DEFAULT CHARACTER SET utf8 ;

USE `mydb` ;

-- -----------------------------------------------------

-- Table `mydb`.`EMPLOYEES`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`EMPLOYEES` (

  `EMPLOYEE\_ID` INT NOT NULL,

  `EMPLOYEE\_CODE` VARCHAR(12) NOT NULL,

  `LAST\_NAME` VARCHAR(50) NOT NULL,

  `FIRST\_NAME` VARCHAR(50) NOT NULL,

  `SALARY` INT NOT NULL,

  PRIMARY KEY (`EMPLOYEE\_ID`),

  UNIQUE INDEX `EMPLOYEE\_ID\_UNIQUE` (`EMPLOYEE\_ID` ASC) VISIBLE,

  UNIQUE INDEX `EMPLOYEE\_CODE\_UNIQUE` (`EMPLOYEE\_CODE` ASC) VISIBLE)

ENGINE = InnoDB;

-- -----------------------------------------------------

-- Table `mydb`.`WORK\_PHASES`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`WORK\_PHASES` (

  `PHASE\_ID` INT NOT NULL,

  `DESCRIPTION` VARCHAR(255) NOT NULL,

  `PRICE` INT NOT NULL,

  PRIMARY KEY (`PHASE\_ID`),

  UNIQUE INDEX `PHASE\_ID\_UNIQUE` (`PHASE\_ID` ASC) VISIBLE)

ENGINE = InnoDB;

-- -----------------------------------------------------

-- Table `mydb`.`REPAIR\_SERVICE`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`REPAIR\_SERVICE` (

  `SERVICE\_ID` INT NOT NULL,

  `WORK\_PHASES\_PHASE\_ID` INT NOT NULL,

  PRIMARY KEY (`SERVICE\_ID`, `WORK\_PHASES\_PHASE\_ID`),

  UNIQUE INDEX `SERVICE\_ID\_UNIQUE` (`SERVICE\_ID` ASC) VISIBLE,

  INDEX `fk\_REPAIR\_SERVICE\_WORK\_PHASES1\_idx` (`WORK\_PHASES\_PHASE\_ID` ASC) VISIBLE,

  CONSTRAINT `fk\_REPAIR\_SERVICE\_WORK\_PHASES1`

    FOREIGN KEY (`WORK\_PHASES\_PHASE\_ID`)

    REFERENCES `mydb`.`WORK\_PHASES` (`PHASE\_ID`)

    ON DELETE NO ACTION

    ON UPDATE NO ACTION)

ENGINE = InnoDB;

-- -----------------------------------------------------

-- Table `mydb`.`BIKE`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`BIKE` (

  `BIKE\_ID` INT NOT NULL,

  `BRAND` VARCHAR(100) NOT NULL,

  `NAME` VARCHAR(100) NOT NULL,

  `EMPLOYEES\_EMPLOYEE\_ID` INT NOT NULL,

  `REPAIR\_SERVICE\_SERVICE\_ID` INT NOT NULL,

  `REPAIR\_SERVICE\_WORK\_PHASES\_PHASE\_ID` INT NOT NULL,

  PRIMARY KEY (`BIKE\_ID`, `EMPLOYEES\_EMPLOYEE\_ID`),

  UNIQUE INDEX `BIKE\_ID\_UNIQUE` (`BIKE\_ID` ASC) VISIBLE,

  INDEX `fk\_BIKE\_EMPLOYEES\_idx` (`EMPLOYEES\_EMPLOYEE\_ID` ASC) VISIBLE,

  INDEX `fk\_BIKE\_REPAIR\_SERVICE1\_idx` (`REPAIR\_SERVICE\_SERVICE\_ID` ASC, `REPAIR\_SERVICE\_WORK\_PHASES\_PHASE\_ID` ASC) VISIBLE,

  CONSTRAINT `fk\_BIKE\_EMPLOYEES`

    FOREIGN KEY (`EMPLOYEES\_EMPLOYEE\_ID`)

    REFERENCES `mydb`.`EMPLOYEES` (`EMPLOYEE\_ID`)

    ON DELETE NO ACTION

    ON UPDATE NO ACTION,

  CONSTRAINT `fk\_BIKE\_REPAIR\_SERVICE1`

    FOREIGN KEY (`REPAIR\_SERVICE\_SERVICE\_ID` , `REPAIR\_SERVICE\_WORK\_PHASES\_PHASE\_ID`)

    REFERENCES `mydb`.`REPAIR\_SERVICE` (`SERVICE\_ID` , `WORK\_PHASES\_PHASE\_ID`)

    ON DELETE NO ACTION

    ON UPDATE NO ACTION)

ENGINE = InnoDB;

-- -----------------------------------------------------

-- Table `mydb`.`SPARE\_PARTS`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`SPARE\_PARTS` (

  `PARTS\_ID` INT NOT NULL,

  `STORED\_UNITS` INT NOT NULL,

  `PRICE` INT NOT NULL,

  `WORK\_PHASES\_PHASE\_ID` INT NOT NULL,

  PRIMARY KEY (`PARTS\_ID`),

  UNIQUE INDEX `PARTS\_ID\_UNIQUE` (`PARTS\_ID` ASC) VISIBLE,

  INDEX `fk\_SPARE\_PARTS\_WORK\_PHASES1\_idx` (`WORK\_PHASES\_PHASE\_ID` ASC) VISIBLE,

  CONSTRAINT `fk\_SPARE\_PARTS\_WORK\_PHASES1`

    FOREIGN KEY (`WORK\_PHASES\_PHASE\_ID`)

    REFERENCES `mydb`.`WORK\_PHASES` (`PHASE\_ID`)

    ON DELETE NO ACTION

    ON UPDATE NO ACTION)

ENGINE = InnoDB;

SET SQL\_MODE=@OLD\_SQL\_MODE;

SET FOREIGN\_KEY\_CHECKS=@OLD\_FOREIGN\_KEY\_CHECKS;

SET UNIQUE\_CHECKS=@OLD\_UNIQUE\_CHECKS;

## Süßigkeitenfabrik

-- MySQL Script generated by MySQL Workbench

-- Mo 11 Okt 2021 18:03:24 CEST

-- Model: New Model    Version: 1.0

-- MySQL Workbench Forward Engineering

SET @OLD\_UNIQUE\_CHECKS=@@UNIQUE\_CHECKS, UNIQUE\_CHECKS=0;

SET @OLD\_FOREIGN\_KEY\_CHECKS=@@FOREIGN\_KEY\_CHECKS, FOREIGN\_KEY\_CHECKS=0;

SET @OLD\_SQL\_MODE=@@SQL\_MODE, SQL\_MODE='ONLY\_FULL\_GROUP\_BY,STRICT\_TRANS\_TABLES,NO\_ZERO\_IN\_DATE,NO\_ZERO\_DATE,ERROR\_FOR\_DIVISION\_BY\_ZERO,NO\_ENGINE\_SUBSTITUTION';

-- -----------------------------------------------------

-- Schema mydb

-- -----------------------------------------------------

-- -----------------------------------------------------

-- Schema mydb

-- -----------------------------------------------------

CREATE SCHEMA IF NOT EXISTS `mydb` DEFAULT CHARACTER SET utf8 ;

USE `mydb` ;

-- -----------------------------------------------------

-- Table `mydb`.`table1`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`table1` (

)

ENGINE = InnoDB;

-- -----------------------------------------------------

-- Table `mydb`.`E\_WRAPPING\_TYPES`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`E\_WRAPPING\_TYPES` (

  `WRAPPING\_TYPE` INT NOT NULL,

  PRIMARY KEY (`WRAPPING\_TYPE`))

ENGINE = InnoDB;

-- -----------------------------------------------------

-- Table `mydb`.`PRODUCT\_REALISATION\_PROCESS`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`PRODUCT\_REALISATION\_PROCESS` (

  `PROCESS\_ID` INT NOT NULL,

  `NAME` VARCHAR(50) NOT NULL,

  PRIMARY KEY (`PROCESS\_ID`),

  UNIQUE INDEX `PROCESS\_ID\_UNIQUE` (`PROCESS\_ID` ASC) VISIBLE,

  UNIQUE INDEX `NAME\_UNIQUE` (`NAME` ASC) VISIBLE)

ENGINE = InnoDB;

-- -----------------------------------------------------

-- Table `mydb`.`SWEETS`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`SWEETS` (

  `SWEET\_ID` INT NOT NULL,

  `NAME` VARCHAR(100) NOT NULL,

  `CALORIFIC\_VALUE` INT NOT NULL,

  `COST\_OF\_PRODUCTION` INT NOT NULL,

  `E\_WRAPPING\_TYPES\_WRAPPING\_TYPE` INT NOT NULL,

  `PRODUCT\_REALISATION\_PROCESS\_PROCESS\_ID` INT NOT NULL,

  PRIMARY KEY (`SWEET\_ID`),

  UNIQUE INDEX `SWEET\_ID\_UNIQUE` (`SWEET\_ID` ASC) VISIBLE,

  UNIQUE INDEX `NAME\_UNIQUE` (`NAME` ASC) VISIBLE,

  INDEX `fk\_SWEETS\_E\_WRAPPING\_TYPES\_idx` (`E\_WRAPPING\_TYPES\_WRAPPING\_TYPE` ASC) VISIBLE,

  INDEX `fk\_SWEETS\_PRODUCT\_REALISATION\_PROCESS1\_idx` (`PRODUCT\_REALISATION\_PROCESS\_PROCESS\_ID` ASC) VISIBLE,

  CONSTRAINT `fk\_SWEETS\_E\_WRAPPING\_TYPES`

    FOREIGN KEY (`E\_WRAPPING\_TYPES\_WRAPPING\_TYPE`)

    REFERENCES `mydb`.`E\_WRAPPING\_TYPES` (`WRAPPING\_TYPE`)

    ON DELETE NO ACTION

    ON UPDATE NO ACTION,

  CONSTRAINT `fk\_SWEETS\_PRODUCT\_REALISATION\_PROCESS1`

    FOREIGN KEY (`PRODUCT\_REALISATION\_PROCESS\_PROCESS\_ID`)

    REFERENCES `mydb`.`PRODUCT\_REALISATION\_PROCESS` (`PROCESS\_ID`)

    ON DELETE NO ACTION

    ON UPDATE NO ACTION)

ENGINE = InnoDB;

-- -----------------------------------------------------

-- Table `mydb`.`SUBSTEPS`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`SUBSTEPS` (

  `STEP\_ID` INT NOT NULL,

  `TIME\_DURATION` INT NOT NULL,

  `STEP\_INDEX` INT NOT NULL,

  PRIMARY KEY (`STEP\_ID`),

  UNIQUE INDEX `STEP\_ID\_UNIQUE` (`STEP\_ID` ASC) VISIBLE)

ENGINE = InnoDB;

-- -----------------------------------------------------

-- Table `mydb`.`RAW\_MATERIALS`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`RAW\_MATERIALS` (

  `MATERIAL\_ID` INT NOT NULL,

  `NAME` VARCHAR(100) NOT NULL,

  `QUALITY` VARCHAR(2) NOT NULL,

  `AMOUNT` INT NOT NULL,

  `RAW\_MATERIALS\_MATERIAL\_ID` INT NOT NULL,

  PRIMARY KEY (`MATERIAL\_ID`),

  UNIQUE INDEX `MATERIAL\_ID\_UNIQUE` (`MATERIAL\_ID` ASC) VISIBLE,

  UNIQUE INDEX `NAME\_UNIQUE` (`NAME` ASC) VISIBLE,

  INDEX `fk\_RAW\_MATERIALS\_RAW\_MATERIALS1\_idx` (`RAW\_MATERIALS\_MATERIAL\_ID` ASC) VISIBLE,

  CONSTRAINT `fk\_RAW\_MATERIALS\_RAW\_MATERIALS1`

    FOREIGN KEY (`RAW\_MATERIALS\_MATERIAL\_ID`)

    REFERENCES `mydb`.`RAW\_MATERIALS` (`MATERIAL\_ID`)

    ON DELETE NO ACTION

    ON UPDATE NO ACTION)

ENGINE = InnoDB;

-- -----------------------------------------------------

-- Table `mydb`.`MACHINES`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`MACHINES` (

  `MACHINE\_ID` INT NOT NULL,

  `PRODUCER` VARCHAR(100) NOT NULL,

  `NAME` VARCHAR(255) NOT NULL,

  PRIMARY KEY (`MACHINE\_ID`),

  UNIQUE INDEX `MACHINE\_ID\_UNIQUE` (`MACHINE\_ID` ASC) VISIBLE,

  UNIQUE INDEX `NAME\_UNIQUE` (`NAME` ASC) VISIBLE)

ENGINE = InnoDB;

-- -----------------------------------------------------

-- Table `mydb`.`EMPLOYEES`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`EMPLOYEES` (

  `EMPLOYEE\_ID` INT NOT NULL,

  `FIRST\_NAME` VARCHAR(50) NOT NULL,

  `LAST\_NAME` VARCHAR(50) NOT NULL,

  `SALARY` INT NOT NULL,

  `MACHINES\_MACHINE\_ID` INT NOT NULL,

  PRIMARY KEY (`EMPLOYEE\_ID`),

  UNIQUE INDEX `EMPLOYEE\_ID\_UNIQUE` (`EMPLOYEE\_ID` ASC) VISIBLE,

  INDEX `fk\_EMPLOYEES\_MACHINES1\_idx` (`MACHINES\_MACHINE\_ID` ASC) VISIBLE,

  CONSTRAINT `fk\_EMPLOYEES\_MACHINES1`

    FOREIGN KEY (`MACHINES\_MACHINE\_ID`)

    REFERENCES `mydb`.`MACHINES` (`MACHINE\_ID`)

    ON DELETE NO ACTION

    ON UPDATE NO ACTION)

ENGINE = InnoDB;

-- -----------------------------------------------------

-- Table `mydb`.`PRODUCT\_REALISATION\_PROCESS\_has\_SUBSTEPS`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`PRODUCT\_REALISATION\_PROCESS\_has\_SUBSTEPS` (

  `PRODUCT\_REALISATION\_PROCESS\_PROCESS\_ID` INT NOT NULL,

  `SUBSTEPS\_STEP\_ID` INT NOT NULL,

  PRIMARY KEY (`PRODUCT\_REALISATION\_PROCESS\_PROCESS\_ID`, `SUBSTEPS\_STEP\_ID`),

  INDEX `fk\_PRODUCT\_REALISATION\_PROCESS\_has\_SUBSTEPS\_SUBSTEPS1\_idx` (`SUBSTEPS\_STEP\_ID` ASC) VISIBLE,

  INDEX `fk\_PRODUCT\_REALISATION\_PROCESS\_has\_SUBSTEPS\_PRODUCT\_REALISA\_idx` (`PRODUCT\_REALISATION\_PROCESS\_PROCESS\_ID` ASC) VISIBLE,

  CONSTRAINT `fk\_PRODUCT\_REALISATION\_PROCESS\_has\_SUBSTEPS\_PRODUCT\_REALISATI1`

    FOREIGN KEY (`PRODUCT\_REALISATION\_PROCESS\_PROCESS\_ID`)

    REFERENCES `mydb`.`PRODUCT\_REALISATION\_PROCESS` (`PROCESS\_ID`)

    ON DELETE NO ACTION

    ON UPDATE NO ACTION,

  CONSTRAINT `fk\_PRODUCT\_REALISATION\_PROCESS\_has\_SUBSTEPS\_SUBSTEPS1`

    FOREIGN KEY (`SUBSTEPS\_STEP\_ID`)

    REFERENCES `mydb`.`SUBSTEPS` (`STEP\_ID`)

    ON DELETE NO ACTION

    ON UPDATE NO ACTION)

ENGINE = InnoDB;

-- -----------------------------------------------------

-- Table `mydb`.`SUBSTEPS\_has\_MACHINES`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`SUBSTEPS\_has\_MACHINES` (

  `SUBSTEPS\_STEP\_ID` INT NOT NULL,

  `MACHINES\_MACHINE\_ID` INT NOT NULL,

  PRIMARY KEY (`SUBSTEPS\_STEP\_ID`, `MACHINES\_MACHINE\_ID`),

  INDEX `fk\_SUBSTEPS\_has\_MACHINES\_MACHINES1\_idx` (`MACHINES\_MACHINE\_ID` ASC) VISIBLE,

  INDEX `fk\_SUBSTEPS\_has\_MACHINES\_SUBSTEPS1\_idx` (`SUBSTEPS\_STEP\_ID` ASC) VISIBLE,

  CONSTRAINT `fk\_SUBSTEPS\_has\_MACHINES\_SUBSTEPS1`

    FOREIGN KEY (`SUBSTEPS\_STEP\_ID`)

    REFERENCES `mydb`.`SUBSTEPS` (`STEP\_ID`)

    ON DELETE NO ACTION

    ON UPDATE NO ACTION,

  CONSTRAINT `fk\_SUBSTEPS\_has\_MACHINES\_MACHINES1`

    FOREIGN KEY (`MACHINES\_MACHINE\_ID`)

    REFERENCES `mydb`.`MACHINES` (`MACHINE\_ID`)

    ON DELETE NO ACTION

    ON UPDATE NO ACTION)

ENGINE = InnoDB;

-- -----------------------------------------------------

-- Table `mydb`.`SUBSTEPS\_has\_RAW\_MATERIALS`

-- -----------------------------------------------------

CREATE TABLE IF NOT EXISTS `mydb`.`SUBSTEPS\_has\_RAW\_MATERIALS` (

  `SUBSTEPS\_STEP\_ID` INT NOT NULL,

  `RAW\_MATERIALS\_MATERIAL\_ID` INT NOT NULL,

  PRIMARY KEY (`SUBSTEPS\_STEP\_ID`, `RAW\_MATERIALS\_MATERIAL\_ID`),

  INDEX `fk\_SUBSTEPS\_has\_RAW\_MATERIALS\_RAW\_MATERIALS1\_idx` (`RAW\_MATERIALS\_MATERIAL\_ID` ASC) VISIBLE,

  INDEX `fk\_SUBSTEPS\_has\_RAW\_MATERIALS\_SUBSTEPS1\_idx` (`SUBSTEPS\_STEP\_ID` ASC) VISIBLE,

  CONSTRAINT `fk\_SUBSTEPS\_has\_RAW\_MATERIALS\_SUBSTEPS1`

    FOREIGN KEY (`SUBSTEPS\_STEP\_ID`)

    REFERENCES `mydb`.`SUBSTEPS` (`STEP\_ID`)

    ON DELETE NO ACTION

    ON UPDATE NO ACTION,

  CONSTRAINT `fk\_SUBSTEPS\_has\_RAW\_MATERIALS\_RAW\_MATERIALS1`

    FOREIGN KEY (`RAW\_MATERIALS\_MATERIAL\_ID`)

    REFERENCES `mydb`.`RAW\_MATERIALS` (`MATERIAL\_ID`)

    ON DELETE NO ACTION

    ON UPDATE NO ACTION)

ENGINE = InnoDB;

SET SQL\_MODE=@OLD\_SQL\_MODE;

SET FOREIGN\_KEY\_CHECKS=@OLD\_FOREIGN\_KEY\_CHECKS;

SET UNIQUE\_CHECKS=@OLD\_UNIQUE\_CHECKS;

# Kommentar

Was ist eine Singletable Vererbung (Süßigkeitenfabrik – Employee)?