KING SAUD UNIVERSITY
Information Systems Department.

IS230 Tutorial – Project Part <mark>I</mark>- Report Template
ER design and implementation

Student ID (Leader): 444100610

Student Name: ثامر الوايل

Student ID: 445102004

Student Name: محمد العجلان

Student ID: 445102162

Student Name: نواف الجليل

Student ID: 444101749

Student Name: محمد آل رشود

Student ID: 444102350
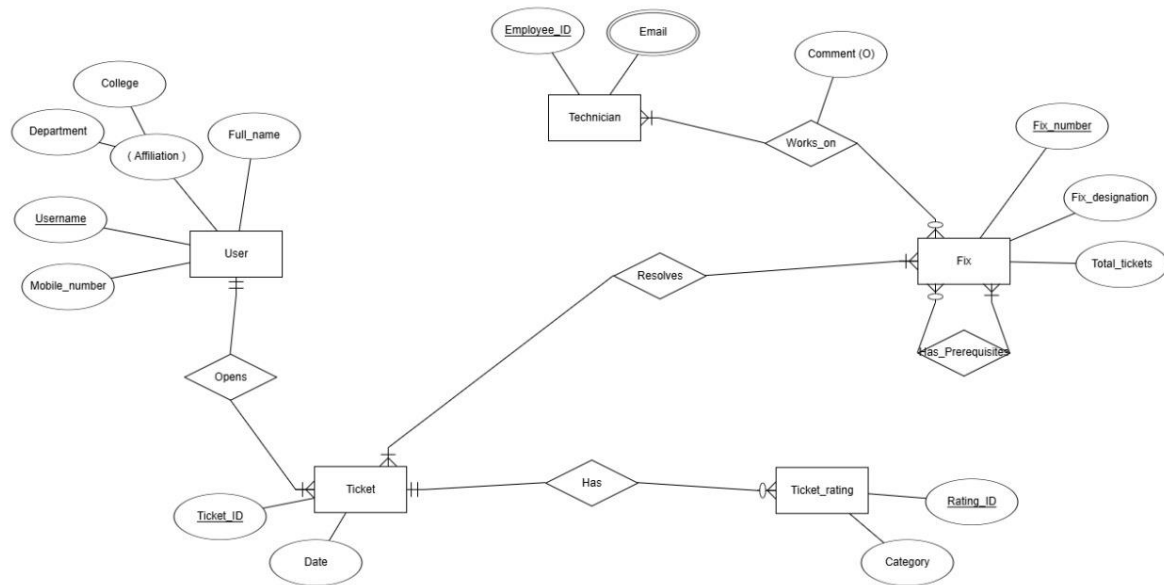
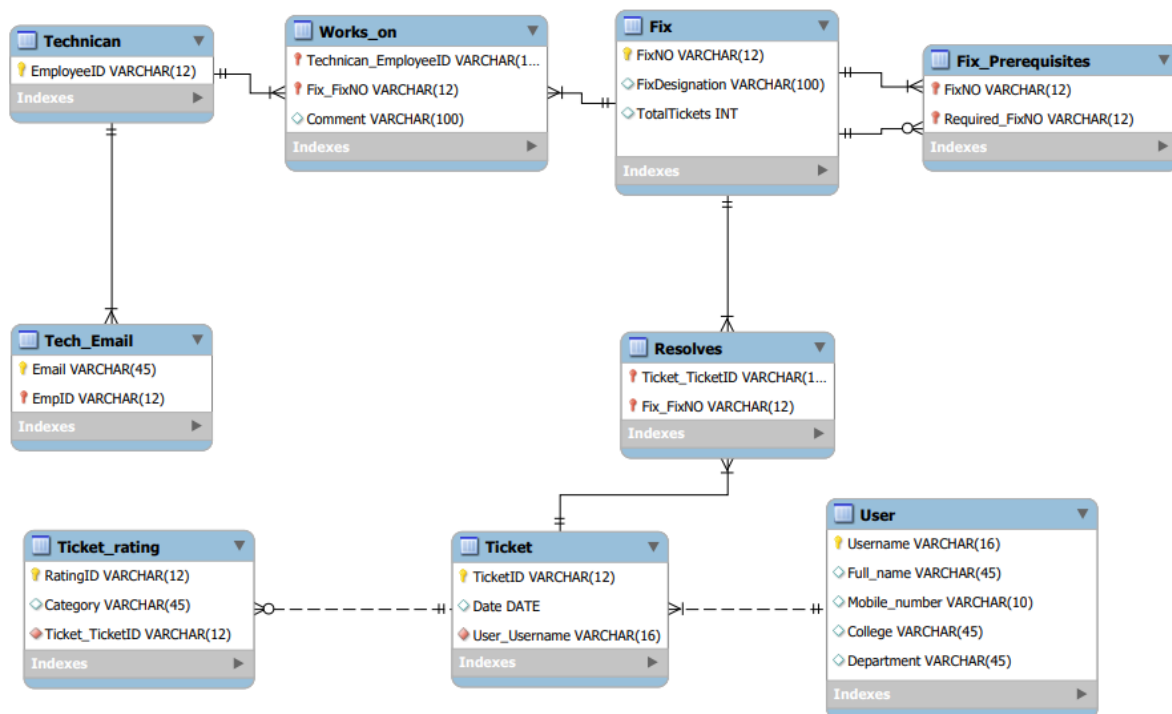**Student Name:** سعد ناصر الدوسري

Student ID: 445101358

Student Name: ريان بن مشعل

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1. ER

2. MySQL Workbench

3. SQL script to generate the Database:

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-- MySQL Script generated by MySQL Workbench
-- Fri Mar  7 17:48:52 2025
-- 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_ZER
O_DATE,ERROR_FOR_DIVISION_BY_ZERO,NO_ENGINE_SUBSTITUTION';


-- -----------------------------------------------------
-- Schema KSU_Helpdesk
-- -----------------------------------------------------

-- -----------------------------------------------------
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-- -----------------------------------------------------
CREATE SCHEMA IF NOT EXISTS KSU_Helpdesk DEFAULT CHARACTER SET utf8 ;
USE KSU_Helpdesk ;


-- -----------------------------------------------------
-- Table KSU_Helpdesk.User
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS KSU_Helpdesk.User (
  Username VARCHAR(16) NOT NULL,
  Full_name VARCHAR(45) NULL,
  Mobile_number VARCHAR(10) NULL,
  College VARCHAR(45) NULL,
  Department VARCHAR(45) NULL,
  PRIMARY KEY (Username))
ENGINE = InnoDB;



-- -----------------------------------------------------
-- Table KSU_Helpdesk.Ticket
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS KSU_Helpdesk.Ticket (
  TicketID VARCHAR(12) NOT NULL,
  Date DATE NULL,
  User_Username VARCHAR(16) NOT NULL,
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    INDEX fk_Ticket_User_idx (User_Username ASC) VISIBLE,
    PRIMARY KEY (TicketID),
    CONSTRAINT fk_Ticket_User
      FOREIGN KEY (User_Username)
      REFERENCES KSU_Helpdesk.User (Username)
      ON DELETE NO ACTION
      ON UPDATE NO ACTION)
ENGINE = InnoDB;



-- ------------------------------------------------------
-- Table KSU_Helpdesk.Ticket_rating
-- ------------------------------------------------------
CREATE TABLE IF NOT EXISTS KSU_Helpdesk.Ticket_rating (
  RatingID VARCHAR(12) NOT NULL,
  Category VARCHAR(45) NULL,
  Ticket_TicketID VARCHAR(12) NOT NULL,
  PRIMARY KEY (RatingID),
  INDEX fk_Ticket_rating_Ticket1_idx (Ticket_TicketID ASC) VISIBLE,
  CONSTRAINT fk_Ticket_rating_Ticket1
    FOREIGN KEY (Ticket_TicketID)
    REFERENCES KSU_Helpdesk.Ticket (TicketID)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;



-- ------------------------------------------------------
-- Table KSU_Helpdesk.Fix
-- ------------------------------------------------------
CREATE TABLE IF NOT EXISTS KSU_Helpdesk.Fix (
  FixNO VARCHAR(12) NOT NULL,
  FixDesignation VARCHAR(100) NULL,
  TotalTickets INT NULL,
  PRIMARY KEY (FixNO))
ENGINE = InnoDB;



-- ------------------------------------------------------
-- Table KSU_Helpdesk.Technican
-- ------------------------------------------------------
CREATE TABLE IF NOT EXISTS KSU_Helpdesk.Technican (
  EmployeeID VARCHAR(12) NOT NULL,
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  PRIMARY KEY (EmployeeID))
ENGINE = InnoDB;


-- -------------------------------------------------------
-- Table KSU_Helpdesk.Tech_Email
-- -------------------------------------------------------
CREATE TABLE IF NOT EXISTS KSU_Helpdesk.Tech_Email (
  Email VARCHAR(45) NOT NULL,
  EmpID VARCHAR(12) NOT NULL,
  INDEX EmpID_idx (EmpID ASC) VISIBLE,
  PRIMARY KEY (Email, EmpID),
  CONSTRAINT FK_EmpID
    FOREIGN KEY (EmpID)
    REFERENCES KSU_Helpdesk.Technican (EmployeeID)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;



-- -------------------------------------------------------
-- Table KSU_Helpdesk.Resolves
-- -------------------------------------------------------
CREATE TABLE IF NOT EXISTS KSU_Helpdesk.Resolves (
  Ticket_TicketID VARCHAR(12) NOT NULL,
  Fix_FixNO VARCHAR(12) NOT NULL,
  PRIMARY KEY (Ticket_TicketID, Fix_FixNO),
  INDEX fk_Ticket_has_Fix_Fix1_idx (Fix_FixNO ASC) VISIBLE,
  INDEX fk_Ticket_has_Fix_Ticket1_idx (Ticket_TicketID ASC) VISIBLE,
  CONSTRAINT fk_Ticket_has_Fix_Ticket1
    FOREIGN KEY (Ticket_TicketID)
    REFERENCES KSU_Helpdesk.Ticket (TicketID)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT fk_Ticket_has_Fix_Fix1
    FOREIGN KEY (Fix_FixNO)
    REFERENCES KSU_Helpdesk.Fix (FixNO)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;


-- -------------------------------------------------------
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-- Table KSU_Helpdesk.Works_on
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS KSU_Helpdesk.Works_on (
  Technican_EmployeeID VARCHAR(12) NOT NULL,
  Fix_FixNO VARCHAR(12) NOT NULL,
  Comment VARCHAR(100) NULL,
  PRIMARY KEY (Technican_EmployeeID, Fix_FixNO),
  INDEX fk_Technican_has_Fix_Fix1_idx (Fix_FixNO ASC) VISIBLE,
  INDEX fk_Technican_has_Fix_Technican1_idx (Technican_EmployeeID ASC) VISIBLE,
  CONSTRAINT fk_Technican_has_Fix_Technican1
    FOREIGN KEY (Technican_EmployeeID)
    REFERENCES KSU_Helpdesk.Technican (EmployeeID)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT fk_Technican_has_Fix_Fix1
    FOREIGN KEY (Fix_FixNO)
    REFERENCES KSU_Helpdesk.Fix (FixNO)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION)
ENGINE = InnoDB;



-- -----------------------------------------------------
-- Table KSU_Helpdesk.Fix_Prerequisites
-- -----------------------------------------------------
CREATE TABLE IF NOT EXISTS KSU_Helpdesk.Fix_Prerequisites (
  FixNO VARCHAR(12) NOT NULL,
  Required_FixNO VARCHAR(12) NOT NULL,
  PRIMARY KEY (FixNO, Required_FixNO),
  INDEX fk_Fix_has_Fix_Fix2_idx (Required_FixNO ASC) VISIBLE,
  INDEX fk_Fix_has_Fix_Fix1_idx (FixNO ASC) VISIBLE,
  CONSTRAINT fk_Fix_has_Fix_Fix1
    FOREIGN KEY (FixNO)
    REFERENCES KSU_Helpdesk.Fix (FixNO)
    ON DELETE NO ACTION
    ON UPDATE NO ACTION,
  CONSTRAINT fk_Fix_has_Fix_Fix2
    FOREIGN KEY (Required_FixNO)
    REFERENCES KSU_Helpdesk.Fix (FixNO)
    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;
```