**Vincolo emailFormat**

-- Implementazione del vincolo emailFormat

ALTER TABLE Email ADD CONSTRAINT emailFormat CHECK ( email LIKE '\_%@\_%.\_\_%')

**Vincoli passwordLen e usernameLen**

-- Implementazione dei vincoli passwordLen e usernameLen

ALTER TABLE R\_User

ADD CONSTRAINT passwordLen CHECK (LENGTH(password)>7),

ADD CONSTRAINT usernameLen CHECK (LENGTH(nickname)>2)

**Vincolo uniqueMainAddress**

-- Implementazione del vincolo uniqueMainAddress

CREATE FUNCTION uniqueMainAddress()

RETURNS TRIGGER AS $uniqueMainAddress$

BEGIN

IF NEW.main = true AND NEW.contactID IN (SELECT contactID FROM AssignedAddress WHERE main = true) THEN

RAISE EXCEPTION 'A main Address for this contact already exists!';

END IF;

RETURN NEW;

END;

$uniqueMainAddress$ LANGUAGE plpgsql;

CREATE TRIGGER uniqueMainAddress

BEFORE INSERT OR UPDATE ON AssignedAddress

FOR EACH ROW

EXECUTE PROCEDURE uniqueMainAddress();

**Vincolo checkContactNumbers**

-- Implementazione del vincolo checkContactNumbers

CREATE FUNCTION checkContactNumbers()

RETURNS TRIGGER AS $checkContactNumbers$

DECLARE

ConID integer := OLD.contactID;

BEGIN

IF NOT EXISTS (SELECT \*

FROM AssignedPhone as AP, PhoneNumber as PN

WHERE AP.phoneNumber = PN.phoneNumber and ConID = AP.contactID and PN.phoneType = 'MOBILE')

OR NOT EXISTS (SELECT \*

FROM AssignedPhone as AP, PhoneNumber as PN

WHERE AP.phoneNumber = PN.phoneNumber and ConID = AP.contactID and PN.phoneType = 'LANDLINE')

THEN

RAISE EXCEPTION 'A contact must have at least a landline number and a mobile number';

END IF;

RETURN NEW;

END;

$checkContactNumbers$ LANGUAGE plpgsql;

CREATE TRIGGER checkContactNumbers

AFTER DELETE OR UPDATE ON AssignedPhone

FOR EACH ROW

EXECUTE PROCEDURE checkContactNumbers();

**Vincolo distinctEmail**

-- Implementazione del vincolo distinctEmail

ALTER TABLE Email

ADD CONSTRAINT distinctEmail UNIQUE (email, contactID)

**Vincolo checkCallType**

-- Implementazione del vincolo checkCallType

ALTER TABLE PhoneCall

ADD CONSTRAINT checkCallType CHECK (callType in ('SENT', 'ENTERED', 'MISSED'))