

AUTOSTRADA

- NAME (OP3.)
- CODICE
- ESTREMO 1
- 2

TARIFFA

- IMPORTO
- TIPO VEICULO

UTENTE

- NOME
- COGNOME
- CF
- IBAN


CASELLO

- AUTOSTRADA
- CODICE

TAGLIANDO \leftarrow VIRTUALE

- CODICE
- TIPO VEICULO
- CASE/NO
- DATA

TUTOR

- AUTOSTRADA
- LUOGO INIZIO
-  FINE
- SENS₅

TELEPASS

- UTENTE
- TIPO VEICULO

Aug 7.

VINCENZI

AUTOSTRADA

$$\forall A, I, F: \text{AUTOSTRADA}(A) \wedge \text{INIZIO}(A, I) \wedge \text{FINE}(A, F) \\ \rightarrow I \neq F$$

CASE-226

4. c, l CASELLI(c) \cap DISTANZA(c, l) \rightarrow
5. A USCITA(A, c) \cap (INIZIO(A, l) \cup FINE(A, l))

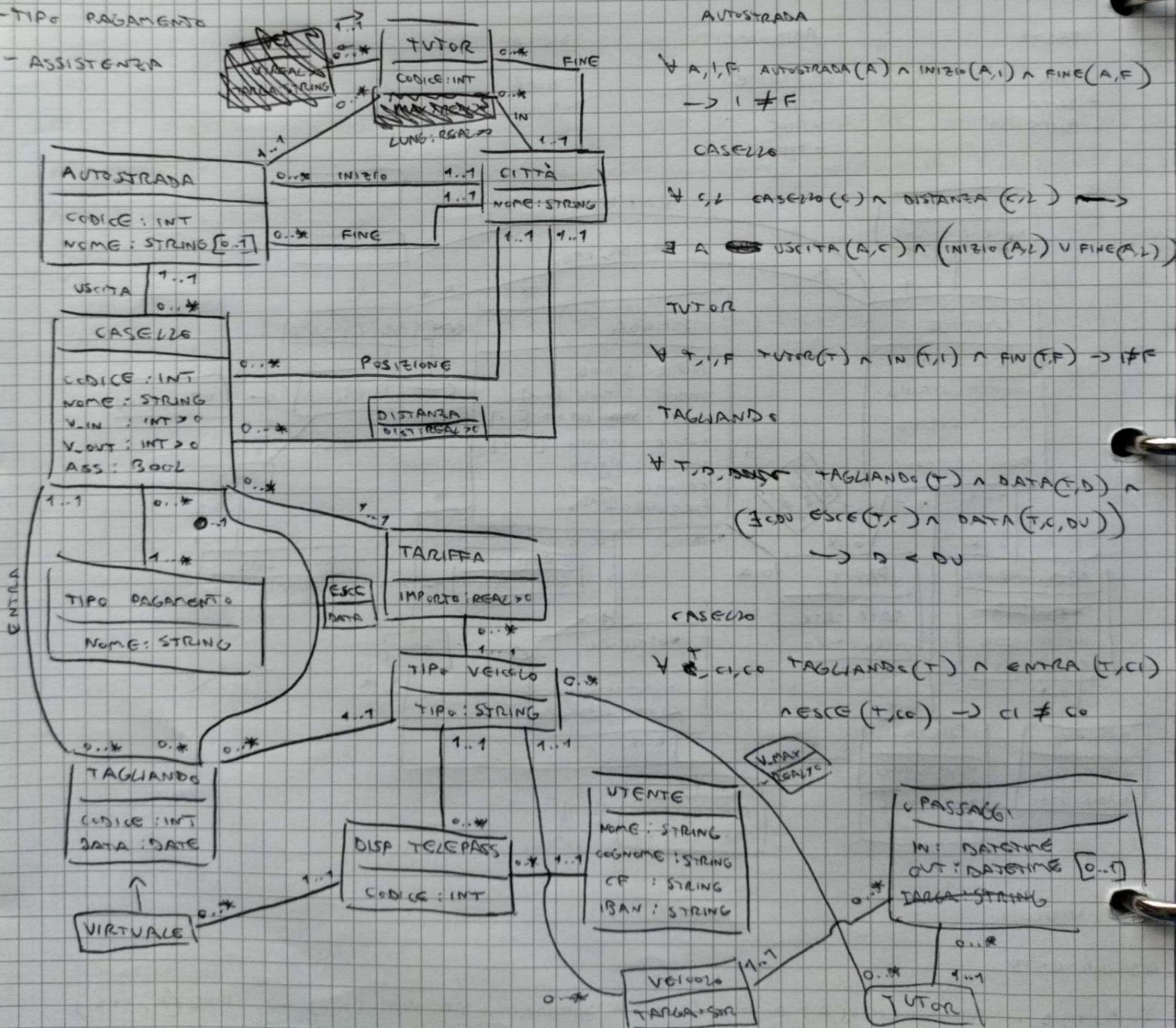
TUTOR

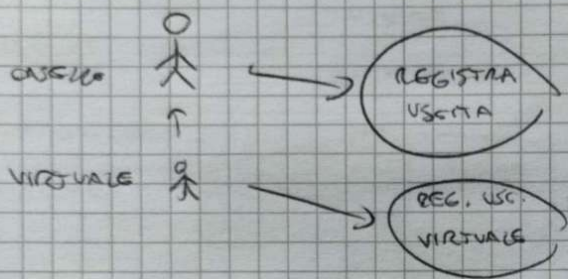
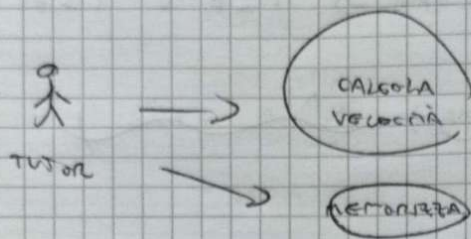
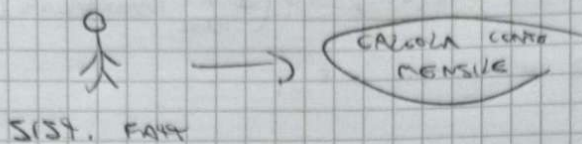
$$\forall T, I, F \text{ Tutor}(T) \wedge \text{IN}(T, I) \wedge \text{FIN}(T, F) \rightarrow I \neq F$$

TAGWANDS

4 T, D, ESCE TAGLIANDO $(T) \wedge \text{DATA}(T, D) \wedge$
 $(\exists DU \text{ ESCE}(T, F) \wedge \text{DATA}(T, C, DU))$
 $\rightarrow D < DU$

CASE 20

$$\forall c_1, c_0 \text{ TAGLIANDO}(T) \wedge \text{ENTRA}(T, c_1) \\ \wedge \text{ESCE}(T, c_0) \rightarrow c_1 \neq c_0$$




REG, USCITA (C: CASELLA, T: TAGLIANDO)

VELOCITÀ (T: TUTOR, ~~VELOCITÀ~~ ^{VIRIVALE}): REAL > 0

INIZIA - CONTROLLO (T: TUTOR, ~~VELOCITÀ~~ ^{VIRIVALE}): ~~PASSAGGIO~~

~~FINISCI~~ - CONTROLLO (~~VELOCITÀ~~ ^{VIRIVALE}, P: PASSAGGIO): ~~PASSAGGIO~~

CONTO (U: UTENTE, M: MESE, A: ANNO): ~~INSERISCI~~ ^{CASELLA CASELLA} (~~STRING~~ ^{STRING}, ~~STRING~~ ^{STRING}, TIME, TIME, REAL > 0) [OUT]

INIZIA

PRE: ~~(T, TIRANTE) X MAX~~

POST: NUOVA OGG T DEL DOM, T.C.

PASSAGGIO (T) \wedge IN (T, ADESSO) \wedge V.P (T, V) \wedge P.T (T, T)

FINISCI

PRE: $\exists X$ PASSAGGIO (X) \wedge V.P (X, V) \wedge T.P (X, T) \wedge (\exists o. OUT (X, o))

POST:

SIA ~~MAX~~ ^{MAX} TC: V.MAX (T, TP, MAX) \wedge T.V (TP, V)

IF MAX ~~VEL~~ ^{VEL} OUT (P, ADESSO) ~~ELIM~~ ^{ELIM} RIMUOVERI P DAL DOMINIO

CONTO

RES $\exists \{ (CIN, COVT, TIN, TOVT, IMP) \mid \text{CASSELLA} \begin{smallmatrix} (CIN) \\ (COVT) \end{smallmatrix} \wedge CIN \neq COVT \wedge \text{ENTRA}(T, CIN) \wedge \text{ESCE}(T, COVT) \wedge$
 $\text{VIRTUALE}(T) \wedge \text{ASS}(T, D) \wedge \text{DI}(D, U) \wedge \text{DATA}(T, D) \wedge \text{DMESE} = M$
 $\wedge \text{DANNO} = A \wedge \text{TIN} \neq D. \text{CAPITOLO} \wedge \text{DATA}(T, COVT, TOVT) \wedge$
 $\text{IMP} = \text{CALCOLA_IMPORTO}(CIN, COVT, TP) \} \wedge \text{DT}(D, TP)$

VELOCITÀ

PRE: $\exists x \text{ PASSAGGIO}(x) \wedge \text{T.P.}(x, T)$

POST:

~~START TO FINISH~~

SIA LEN $\leftarrow \text{LUNG}(T, \text{LEN})$

~~PREV~~

~~ADDRESS - PASSAGGIO~~

~~START~~

ADDRESS - IN - CRE = 1 - IN - CRE
LEN

CREATE DOMAIN ~~INT62~~ AS INTEGER CHECK (VALUE > 0)

REAL AS REAL

STRING AS VARCHAR(100)

TARGA AS CHAR(10) CHECK REGEX OPPORTUNA

CF AS CHAR(11) CHECK

$\text{V} \left(\begin{smallmatrix} \text{TAGLIANDO}(T) \\ \text{INTERO}(T, IN) \end{smallmatrix} \right) \rightarrow \text{VIRTUALE}(T, \text{VIRT})$
 $\left(\exists USC \text{ USCITA}(T, USC) \right) \wedge \left(\exists USC \text{ USCITA}(T, USC) \wedge \text{INCUSE} \right)$

V.D - SSE - TAGL - VIRT

MO - TAGL - VIRT - SOVR.

NO - PASS - TUTOR - SOVR.

CONTO (U: INT62, M: MONTH, A: YEAR): INSIEME (STRING, STRING, TIME, TIME, REAL64)

SELECT ENTRA, ESCE, ~~EXTRACT(MONTH FROM ENTRA)~~, DATA, USCITA, PEDAGGIO(ENTRA, ESCE) FROM TAGLIANDO WHERE
M = EXTRACT(MONTH FROM ENTRA) AND A = EXTRACT(YEAR FROM ENTRA) AND VIRTUALE = TRUE
AND U = ~~SOVR~~ DISPOSITIVO

INIZIA (T: INT, TA: STRING)

INSERT INTO PASSAGGIO (IN, TUTOR, VEC) VALUES (NOW, T, TA)

FINISCE (T: INT, TA: STRING, ~~P: INT~~, V: REAL63)

~~SELECT IN, V.VMAX FROM TUTOR T, PASS ~~TA~~ V~~

R (SELECT VEL.VMAX FROM ~~TUTOR~~, VEICOLI V, VEL_MAX VEL WHERE V.TIPO = VEL.TIPO
AND VEL.TUTOR = T)

IF R.V < V

UPDATE PASSAGGIO SET OUT = NOW, WHERE TUTOR = T AND TARGA = TA AND OUT IS NULL
VEL = V

ELSE

~~REMOVE~~ * FROM PASSAGGIO WHERE TUTOR = T AND TARGA = TA AND OUT IS NULL
DELETE

~~T. NO. PASS - SOVRAPPONDI~~

~~INSERT / UPDATE ON PASSAGGIO~~

~~ERROR 5 (SELECT * FROM PASSAGGIO WHERE TARGA = NEW.TARGA AND OUT IS NULL
EXIST AND NEW.TUTOR = TUTOR)~~

VELOCITÀ (T: INT63, TA: STRING) : REAL63

IF NOT EXISTS (SELECT * FROM PASSAGGIO WHERE TARGA = TA AND TUTOR = T AND OUT IS NULL)
ERROR

ADESSO = NOW()

ORA = EXTRACT (HOUR FROM ADESSO)

MIN = ~~MIN~~ (MIN ~~MIN~~)

PASSATO =