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from enum import *

class Genere(StrEnum):

    uomo = auto()

    donna = auto()

import re

class Indirizzo:

    def __init__(self, via: str, civico: str, cap: str):

        via = via.strip()

        civico = civico.strip()

        cap = cap.strip()

        if not self._valid_via(via):

            raise ValueError(f"Via non valida: '{via}'")

        if not self._valid_civico(civico):

            raise ValueError(f"Civico non valido: '{civico}'")

        if not self._valid_cap(cap):

            raise ValueError(f"CAP non valido: '{cap}'")

        self._via = via

        self._civico = civico

        self._cap = cap

    def _valid_via(self, via):

        return re.fullmatch(r"(via|piazza|corso|viale|lungo|strada|rotonda)?\s+", via,
re.IGNORECASE) is not None

    def _valid_civico(self, civico):

        return re.fullmatch(r"\d+[A-Z]?", civico) is not None

    def _valid_cap(self, cap):

        return re.fullmatch(r"\d{5}", cap) is not None

    def via(self):

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        return self._via

    def civico(self):

        return self._civico

    def cap(self):

        return self._cap

    def __eq__(self, other) -> bool:

        if other is None or not isinstance(other, Indirizzo) or hash(self) != hash(other):

            return False

        return (self.via(), self.civico(), self.cap()) == (other.via(), other.civico(),
other.cap())

    def __hash__(self):

        return hash((self.via(), self.civico(), self.cap()))

class Denaro:

    def __init__(self, valuta: str, importo: str):

        if not self._valid_valuta(valuta):

            raise ValueError(f"Valuta non valida: '{valuta}'")

        if not self._valid_importo(importo):

            raise ValueError(f"Importo non valido: '{importo}'")

        self._valuta = valuta

        self._importo = importo

    def _valid_valuta(self, valuta):

        return re.fullmatch(r"[A-Z]{3}", valuta) is not None

    def _valid_importo(self, importo):

        try:

            return float(importo) > 0

        except (ValueError, TypeError):

            return False

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def valuta(self):

    return self._valuta

def importo(self):

    return self._importo

def __eq__(self, other):

    if other is None or not isinstance(other, Denaro) or hash(self) != hash(other):

        return False

    return (self._valuta, self._importo) == (other._valuta, other._importo)

def __hash__(self):

    return hash((self._valuta, self._importo))

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class Email(str):

    def __new__(cls, mail: str):

        if not re.fullmatch(r"^[^@]+@[^\@]+\.[^\@]+$", mail):

            raise ValueError(f"Email non valida: '{mail}'")

        return str.__new__(cls, mail)

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class Telefono(str):

    def __new__(cls, numero: str):

        numero = numero.strip()

        if re.fullmatch(r"(\+39)?3\d{8}", numero):

            return super().__new__(cls, numero)

        if re.fullmatch(r"0\d+", numero):

            return super().__new__(cls, numero)

        raise ValueError(f"Numero di telefono non valido: '{numero}'")

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class CodiceFiscale(str):

    def __new__(cls, cf: str):

        if not re.fullmatch(r"[A-Z]{6}\d{2}[A-Z]\d{2}[A-L]\d{3}[A-Z0-9]", cf):

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        raise ValueError(f"Codice fiscale non valido: '{cf}'")

    return str.__new__(cls, cf)

class PartitaIva(str):

    def __new__(cls, iva: str):

        if not re.fullmatch(r"\d{11}", iva):

            raise ValueError(f"Partita Iva non valida: '{iva}'")

        return str.__new__(cls, iva)

class Targa(str):

    def __new__(cls, targa: str):

        if not re.fullmatch(r"[A-Z]{2}\d{3}[A-Z]{2}", targa):

            raise ValueError(f"Targa non valida: '{targa}'")

        return str.__new__(cls, targa)

"""link repository github: https://github.com/JacopoSfolgori1/Jacopo-Sfolgori-UML.git"""

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