Internet Multimedia Engineering

Exam

Internet Programming

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Problem

Implement a series of Representational State Transfer (REST) Application Programming Interface (API) functionalities for a **simple workflow management system**. In more details, it is necessary to define:

- an **entity** to represent **commands**;

- an **entity** to represent the **workflows** that refers to a **list of commands** with the possibility to **start/stop** the **execution**.

In particular, in each command be present the following data:

- **path** (indicate the path of the command to executed);

- **date of completion** (or *none* if not yet completed);

- **belonging category** (exactly **1**);

- **zero or more tags**.

For **each question** the following **bonus** are applied:

0.50 **points** if the **code** is **correctly indented**;

1.00 **points** if the **variable names** are **related to the context** (it is more **simple** the **understanding** of the **code**):

> **Examples**
>
> - If I have to **refer to the book entity model**, the **correct name** can be `book`, `books`, etc. and **not** `entity_1`, `entity_a`, or `entityA`;
>
> - If I have to **refer to the book - customer relationship model**, the **correct name** can be `BookCustomer`, `book_customer`, etc. and **not** `relationship_1`, `relationship_a`, or `relationshipA`;

0.50 **points** if the **variable** and **function names** are written in **english** (**de-facto standard** in the **programming**);

0.75 **points** if the **code** is well **commented** in **english** (**improves** the **understanding** of the **code**).

6 Points 1. **Creation**, **update**, **deletion** of a **command**.

6 Points 2. **Creation**, **update**, **deletion** of a **workflow**.

6 Points 3. **Creation**, **update**, **deletion** of a **relationship** between **commands** and **workflows**.

6 Points 4. **Start**, **stop**, the **execution** of the **wokflow**.

> **Tips**
>
> - It is **not important** to **define the code** of the **execution of each command part** of the **workflow**.
>
> - Just **return** that the **command is start or stopped**.

5 Points 5. Add a **standard authorization mechanism** to all the functions defined in the REST APIs.

Extra

> **Tips**
>
> - poetry (https://python-poetry.org) is valid tool to **manage** python **environment** and **avoid possible problems** with **package dependencies**.
>
> - **Guide**: https://realpython.com/dependency-management-python-poetry.

Instructions for Delivery

- **Zip your files** (**only directory** and **python scripts** with extension *.py*).

- **Rename** the **zip file** with the **following syntax**: *your-id-number-surname_name*.zip.

- Option **A** (*highly recommended*)

    - Go the URL of this teaching in **Aulaweb**: https://2023.aulaweb.unige.it/course/view.php?id=10377.

- Enter to the assignment **2024-07-05** [**05th July 2024**] and upload the file.

- Option **B**

  - **Send** an **email** to **alessandro.carrega@unige.it** with **subject** "**Exam 2024-07-05** *your-id-number*", **your zip file** as **attachment**, and **no text**.

- Option **C**

  - **Send your zip file** as **attachment** in the **chat** with **alessandro.carrega@unige.it** of **Microsoft Teams channel** of **Internet Programming - 104779** class.