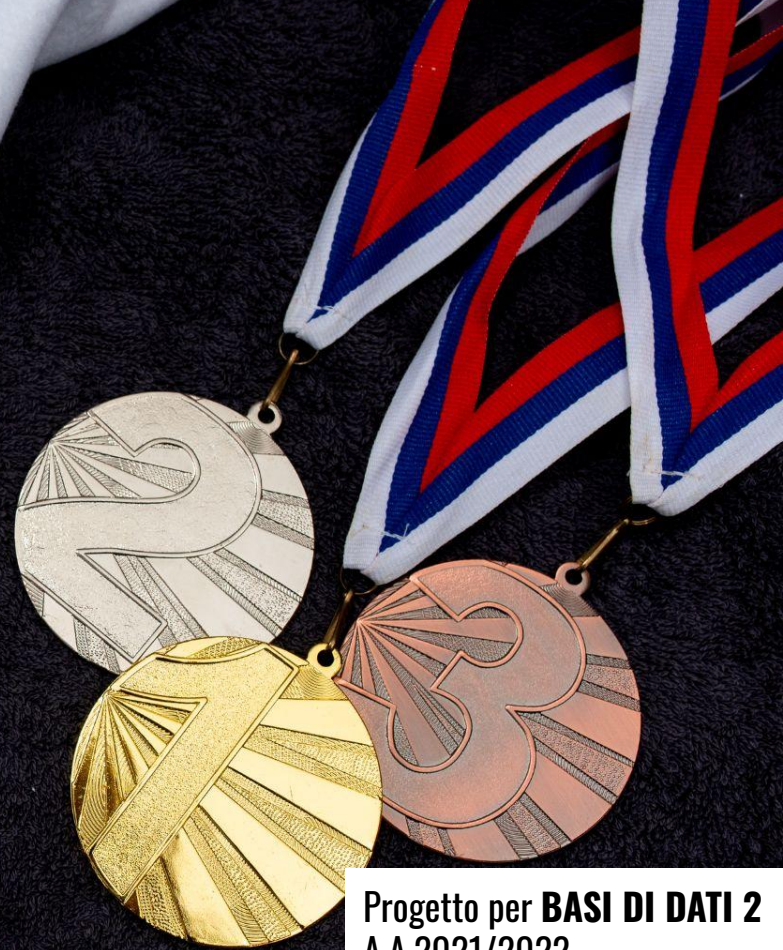Progetto per **BASI DI DATI 2**
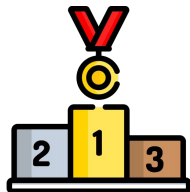A.A.2021/2022

Salvato Marika Pia

Introduzione

OBIETTIVO:

Web app per gestire i dati sugli **eventi**

e i **risultati** dei giochi olimpici invernali di Pechino 2022

Tecnologie utilizzate

FARM Stack

FastAPI

- veloce
- breve
- Just Modern Python

React

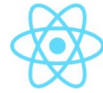- applicazioni dinamiche
- DOM virtuale
- altamente performante

mongoDB

- schema less
- indicizzazione
- import dati da csv e json

Tecnologie utilizzate

Frontend ->

Backend -> +

Database ->

II Dataset

II Dataset

athletes.csv

	name	short_name	gender	birth_date	birth_place	birth_country	country	country_code	discipline	discipline_code	residence_place	residence_country	height_m/ft	url
0	AALTO Antti	AALTO A	Male	1995-04-02	KITEE	Finland	Finland	FIN	Ski Jumping	SJP	KUOPIO	Finland	NaN	../../en/results/ski-jumping/athlete-profil...
1	AALTONEN Miro	AALTONEN M	Male	1993-06-07	JOENSUU	Finland	Finland	FIN	Ice Hockey	IHO	PODOLSK	Russian Federation	1.80/5'10"	../../en/results/ice-hockey/athlete-profile...
2	ABDELKADER Justin	ABDELKADER J	Male	1987-02-25	NaN	NaN	United States of America	USA	Ice Hockey	IHO	NaN	NaN	1.87/6'1"	../../en/results/ice-hockey/athlete-profile...
3	ABDI Fayik	ABDI F	Male	1997-10-07	SAN DIEGO, CA	United States of America	Saudi Arabia	KSA	Alpine Skiing	ALP	DHAHRAN	Saudi Arabia	NaN	../../en/results/alpine-skiing/athlete-prof...
4	ABDUL-SABOOR Hakeem	ABDUL-SABOOR H	Male	1987-11-07	EAST ORANGE, NJ	United States of America	United States of America	USA	Bobsleigh	BOB	POWHATAN, VA	United States of America	NaN	../../en/results/bobsleigh/athlete-profile-...

`(2892, 14)`

Il Dataset

	Discipline	F	M	Total
0	Alpine Skiing	153	157	310
1	Biathlon	106	107	213
2	Bobsleigh	46	117	163
3	Cross-Country Skiing	149	150	299
4	Curling	59	55	114
5	Figure Skating	74	74	148
6	Freestyle Skiing	127	141	268
7	Ice Hockey	236	311	547
8	Luge	35	71	106
9	Nordic Combined	0	56	56
10	Short Track Speed Skating	54	58	112
11	Skeleton	25	25	50
12	Ski Jumping	40	70	110
13	Snowboard	114	119	233
14	Speed Skating	78	87	165
15	Total	1296	1598	2894

entries_discipline.csv

II Dataset

medals.csv

	medal_type	medal_code	medal_date	athlete_short_name	athlete_name	athlete_sex	athlete_link	event	country	country_code	discipline	discipline_code
0	Gold	1	2022-02-05 00:00:00.0	ECKHOFF T	ECKHOFF Tiril	X	../../../en/results/biathlon/athlete-profile-n...	Mixed Relay 4x6km (W+M)	Norway	NOR	Biathlon	BTH
1	Gold	1	2022-02-05 00:00:00.0	ROEISELAND MO	ROEISELAND Marte Olsbu	X	../../../en/results/biathlon/athlete-profile-n...	Mixed Relay 4x6km (W+M)	Norway	NOR	Biathlon	BTH
2	Gold	1	2022-02-05 00:00:00.0	BOE T	BOE Tarjei	X	../../../en/results/biathlon/athlete-profile-n...	Mixed Relay 4x6km (W+M)	Norway	NOR	Biathlon	BTH
3	Gold	1	2022-02-05 00:00:00.0	BOE JT	BOE Johannes Thingnes	X	../../../en/results/biathlon/athlete-profile-n...	Mixed Relay 4x6km (W+M)	Norway	NOR	Biathlon	BTH
4	Silver	2	2022-02-05 00:00:00.0	CHEVALIER-BOUCHET	CHEVALIER-BOUCHET Anais	X	../../../en/results/biathlon/athlete-profile-n...	Mixed Relay 4x6km (W+M)	France	FRA	Biathlon	BTH

(538, 12)

II Dataset

	Order	Country	Gold	Silver	Bronze	Total	Order by Total	Country Code
0	1	Norway	15	8	11	34	1	NOR
1	2	Germany	10	7	5	22	4	GER
2	3	United States of America	8	8	5	21	5	USA
3	4	People's Republic of China	8	4	2	14	11	CHN
4	5	Netherlands	7	5	4	16	8	NED
5	5	Sweden	7	5	4	16	8	SWE
6	7	Switzerland	7	2	5	14	11	SUI
7	8	Austria	6	7	4	17	6	AUT
8	9	ROC	5	9	13	27	2	ROC
9	10	France	5	7	2	14	11	FRA
10	11	Canada	4	7	13	24	3	CAN
11	12	Japan	3	5	9	17	6	JPN
12	13	Italy	2	7	7	16	8	ITA
13	14	Republic of Korea	2	4	1	7	14	KOR
14	15	Slovenia	2	3	2	7	14	SLO
15	16	Finland	1	2	3	6	16	FIN
16	17	Australia	1	2	1	4	17	AUS
17	18	New Zealand	1	1	0	2	19	NZL
18	19	Hungary	1	0	2	3	18	HUN
19	20	Czech Republic	1	0	1	2	19	CZE
20	21	Slovakia	1	0	0	1	22	SVK
21	22	Belarus	0	2	0	2	19	BLR
22	23	Spain	0	1	0	1	22	ESP
23	23	Ukraine	0	1	0	1	22	UKR
24	25	Belgium	0	0	1	1	22	BEL
25	25	Estonia	0	0	1	1	22	EST
26	25	Latvia	0	0	1	1	22	LAT
27	25	Poland	0	0	1	1	22	POL

medals_total.csv

II Dataset

events.csv

	location	event_stage	event_status	time	event_url	discipline_code	discipline
0	Yanqing National Alpine Skiing Centre - Speed	Men's Downhill 1st Training	Finished	2022-02-03T11:00:00+08:00	../../../en/results/alpine-skiing/results-men-...	ALP	Alpine Skiing
1	Yanqing National Alpine Skiing Centre - Speed	Men's Downhill 2nd Training	Finished	2022-02-04T12:00:00+08:00	../../../en/results/alpine-skiing/results-men-...	ALP	Alpine Skiing
2	Yanqing National Alpine Skiing Centre - Technical	Women's Giant Slalom Run 1	Finished	2022-02-07T09:30:00+08:00	../../../en/results/alpine-skiing/results-wome...	ALP	Alpine Skiing
3	Yanqing National Alpine Skiing Centre - Speed	Men's Downhill	Finished	2022-02-07T12:00:00+08:00	../../../en/results/alpine-skiing/results-men-...	ALP	Alpine Skiing
4	Yanqing National Alpine Skiing Centre - Technical	Women's Giant Slalom Run 2	Finished	2022-02-07T14:45:00+08:00	../../../en/results/alpine-skiing/results-wome...	ALP	Alpine Skiing

(612, 7)

Database

entries_disciplines.csv

events.csv

athletes.csv

medals.csv

medals_total.csv

disciplines.json

rankings.json

events.json

Database

disciplines.json

```
{
    "Discipline": "Alpine Skiing",
    "F": 153,
    "M": 157,
    "Total": 310,
    "athletes": [
        {
            "name": "ABDI Fayik",
            "short_name": "ABDI F",
            "gender": "Male",
            "birth_date": "1997-10-07",
            "birth_place": "SAN DIEGO, CA",
            "birth_country": "United States of America",
            "country": "Saudi Arabia",
            "country_code": "KSA",
            "discipline": "Alpine Skiing",
            "discipline_code": "ALP",
            "residence_place": "DHAHRAN",
            "residence_country": "Saudi Arabia",
            "url": "../../../en/results/alpine-skiing/athlete-profile-n1051423-fayik-
abdi.htm"
        }, ...]
}
...
```

Database

rankings.json

```
{
    "Order": 1,
    "Country": "Norway",
    "Gold": 15,
    "Silver": 8,
    "Bronze": 11,
    "Total": 34,
    "Order by Total": 1,
    "Country Code": "NOR",
    "gold_medals": [
        {
            "medal_type": "Gold",
            "medal_date": "2022-02-05 00:00:00.0",
            "athlete_short_name": "ECKHOFF T",
            "athlete_name": "ECKHOFF Tiril",
            "athlete_sex": "X",
            "athlete_link": "../../../en/results/biathlon/athlete-profile-n1031947-tiril-eckhoff.htm",
            "event": "Mixed Relay 4x6km (W+M)",
            "country": "Norway",
            "country_code": "NOR",
            "discipline": "Biathlon",
            "discipline_code": "BTH"
        },...,
    ],
    "silver_medals": [
        {
            "medal_type": "Silver",
            "medal_date": "2022-02-08 00:00:00.0",
            "athlete_short_name": "SKASLIEN K",
            "athlete_name": "SKASLIEN Kristin",
            "athlete_sex": "X",
            "athlete_link": "../../../en/results/curling/athlete-profile-n1031397-kristin-skaslien.htm",
            "event": "Mixed Doubles",
            "country": "Norway",
            "country_code": "NOR",
            "discipline": "Curling",
            "discipline_code": "CUR"
        },...,
    ],
    "bronze_medals": [
        {
            "medal_type": "Bronze",
            "medal_date": "2022-02-06 00:00:00.0",
            "athlete_short_name": "ENGEBRAATEN H",
            "athlete_name": "ENGEBRAATEN Hallgeir",
            "athlete_sex": "M",
            "athlete_link": "../../../en/results/speed-skating/athlete-profile-n1032353-hallgeir-
engebraaten.htm",
            "event": "Men's 5000m",
            "country": "Norway",
            "country_code": "NOR",
            "discipline": "Speed Skating",
            "discipline_code": "SSK"
        },...]
```

Database

events.json

```json
{
    "location": "Yanqing National Alpine Skiing Centre - Speed",
    "event_stage": "Men's Downhill 1st Training",
    "event_status": "Finished",
    "time": "2022-02-03T11:00:00+08:00",
    "event_url": "../../../en/results/alpine-skiing/results-men-s-downhill-trno-000100-.htm",
    "discipline_code": "ALP",
    "discipline": "Alpine Skiing"
}{
    "location": "Yanqing National Alpine Skiing Centre - Speed",
    "event_stage": "Men's Downhill 2nd Training",
    "event_status": "Finished",
    "time": "2022-02-04T12:00:00+08:00",
    "event_url": "../../../en/results/alpine-skiing/results-men-s-downhill-trno-000200-.htm",
    "discipline_code": "ALP",
    "discipline": "Alpine Skiing"
}{...}
```

Backend

1. Database connection:

```python
import motor.motor_asyncio
MONGO_DETAILS = "mongodb://localhost:27017"
client = motor.motor_asyncio.AsyncIOMotorClient(MONGO_DETAILS)

database = client.Beijing2022
disciplines_collection = database.get_collection("disciplines")
rankings_collection = database.get_collection("rankings")
events_collection = database.get_collection("events")
```

Backend

2. Database queries:

```python
async def create_a_medal(medal: dict):
    ranking_doc = await rankings_collection.find_one({"Country": medal["country"]})
    updated_ranking_doc = False
    if ranking_doc:
        if medal["medal_type"] == "Gold":
            updated_ranking_doc = await rankings_collection.update_one(
                {"Country": medal["country"]},{"$push": {"gold_medals": medal } }
            )
        elif medal["medal_type"] == "Silver":
            updated_ranking_doc = await rankings_collection.update_one(
                {"Country": medal["country"]},{"$push": {"silver_medals": medal } }
            )
        elif medal["medal_type"] == "Bronze":
            updated_ranking_doc = await rankings_collection.update_one(
                {"Country": medal["country"]},{"$push": {"bronze_medals": medal } }
            )

        if updated_ranking_doc:
            newTotal = ranking_doc["Total"]+1
            await rankings_collection.update_one({"Country": medal["country"]},{"$set":{"Total":newTotal}})
            if medal["medal_type"] == "Gold":
                newGoldTotal = ranking_doc["Gold"] + 1
                updated_ranking_doc = await rankings_collection.update_one(
                    {"Country": medal["country"]},{"$set": {"Gold": newGoldTotal } }
                )
            elif medal["medal_type"] == "Silver":
                newSilverTotal = ranking_doc["Silver"] + 1
                updated_ranking_doc = await rankings_collection.update_one(
                    {"Country": medal["country"]},{"$set": {"Silver": newSilverTotal} }
                )
            elif medal["medal_type"] == "Bronze":
                newBronzeTotal = ranking_doc["Bronze"] + 1
                updated_ranking_doc = await rankings_collection.update_one(
                    {"Country": medal["country"]},{"$set": {"Bronze": newBronzeTotal} }
                )
            return True
    return False
```
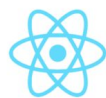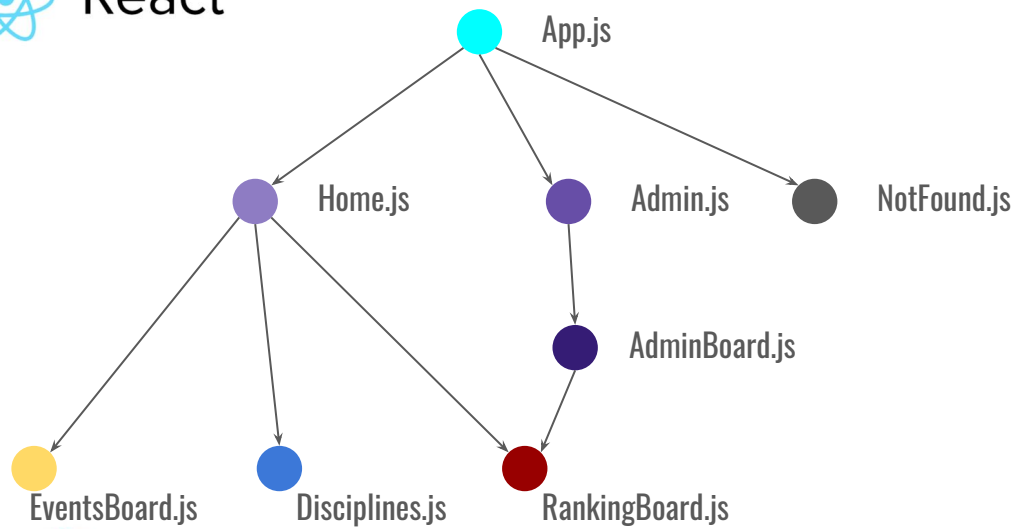
Backend

3.   API

```
@router.post("/rankings", tags=["Rankings"])
async def create_a_medal(medal: MedalModel = Body(...)):
    medal = jsonable_encoder(medal)
    medal_created = False
    medal_created = await db.create_a_medal(medal)
    return medal_created
```