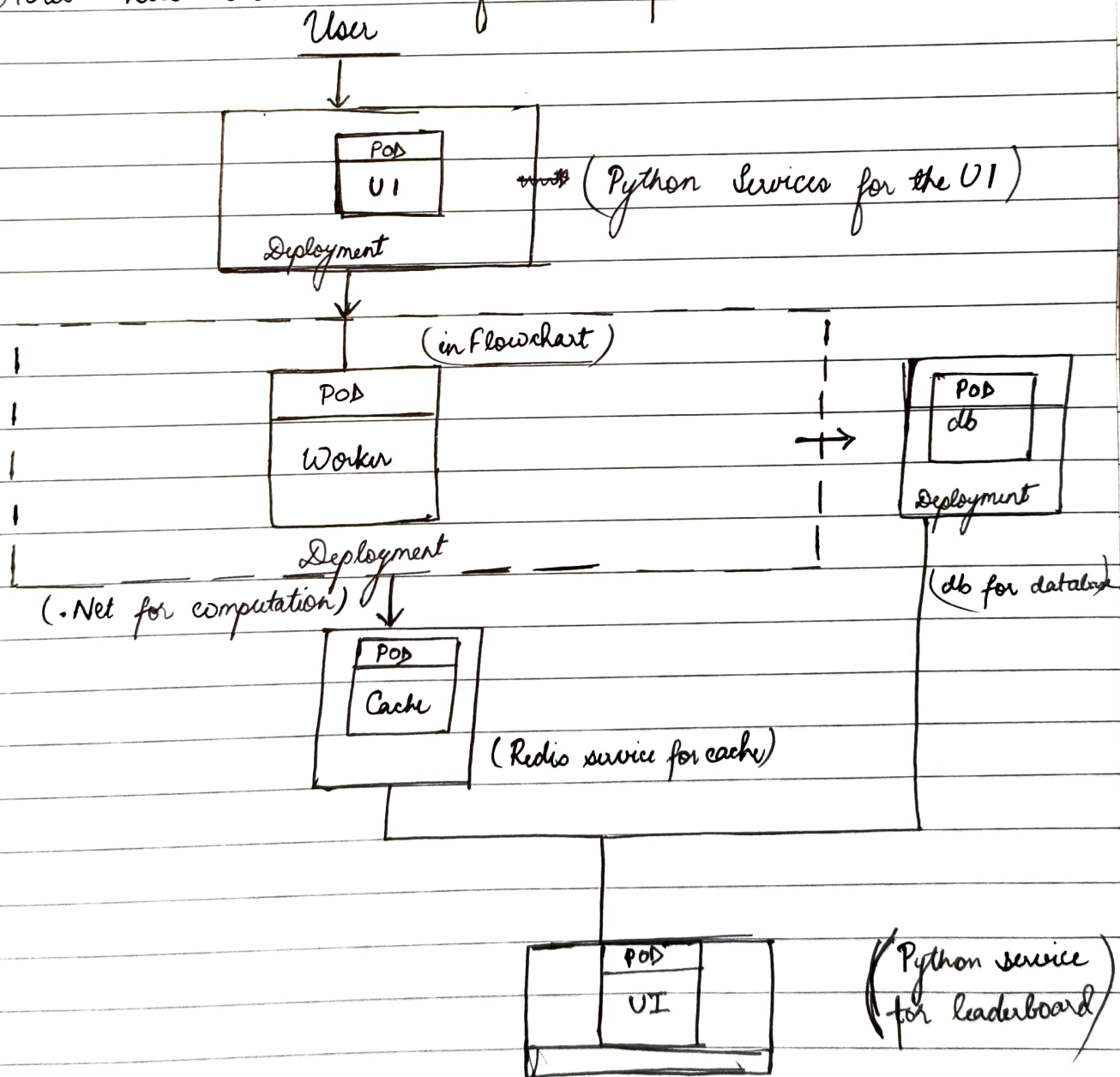→ Flowchart for real time computation

• Let us assume that in a pool there are 500k entries, the leaderboard would show top 10 players.

• We would keep records of top 10 players in cache memory so they are easily accessible. We may use Redis service for that.

• For the rest, we would use permanent database
• Here's kubernetes version for the flowchart

User

```
┌─────────────────────────┐
│  ┌──────────┐           │
│  │   POD    │           │        (Python Services for the UI)
│  │   UI     │           │
│  └──────────┘           │
│  Deployment             │
└─────────────────────────┘
```

(in flowchart)

```
┌──────────────┐                    ┌──────────────┐
│   POD        │                    │  ┌────────┐  │
│              │          ──→       │  │  POD   │  │
│   Worker     │                    │  │  db    │  │
│              │                    │  └────────┘  │
│  Deployment  │                    │  Deployment  │
└──────────────┘                    └──────────────┘
```

(.Net for computation)   (db for database)

```
┌──────────────┐
│  ┌────────┐  │
│  │  POD   │  │
│  │  Cache │  │
│  └────────┘  │
└──────────────┘
```
(Redis service for cache)

```
┌──────────────┐
│  ┌────────┐  │      (Python service
│  │  POD   │  │       for leaderboard)
│  │  UI    │  │
│  └────────┘  │
└──────────────┘
```

- I would use EC2 for hosting the ~~servers~~ servers, docker containers ~~to~~ of Python, Redis, .Net and Postgres as it is more convenient than the actual softwares.

- I have used deployments so that scalability won't be an issue.

- The flowchart displays computation for top 10 positions only.

- Insertion sort can be used as sorting algorithm in Cache memory as its best for already ~~sorte~~ nearly sorted data and data entry is also small in cache memory.

- Rest data which is in database is sorted, but since its not to be displayed on leaderboard, so we can spare some time for sorting it.