

Background

FomF is one of the leading continuous medical education platforms across German-speaking countries. Each year FomF holds tens of events in different medical fields. To participate in an event, participants must go through a booking process in which they are offered different options for participation. They can decide to participate via Livestream or in person. Moreover, they have the option to participate in an event fully or partially.

Task

Your task is to implement a simplified version of the booking price calculation and validation.

As the Back-End Engineer you are asked to develop an API which accepts a JSON input which represents the selected ticket. Upon invocation, your API will validate the ticket selection of the participant and in case of a valid selection, calculates its total price.

Input

The following is an example of an input of your API:

```
{
  "event": "1234",
  "occupation_type": "ASSISTANT_DOCTOR",
  "tickets": [
    {
      "date": "2022-12-01",
      "ticket_type": "DAY",
      "participation": "ON_SITE"
    },
    {
      "date": "2022-12-02",
      "ticket_type": "DAY",
      "participation": "LIVESTREAM"
    }
  ]
}
```

Ticket Type

As mentioned above, participants have the option to participate fully or partially in an event. To do so they need to select the correspondent ticket type during the booking process. The following enumeration represents ticket types:

```
enum class TicketType {
    ENTIRE_EVENT,
    DAY,
    HALF_DAY,
}
```

Participation Type

The participation can be via Livestream or in person:

```
enum class ParticipationType {  
    LIVESTREAM, ON_SITE  
}
```

Occupation Type

Participants of an event could have different occupation types. The following enumeration represents this:

```
enum class OccupationType {  
    DOCTOR,  
    ASSISTANT_DOCTOR,  
}
```

Ticket Prices

And finally, ticket prices are as follows:

	Assistant Doctor		Doctor	
	Livestream	Onsite	Livestream	On-site
ENTIRE_EVENT	350€	400€	450€	500€
DAY	50€	100€	100€	150€
HALF_DAY	25€	--	50€	--

Validity of Ticket

Following business rules apply for ticket selection

- a HALF_DAY ticket and a DAY ticket cannot be booked for the same day;
- a DAY ticket cannot get booked with an ENTIER_EVENT ticket;
- A HALF_DAY_TICKET cannot get booked with ENTIER_EVENT ticket
- ONSITE and LIVESTREAM tickets cannot get booked for the same day
- ONSITE HALF_DAY ticket cannot be booked

Acceptance Criteria

Following needs to be done/assured:

- Technology stack to be used:
 - **language:** Java 11+ / Kotlin 1.1+
 - **framework:** Spring Boot 2.0+
 - **build tool:** Gradle 7+
- The application can run as a docker container
- A readme is provided which covers:
 - instructions to run the application
 - documentation of the implemented API
 - documentation on important decisions made
- The correctness of the response in accordance with the mentioned business rules.

Evaulation

We consider the following points while evaluating your work:

- Quality of the written code from the perspective of readability, maintainability, and reliability;
- The architecture and organization of the code;
- Automated tests.

This assignment should be doable in less than a day and please also consider that **no Front-End** is needed.