

- If we want to implement auditing data when we create a new object or update a object, we can implement methods in the entity and create columns in the entity table.
- First, implement the attributes in the entity

```
@Id // the primary key of the table will be the attribute id from the client
@GeneratedValue(strategy = GenerationType.IDENTITY) // auto increment id (primary key)
private Long id;
private String name;
private String cpf;
private Double income;
private Instant birthDate;
private Integer children;

private Instant createdAt;
```

```
private Instant updatedAt;
```

- Now, we have to put a annotation in the attributes to inform that we want store this data in the UTC form.

```
@Id // the primary key of the table will be the attribute id from the client
@GeneratedValue(strategy = GenerationType.IDENTITY) // auto increment id (primary key)
private Long id;
private String name;
private String cpf;
private Double income;
private Instant birthDate;
private Integer children;

@Column(columnDefinition = "TIMESTAMP WITHOUT TIME ZONE")
private Instant createdAt;
```

```
@Column(columnDefinition = "TIMESTAMP WITHOUT TIME ZONE")
private Instant updatedAt;
```

```
public Client() {
}
```

- Now, we have to create the getters and setters methods. We will not create the setters methods, because we don't want to set methods for the auditing data, just get.

```
public void setChildren(Integer children) {
    this.children = children;
}

public Instant getCreatedAt() {
    return createdAt;
}

public Instant getUpdatedAt() {
    return updatedAt;
}
```

- To get the instant time when create or update, we will create a method to store the instant time.

```

public Instant getCreatedAt() {
    return createdAt;
}

public Instant getUpdatedAt() {
    return updatedAt;
}

public void prePersist() {
    createdAt = Instant.now();
}

public void preUpdate() {
    updatedAt = Instant.now();
}

```

- To make this method return the instant, we put a annotation.

```

public Instant getCreatedAt() {
    return createdAt;
}

public Instant getUpdatedAt() {
    return updatedAt;
}

@PrePersist
public void prePersist() {
    createdAt = Instant.now();
}

@PreUpdate
public void preUpdate() {
    updatedAt = Instant.now();
}

```

- We don't create the attributes in the DTO package, because we don't want to inform to the user the instant data.

- When we run the app, the tables was created

TB_CLIENT
ID
BIRTH_DATE
CHILDREN
CPF
CREATED_AT
INCOME
NAME
UPDATED_AT

- Let's test the Update and Create

POST
{{host}}/clients

Params
Authorization
Headers (8)
Body
Pre-request Script
Tests
Settings

Query Params

KEY	VALUE
Key	Value

Body
Cookies
Headers (6)
Test Results

Pretty
Raw
Preview
Visualize
JSON

```

1 {
2   "id": 4,
3   "name": "Maria Silva",
4   "cpf": "12345678901",
5   "income": 6500.0,
6   "birthDate": "1994-07-20T10:30:00Z",
7   "children": 2
8 }
```

```
SELECT * FROM TB_CLIENT
```

```
SELECT * FROM TB_CLIENT;
```

ID	BIRTH_DATE	CHILDREN	CPF	CREATED_AT	INCOME	NAME	UPDATED_AT
1	2011-12-03 08:15:30	1	111.111.111-11	null	1000.0	JOAO	null
2	2011-12-03 08:15:30	2	222.222.222-22	null	2000.0	MARIA	null
3	2011-12-03 08:15:30	3	333.333.333-33	null	3000.0	JOSE	null
4	1994-07-20 07:30:00	2	12345678901	2021-01-24 18:54:26.806998	6500.0	Maria Silva	null

(4 rows, 4 ms)

GET All Clients

POST New Client

PUT Update Client

X

+

► Update Client

PUT

{{host}}/clients/1

Params

Authorization

Headers (8)

Body ●

Pre-request Script

Tests

Settings

Query Params

KEY	VALUE
Key	Value

Body Cookies Headers (5) Test Results

Pretty

Raw

Preview

Visualize

JSON

≡

```
1 {
2   "id": 1,
3   "name": "Maria Silvaaa",
4   "cpf": "12345678901",
5   "income": 6500.0,
6   "birthDate": "1994-07-20T10:30:00Z",
7   "children": 2
8 }
```

```
SELECT * FROM TB_CLIENT;
```

ID	BIRTH_DATE	CHILDREN	CPF	CREATED_AT	INCOME	NAME	UPDATED_AT
1	1994-07-20 07:30:00	2	12345678901	null	6500.0	Maria Silvaaa	2021-01-24 18:55:53.081488
2	2011-12-03 08:15:30	2	222.222.222-22	null	2000.0	MARIA	null
3	2011-12-03 08:15:30	3	333.333.333-33	null	3000.0	JOSE	null
4	1994-07-20 07:30:00	2	12345678901	2021-01-24 18:54:26.806998	6500.0	Maria Silva	null

(4 rows, 1 ms)