Code Summary: Bucket Pattern

To apply the Bucket pattern to the documents in our bookstore app, we created a bucket document with an `id` containing the `book_id` and `month` timestamp:

```
{
  "id": {
    "book_id": 1,
    "month": {
      "$date": "2023-11-22T00:00:00.000Z"
    }
  }
}
```

Next, we added the `views` array to the bucket document to store all view documents for the month. Each view document included a `timestamp` and the `user_id`:

```
{
  "id": {
    "book_id": 1,
    "month": {
      "$date": "2023-11-22T00:00:00.000Z"
    }
  },
  "views": [
    {
      "user_id": "user00",
      "timestamp": {
        "$date": "2023-11-22T00:00:00.000Z"
      }
    },
    {
      "user_id": "user10",
      "timestamp": {
        "$date": "2023-11-22T00:01:00.000Z"
      }
    },
  ]
}
```

Although not covered in the previous video, you can also use an aggregation pipeline to implement the Bucket pattern on an existing views collection. For example, imagine you had a views collection where each document corresponds to a user view for a book and consists of a `book_id`, `timestamp` and `user_id`.

```
{
    "book_id": 34538756,
    "timestamp": {
        "$date": "2023-09-29T08:23:13Z"
    },
    "user_id": 271828
}
```

In order to retrieve bucket documents containing all `view` documents of a given book grouped by month and including the total view count, you could use the following aggregation pipeline:

```
[
    {
        $group: {
            _id: {
                book_id: "$book_id",
                month: {
                    $dateFromParts: {
                        year: { $year: "$timestamp" },
                        month: { $month: "$timestamp" },
                        day: 1,
                    },
                },
            },
            views: {
                $push: {
                    user_id: "$user_id",
                    timestamp: "$timestamp",
                },
            },
        },
    },
    {
        $set: {
            views_count: { $size: "$views" },
        },
    }]
```