IMSE Project 2022

Web application for Pharmaceutical Company

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for 052400-1 VU Information Management and Systems Engineering (SS2022)

Agenda

Infrastructure

Data Import

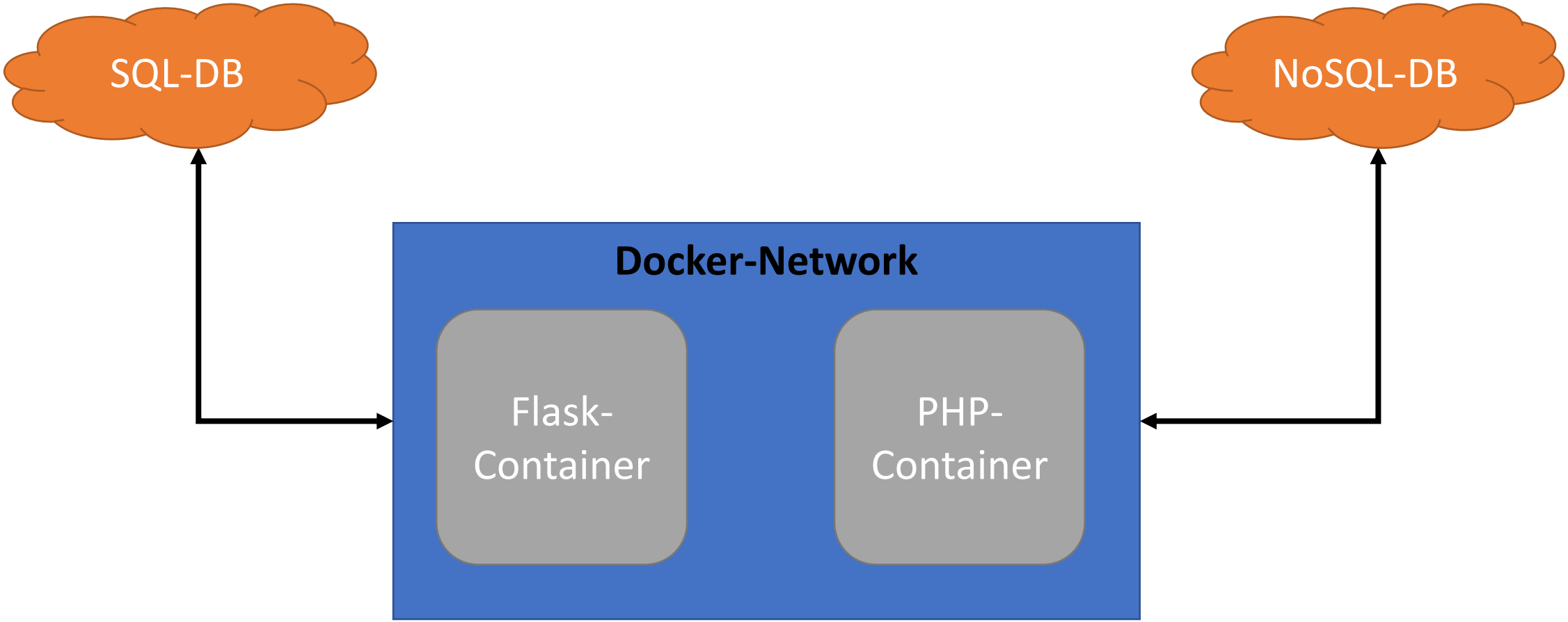
Use Cases & Reports in SQL

NoSQL Design

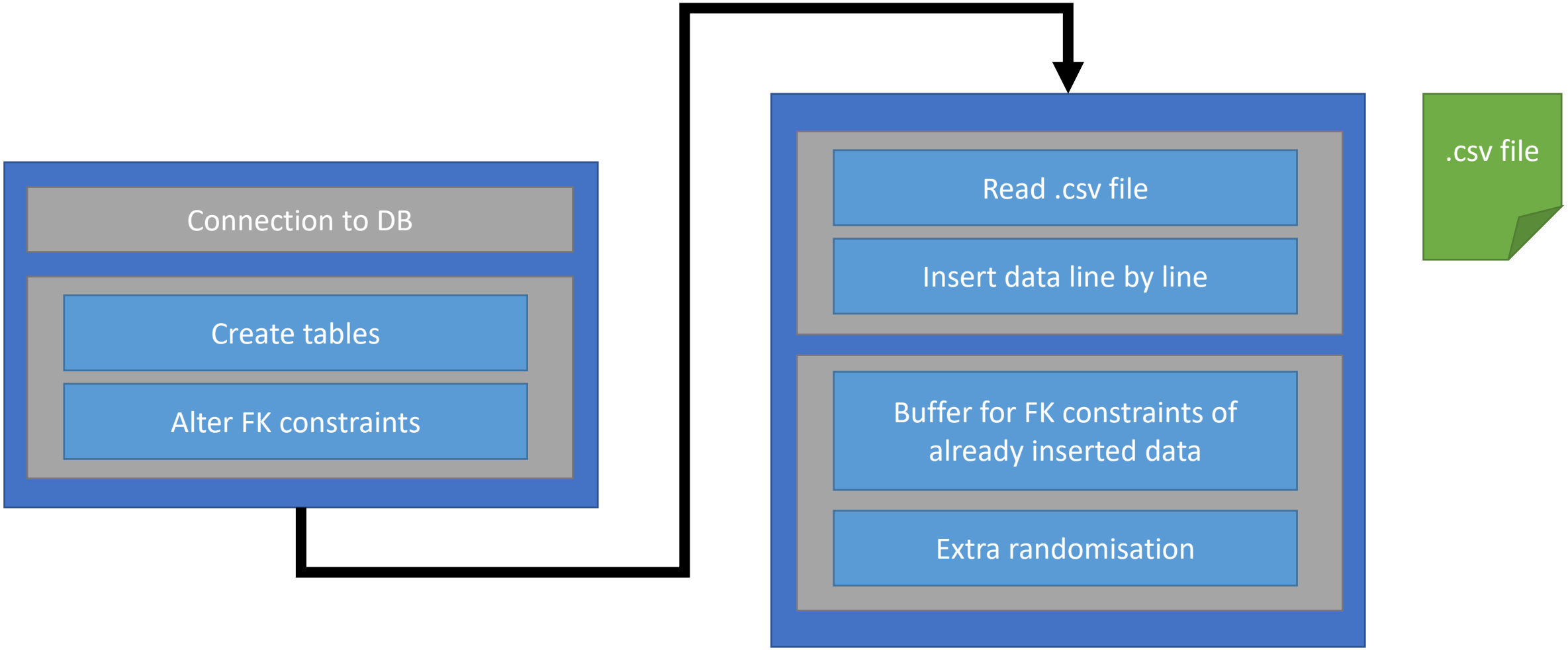
Data migration

Use Cases & Reports in NoSQL

Infrastructure



Data import into SQL database



Data import into SQL database

```
499  # ------ INSERT CLIENT ------
500  clientBuffer = []
501
502  filepath = dir+"client_names.csv"
503  print("-----------------------------------------------------")
504  with open(filepath) as file:
505    i = 0
506    content = csv.reader(file, delimiter=';')
507    for line in content:
508      randIndex = random.randint(0, len(countryBuffer)) -1
509      cursor.execute(
510        f"INSERT INTO Client (Client_Name, Country_Name) VALUES ('{line[0]}', '{countryBuffer[randIndex]}')"
511        )
512      print(f"[INFO] {i} records inserted into table Client [{line[0]}, {countryBuffer[randIndex]}]" )
513      clientBuffer.append(line[0])
514      i +=1
515      connSQL.commit()
516  clientRows = i
517  print("[INFO] Rows affected:", clientRows)
```

Use Case 1: Register Client in SQL

```
1 •  SELECT * FROM sql11502641.Client;
```

Result Grid | Filter Rows: | Edit:

ID_client	Client_Name	Country_Name
1	?Dennehy Computing Ltd	Romania
2	Mallard Party Supplies Ltd	Switzerland
3	Simmons Coachworks Ltd	Slovakia
4	Nolan Exhibitions Ltd	Luxembourg
5	North View Pet Supplies Ltd	Netherlands
6	Gatley Locksmiths Ltd	Netherlands
7	Harford Worktops Ltd	United Kingdom
8	Holt Recreational Vehicles Ltd	Switzerland
9	West Point Services Ltd	Slovenia
10	Radcliffe Workwear Ltd	Lithuania
11	Elgar Manufacturing Ltd	Austria
12	Haddow Office Furniture Ltd	Latvia
13	Randall Technical Services Ltd	Bulgaria

```php
71  //-------------------------------------------------------
72      // adds a new row to the CLIENT table
73      public function addClient($client_client_name, $client_country_name)
74      {
75          $sql = "INSERT INTO Client (client_name, country_name)
76                  VALUES ('{$client_client_name}', '{$client_country_name}')";
77
78
79          //$stmt = @oci_parse($this->conn, $sql);
80          $stmt = $this->conn->prepare($sql);
81
82          //$success = @oci_execute($stmt) && @oci_commit($this->conn);
83          $success = @mysqli_stmt_execute($stmt) && @mysqli_commit($this->conn);
84
85          return $success;
86      }
87
```

Use Case 2: Register Product in SQL

```
1 •  SELECT * FROM sql11502641.Product;
```

Result Grid | Filter Rows: | Edit: | Export

ID_product	Product_Name	Price	Indication
10766	Augmenmentin	1871.00	Gastroenteritis
11320	Cardiosan	1091.00	Gastroenteritis
11683	Metholimus Lactuprox	2336.00	Neuroscience
12984	Drospipirox Magnefenide	818.00	Pneumonia
14328	Epinidine Levamicin	2551.00	Gynecology
14437	Metabolo	1798.00	Mucha-Habermann disease
14517	Finadox	2859.00	Raynauds phenomenon
15309	Pitobicin	1718.00	Raynauds phenomenon
15424	Transriva	2882.00	Infectious Diseases
16543	Trazonone Palodocin	2349.00	Progesterone dermatitis
19582	Medosanus	262.00	Pneumonia
20148	Symrudin	1182.00	Uremia
22448	Neolido	1012.00	Autoimmune hepatitis
23445	Pantoplex	2193.00	Scurvy
24570	Actinavir	1006.00	Thromobose

```php
113     public function addProduct($product_name, $price, $indication)
114     {
115         //$sql = "INSERT INTO Product (ID_product, Product_Name, Price, Indication)
116         $sql = "INSERT INTO Product (Product_Name, Price, Indication)
117                 VALUES ('{$product_name}', '{$price}', '{$indication}')";
118
119
120         //$stmt = @oci_parse($this->conn, $sql);
121         $stmt = $this->conn->prepare($sql);
122
123         //$success = @oci_execute($stmt) && @oci_commit($this->conn);
124         $success = @mysqli_stmt_execute($stmt) && @mysqli_commit($this->conn);
125
126         return $success;
127     }
```

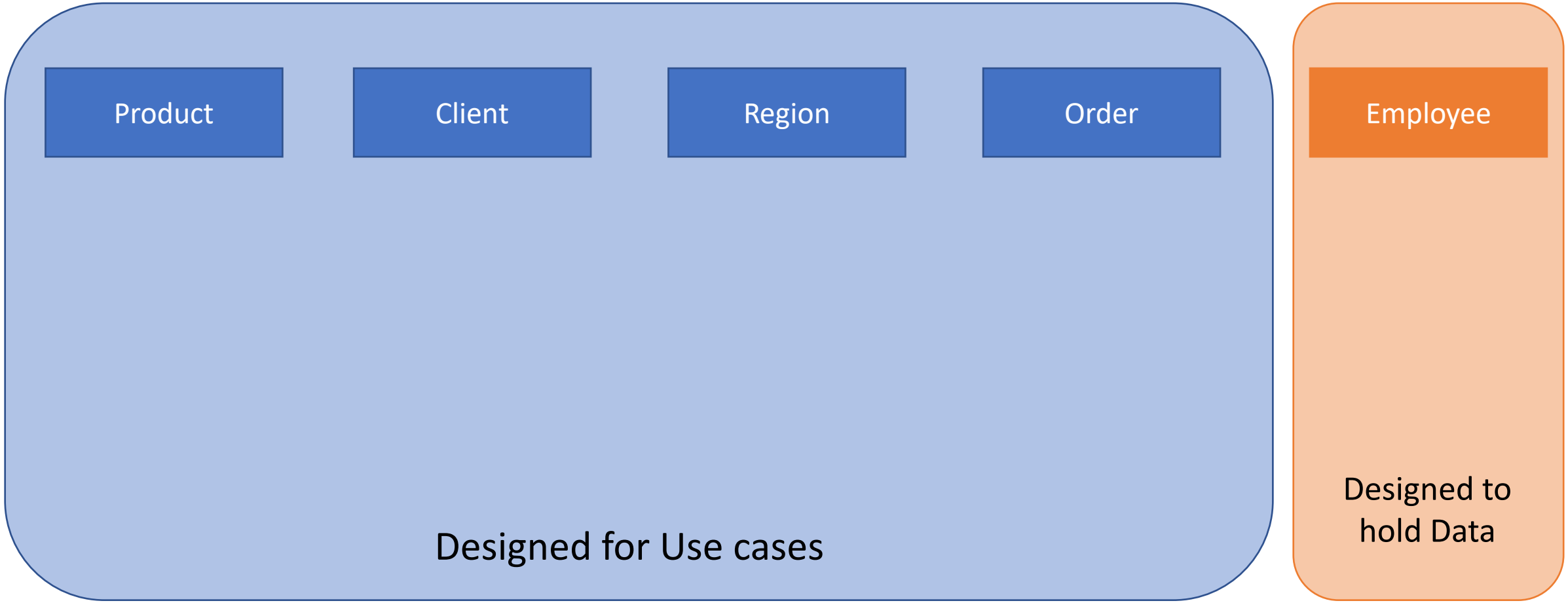
Report 1: Find Clients in Country in SQL

```
231   public function selectClientInCountry($country_param)
232   {
233       // Define the sql stmt string
234       // This query uses helper views in the sql CREATE script
235       $sql = "SELECT * FROM Client
236               WHERE Country_Name = '{$country_param}'
237               ORDER BY Client_Name;";
238
239       $result = mysqli_query($this->conn, $sql);
240
241       return $result;
242   }
```

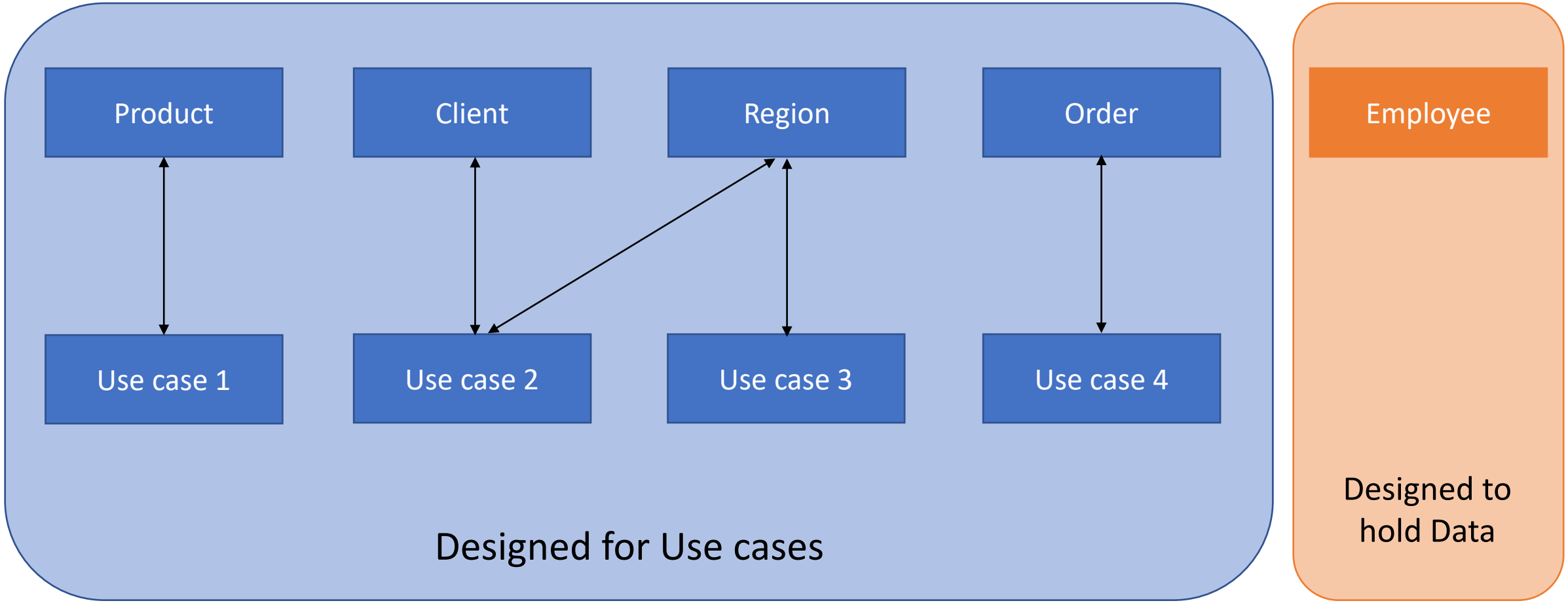
Report 2: Find Products under price limit in SQL

```php
public function selectProductsUnderPriceLimit($price_limit)
{
    // Define the sql stmt string
    // The Docker time is 2h behind CET
    $sql = "SELECT p.ID_product, p.Product_Name, p.Indication, p.Price
            FROM Product p
            WHERE Price < '{$price_limit}'
            ORDER BY Price DESC
            LIMIT 5;";
            $result = mysqli_query($this->conn, $sql);

    return $result;
}
```

NoSQL Design



NoSQL Design



Data migration

1) Get data from SQL

```
879         cursorSQL.execute(
880         """
881         SELECT * FROM Employee
882         """
883         )
884         allEmployees = cursorSQL.fetchall()
885         employeeCount = 0
886         for eachEmployee in allEmployees:
887             name = eachEmployee[1] + " " +eachEmployee[2]
888             gender = eachEmployee[3]
889             salery = int(eachEmployee[4])
890             teamLeader = eachEmployee[5]
891             hirDate = eachEmployee[6]
892             insertEmployee(name, gender, salery, teamLeader, hirDate)
893             employeeCount += 1
894
895         print(f"[INFO] {employeeCount} new Employees inserted to DB")
```

2) Write in NoSQL

```
872     def insertEmployee(name, gender, salery, teamLeader, hirDate):
873         collection = dbDrug['Employee']
874         doc = { "$set":{"Name": name, "Gender": gender, "Salary": int(salery), "Team_Leader": teamLeader,
875             "Hir_Date": creatDate(hirDate)}}
876         filter = { 'Name': name }
877         collection.update_one(filter, doc,  True)
```

Use Case 1: Register Client in NoSQL

MedStore.Client

Documents | Aggregations | Schema | Explain Plan

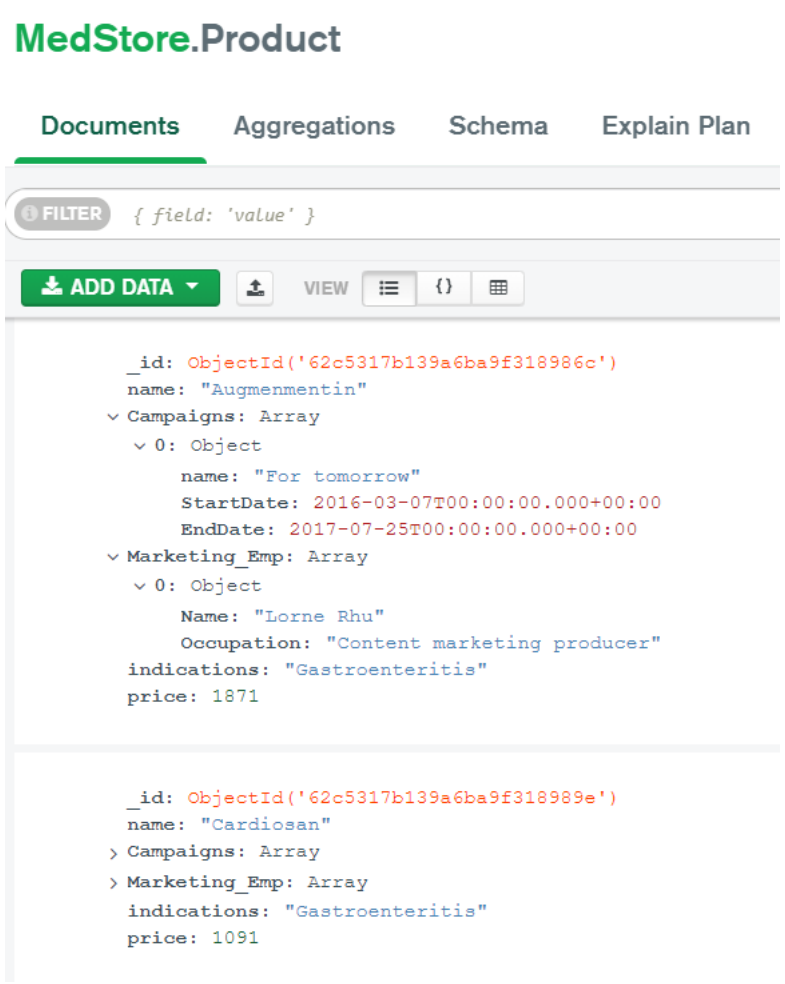
FILTER { field: 'value' }

ADD DATA | VIEW

```
_id: ObjectId('62c5318f139a6ba9f318db80')
name: "?Dennehy Computing Ltd"
country_name: "Romania"

_id: ObjectId('62c5318f139a6ba9f318dbb5')
name: "Mallard Party Supplies Ltd"
country_name: "Switzerland"

_id: ObjectId('62c5318f139a6ba9f318dbce')
name: "Simmons Coachworks Ltd"
country_name: "Slovakia"

_id: ObjectId('62c5318f139a6ba9f318dbec')
name: "Nolan Exhibitions Ltd"
country_name: "Luxembourg"
```

```
1166  @app.route("/Af2", methods=['GET'])
1167  def Af2():
1168      #------------   ABFRAGE2 ----------------------
1169      nameOfCountry = str(request.values.get("country"))
1170      nameOfClient = str(request.values.get("name"))
1171
1172      newDoc = { "$set":{ "name": nameOfClient, "country_name":nameOfCountry }}
1173
1174      collection=dbDrug['Client']
1175      collectionRegion=dbDrug['Region']
1176      res= f"The Client with the Name {nameOfClient} was inserted"
1177      filter = { 'name': nameOfClient }
1178      count =  (collectionRegion.count_documents({ "Countries" : nameOfCountry }))
1179      if count == 1:
1180
1181          filter = { 'name': nameOfClient }
1182          collection.update_one(filter, newDoc,  True)
1183
1184      else:
1185          res= "The company does not supply the country"
1186
1187      session["res2"] = res
1188
1189      return render_template('credits.html',t=title,h=heading, results= resultFromSession())
```

Use Case 2: Register Product in NoSQL




```python
@app.route("/Af1", methods=['GET'])
def Af1():
    #-----------   ABFRAGE1----------------------
    nameOfProduct = str(request.values.get("name"))
    indication = str(request.values.get("indication"))
    try:
        price = int(request.values.get("price"))
    except Exception:
        session["Af1Info"] = f"Price need to be an int3"
        return render_template('credits.html',t=title,h=heading, results= resultFromSession())
    try:
        campaignslocal = session["campaigns"]
    except Exception:
        campaignslocal = []
    try:
        marketingEmplocal = session["marketingEmp"]
    except Exception:
        marketingEmplocal = []

    newDoc = { "$set":{ "name": nameOfProduct, "indications": indication,
         "price": price , "Campaigns": campaignslocal, "Marketing_Emp": marketingEmplocal}}

    collection=dbDrug['Product']
    filter = { 'name': nameOfProduct }
    collection.update_one(filter, newDoc,  True)

    res = "The following product was inserted: " + nameOfProduct
    print(f"[INFO] {res}")
    session["res1"] = res
    return render_template('credits.html',t=title,h=heading, results= resultFromSession())
```

NoSQL Reports

- Report 1: Find Clients in Country

```
1281        countryName = request.values.get("country")
1282        coursor = collection.find( { "country_name": countryName } ).sort("country_name", 1)
```

- Report 2: Find Products under price limit

```
1255        collection=dbDrug['Product']
1256        coursor = collection.find( { "price": { "$lt": numberMonth } } ).sort("price", -1).limit(5)
```

Sources

- Free MySQL Hosting www.*freemysqlhosting.net*
- MongoDb Atlas www.mongodb.com/atlas/database