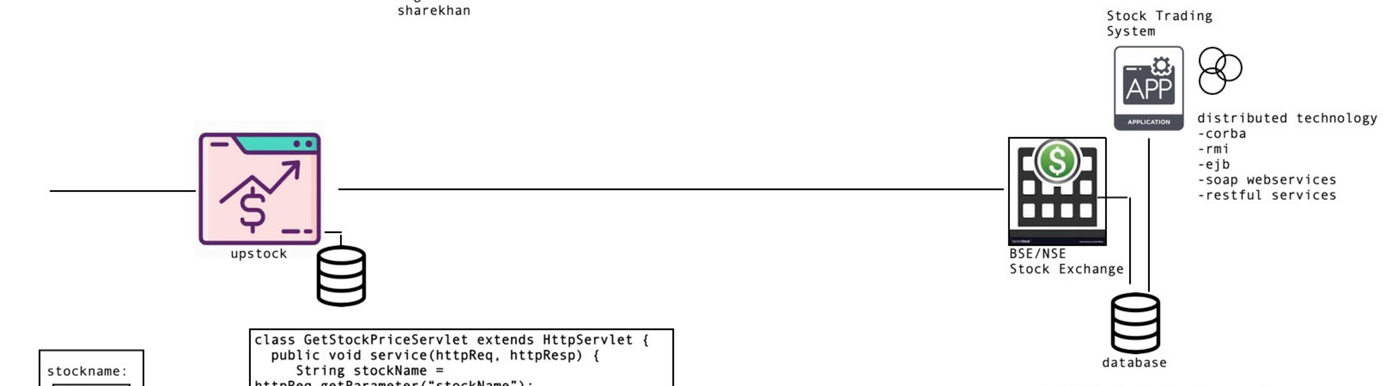
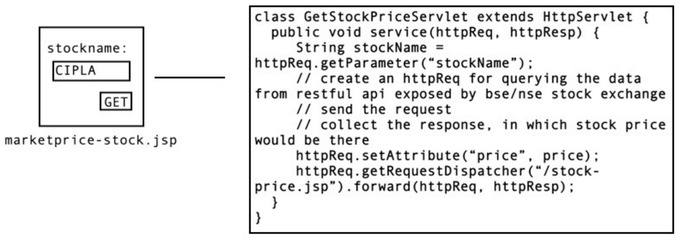
icicidirect
zerodha
grow
angleone
sharekhan






```
class GetStockPriceServlet extends HttpServlet {
  public void service(httpReq, httpResp) {
     String stockName =
httpReq.getParameter("stockName");
     // create an httpReq for querying the data
from restful api exposed by bse/nse stock exchange
     // send the request
     // collect the response, in which stock price
would be there
     httpReq.setAttribute("price", price);
     httpReq.getRequestDispatcher("/stock-
price.jsp").forward(httpReq, httpResp);
  }
}
```

```
#1 req
CIPLA = 202.23
#2 req
CIPLA = 202.23
#3 req
CIPLA = 202.23
#4 req
CIPLA = 203.10
```

```
#1. req
RANBAX = 123.44
#2
RANBAX = 123.44
#3
RANBAX = 123.44
#4
RANBAX = 123.44
#5
RANBAX = 122.14
```

1. Stock (price) = 3 seconds
3000 milliseconds

9 am (opening bell) - 3:30 pm = 6.5 hours
6.5 hours = 20 lacs
->
---
1. price (70%)
2. buy
3. selling
4. history
6. browsing company info

6.5 hours, price (70%) = 15 lacks
390 minutes = 1500000
1 minute = 3846
1 second = 64 requests

3 seconds = 200 requests

1.millisecond = CIPLA
3 seconds = %CIPLA = 15% = 30 requests

1 million =

business operations on the database:
we should not perform business operations on the underlying database directly:
1. BSE/NSE Stock Exchange agents should be knowing the IT Technology, and should be good sql queries and database technology to perform operations on the underlying database which is not true
2. If the agents has to perform the operations on the underlying database, they should construct complex sql queries in managing to query/store the data. but there is no guarantee the queries they have written are correct and produces acurate/desired output due to which the organization might run into huge losses
3. since these queries are not validated, performing any data manipulation operations directly on the database could be harmful, because incorrect query might corrupt all the data on the underlying database
4. since the data is not validated, invalid data might inserted/added into the database
5. it takes lot of time to carry-out business operations in constructing the queries manually in carrying the operations and might be errorneous as well.
So always it is adviced not to perform operations on the underlying data of the database directly, always use an software applications for perform business operations and managing the data on the underlying database
advantages of software applications:
1. any one can carry the business operations with no knowledge on IT, they should only posses business knowledge
2. no need to construct queries in retrieving/storing the data, the developer aspart of the application itself has pre-coded these queries through which the operations are performed on the database. Since these are pre-coded, pre-tested/validated there is no chance something goes wrong while performing the operations on the underlying database.
Always carrying business operations through software application is Safe aswell.
3. The application always validates the data that is provided, so there is no chance that bad data enters into the system
4. saves huge time!

How does the upstock can access the stock information or perform operations like buy/sell stocks onbehalf of their customers?
They need access to the underlying database of the BSE/NSE Stock Exchange, If BSE/NSE Stock exchange has provided credentials information in allowing them to access the data on the underlying database directly we run into several problems:
1. always databases are internal resources of an organization, exposing them directly to the business partners would be an security breach
2. The partners might steal or access all the data on the underlying database
3. if the direct access to the database has been provided to the external partners, they have unrestricted access to the underlying database, due to they might modify, manipulate or corrupt the data on the database that results in huge losses

4. if partners has to access the data from BSE/NSE exchange database directly they need to know the schema/tables of the others which is very complex
5. any change in underlying database would effect the partner applications

```
class GetStockPriceServlet extends HttpServlet {
  public void service(httpReq, httpResp) {
     double price = 0.0;
     boolean hit = false;

     String stockName = httpReq.getParameter("stockName");
     Cache cache = Cache.getInstance();

     if(cache.containsKey(stockName) == true) {
       Stock stock = (Stock) cache.get(stockName);
       long ct = Calendar.getInstance().getTimeInMilliSeconds();
       if((ct - stock.getLat()) <=3000) {
         price = stock.getPrice();
         hit = true;
       }
     }
     if(hit == false) {
       // create the httpReq with URI and queryParam as "stockName"
       // send the httpReq to the BSE/NSE StockExchange api
       // extract the price from the httpResponse received
       stock = new Stock();
       stock.setStockName(stockName);
       stock.setPrice(price);
       stock.setLat(Calendar.getInstance().getTimeInMilliSeconds());
       cache.put(stockName, stock);
     }
     httpReq.setAttribute("stockName", price);
     httpReq.getRequestDispatcher("/stockprice.jsp").forward(httpReq, httpResp);
  }
}

class Stock {
  String stockName;
  double price;
  long lat;
  // accessors
}
```