Support and improvement of the web application

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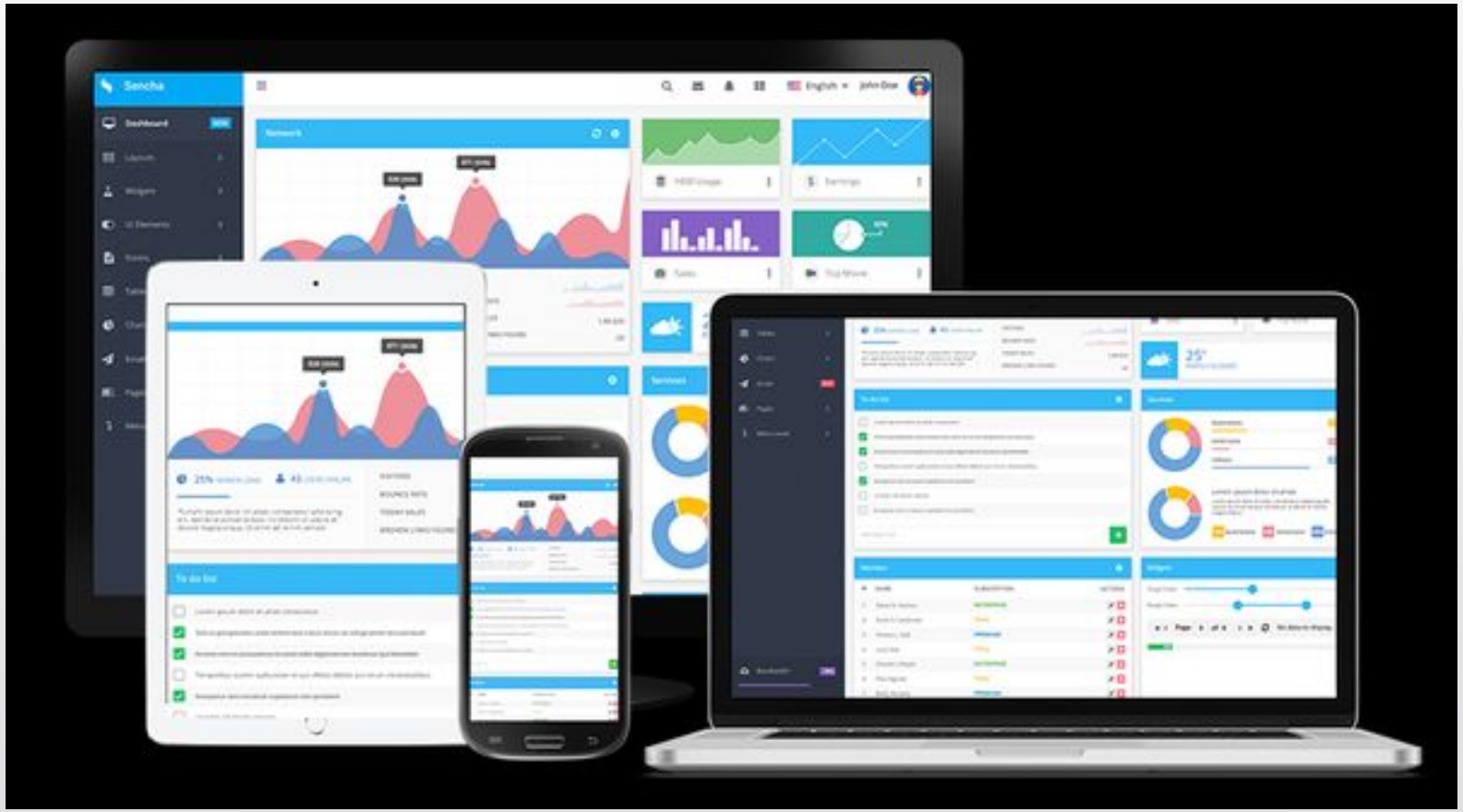
- Improving the client part
- Optimization of the server part
- Database refactoring

Improving the client part



The need of well-crafted UI

Optimization of the server part

Server optimization problems

How to

Make server

run faster

Simplify procedure

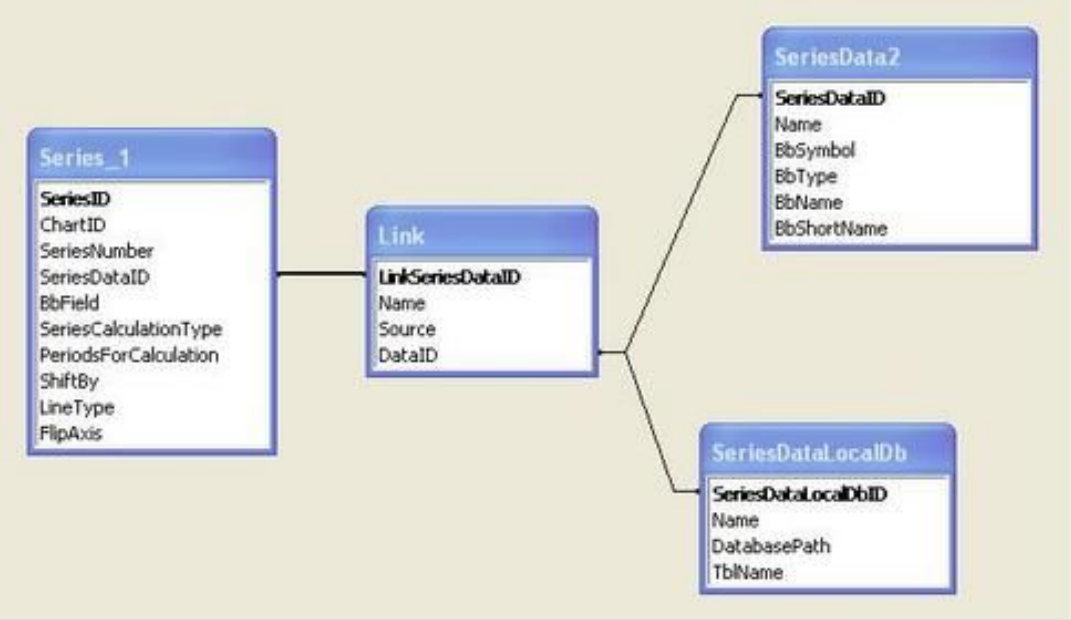
Solutions

- Getting rid of repetitive code sections
- Partitioning large modules into submodules

Database refactoring

Database refactoring

Structure of database



Writing queries

Worksheet | Query Builder

```
CREATE TABLE  DAILY_SUPPORT_SUMMARY(
TICKET_DATE     date,
TOTAL_TICKETS_OPENED  number(9),
TOTAL_CLOSED      number(9),
TOTAL_WIP     number(9),
PERCENTAGE_PROCESSED  number(9,2) AS (((TOTAL_CLOSED + TOTAL_WIP)/ TOTAL_TICKETS_OPENED)*100) VIRTUAL,
PERCENTAGE_CLOSED   number(9,2) GENERATED ALWAYS AS ((TOTAL_CLOSED/ TOTAL_TICKETS_OPENED)*100) ,
PERCENTAGE_WIP    number(9,2) AS ((TOTAL_WIP/ TOTAL_TICKETS_OPENED)*100)
);

INSERT INTO DAILY_SUPPORT_SUMMARY (TICKET_DATE, TOTAL_TICKETS_OPENED, TOTAL_CLOSED, TOTAL_WIP) VALUES ('01-May-15', 150, 100, 50);
INSERT INTO DAILY_SUPPORT_SUMMARY (TICKET_DATE, TOTAL_TICKETS_OPENED, TOTAL_CLOSED, TOTAL_WIP) VALUES ('02-May-15', 250, 250, 0);
INSERT INTO DAILY_SUPPORT_SUMMARY (TICKET_DATE, TOTAL_TICKETS_OPENED, TOTAL_CLOSED, TOTAL_WIP) VALUES ('01-May-15', 90, 50, 40);
COMMIT;


SELECT * FROM DAILY_SUPPORT_SUMMARY;

drop table daily_support_summary;
```

Script Output | Query Result

SQL | All Rows Fetched: 3 in 0.004 seconds

	TICKET_DATE	TOTAL_TICKETS_OPENED	TOTAL_CLOSED	TOTAL_WIP	PERCENTAGE_PROCESSED	PERCENTAGE_CLOSED	PERCENTAGE_WIP
1	01-MAY-15	150	100	50	100	66.67	33.33
2	02-MAY-15	250	250	0	100	100	0

Incorrect database structure

id	name	street
1	Alex	Karl Marx
2	Jill	K. Marx
3	Joan	K. Marx
4	Oliver	karl marx
5	Thomas	Karl Marx

Correct database structure

id	name	street_id
1	Alex	1
2	Jill	1
3	Joan	1
4	Oliver	1
5	Thomas	1

id	name
1	Karl Marx

Writing queries

id	name	street_id
1	Alex	1
2	Jill	2
3	Joan	1
4	Oliver	3
5	Thomas	2

Table “A”

id	name
1	Karl Marx
2	Baker
3	Damien

Table “B”

Writing queries

1. SELECT … FROM (A * B) WHERE STREET = “BAKER”;

   $O(N^2)$

2. SELECT … FROM A *
   (SELECT … FROM B
   WHERE STREET = “BAKER”);

   $O(N)$

N times less time

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