

# GROUP 64 E-Caseform

# 4 Questions



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**WHAT DOES THE  
CLIENT WANT?**

# 4 Questions

WHAT DOES THE  
CLIENT WANT?

WHAT DID WE  
DO?

# 4 Questions

WHAT DOES THE  
CLIENT WANT?

WHAT DID WE  
DO?

WHY CHOOSE  
US?

# 4 Questions

WHAT DOES THE  
CLIENT WANT?

WHAT DID WE  
DO?

WHY CHOOSE  
US?

HOW WOULD  
WE IMPROVE?



What does the client want?

“Dynamic versioning”



“Role based access system”



“Analyse data”







What did we do?



# User stories

- 1 As an admin, I want to create new versions dynamically.
- 2 As a doctor, I want to fill up those versions.
- 3 As a doctor, I want to be able to analyse data.
- 4 As a patient, I want to view my CRFs.

# 1<sup>st</sup> user story

As an admin, I want to create  
new versions dynamically.



Login  
Create  
Submit

## 2<sup>nd</sup> user story

As a doctor, I want to fill up those versions.



Dashboard

Create patient

Create form

## 3<sup>rd</sup> user story

As a doctor, I want to be able to  
analyse data.



Check the graph again

# 4<sup>th</sup> user story

As a patient, I want to view  
CRF's.



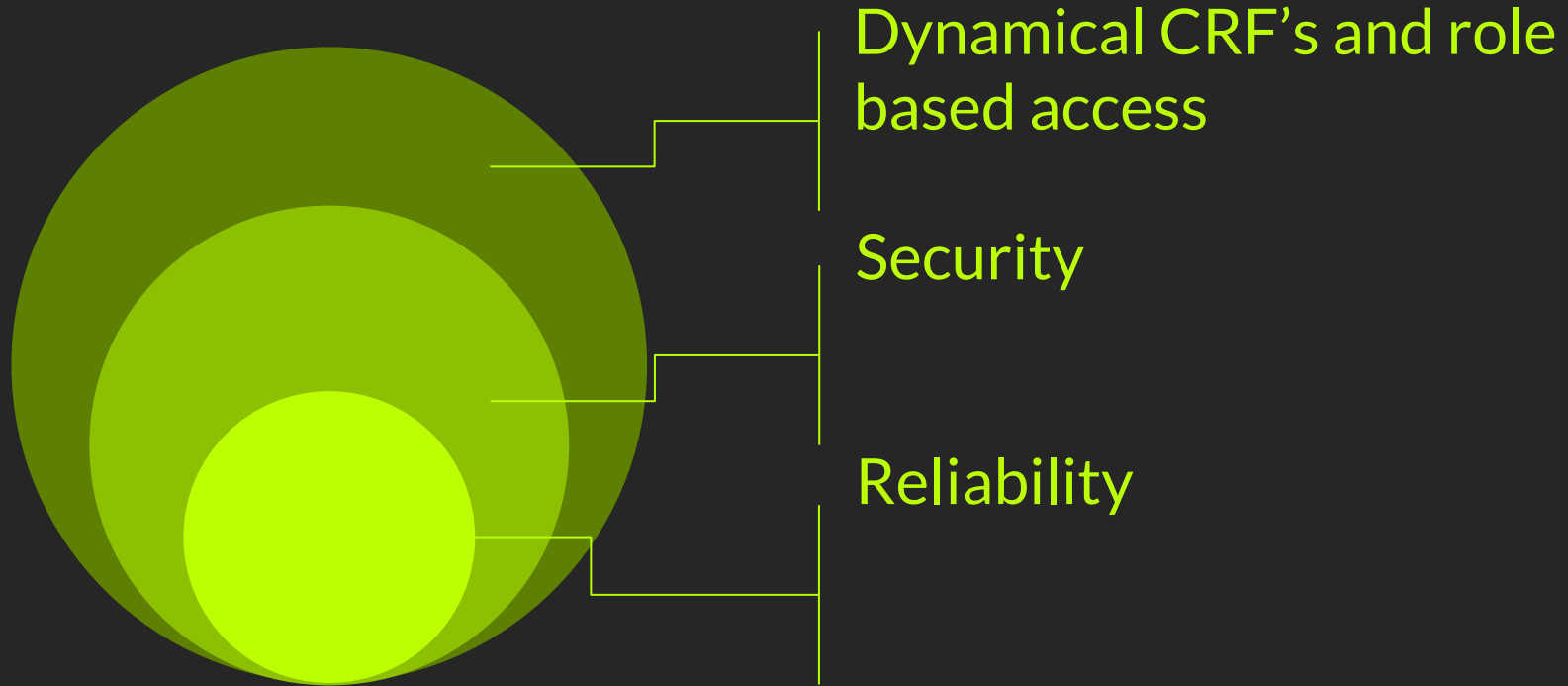
Login

View CRF



Why choose us?

# What hospitals want?





# How do we know what hospitals want?

*“Tepecik Training and  
Research Hospital”  
Izmir, Turkey  
\*used as a pandemy  
hospital now*



**“Product  
testing”**

# Reliability

Our product is reliable because



Intense system testing

Specially integrated database

Overall high quality code

<input type="checkbox"/>	getallversions ()	json	dab_di19202b_197	sql	Alter	Drop	Privileges
<input type="checkbox"/>	getanalysis (integer)	json	dab_di19202b_197	plpgsql	Alter	Drop	Privileges
<input type="checkbox"/>	getanalysisagegroup (integer, integer, integer)	json	dab_di19202b_197	plpgsql	Alter	Drop	Privileges
<input type="checkbox"/>	getanswersjson (integer, integer)	json	dab_di19202b_197	sql	Alter	Drop	Privileges
<input type="checkbox"/>	getchoicejson (integer)	json	dab_di19202b_197	sql	Alter	Drop	Privileges
<input type="checkbox"/>	getcrrf (integer, integer)	setof record	dab_di19202b_197	sql	Alter	Drop	Privileges
<input type="checkbox"/>	getcrrfids (integer)	json	dab_di19202b_197	sql	Alter	Drop	Privileges
<input type="checkbox"/>	getcrrfjson (integer)	json	dab_di19202b_197	sql	Alter	Drop	Privileges
<input type="checkbox"/>	getcrrfsectioned (integer, integer)	setof record	dab_di19202b_197	sql	Alter	Drop	Privileges
<input type="checkbox"/>	getcrrfspersday ()	json	dab_di19202b_197	plpgsql	Alter	Drop	Privileges
<input type="checkbox"/>	getdateanalysis (integer)	setof record	dab_di19202b_197	plpgsql	Alter	Drop	Privileges
<input type="checkbox"/>	getdateanalysisagegroup (integer, date, date)	setof record	dab_di19202b_197	plpgsql	Alter	Drop	Privileges
<input type="checkbox"/>	getdateanalysisagejson (integer, date, date)	json	dab_di19202b_197	plpgsql	Alter	Drop	Privileges
<input type="checkbox"/>	getdateanalysisjson (integer)	json	dab_di19202b_197	plpgsql	Alter	Drop	Privileges
<input type="checkbox"/>	getdateanalysispid (integer, integer)	setof record	dab_di19202b_197	plpgsql	Alter	Drop	Privileges
<input type="checkbox"/>	getdateanswer (integer)	json	dab_di19202b_197	sql	Alter	Drop	Privileges
<input type="checkbox"/>	getdtpid (integer)	json	dab_di19202b_197	sql	Alter	Drop	Privileges
<input type="checkbox"/>	getexistinganswers (integer, integer)	json	dab_di19202b_197	sql	Alter	Drop	Privileges
<input type="checkbox"/>	gethospital (integer)	json	dab_di19202b_197	sql	Alter	Drop	Privileges
<input type="checkbox"/>	getintanalysisagegroup (integer, date, date)	setof record	dab_di19202b_197	plpgsql	Alter	Drop	Privileges
<input type="checkbox"/>	getintanalysisagejson (integer, date, date)	json	dab_di19202b_197	plpgsql	Alter	Drop	Privileges

Class, %	Method, %	Line, %
100% (6/ 6)	94.1% (48/ 51)	96.6% (320/ 331)

Class, %	Method, %	Line, %
100% (1/ 1)	70% (7/ 10)	54.5% (30/ 55)
100% (1/ 1)	100% (13/ 13)	100% (70/ 70)
100% (1/ 1)	100% (7/ 7)	100% (40/ 40)
100% (2/ 2)	100% (10/ 10)	85.5% (59/ 69)
100% (1/ 1)	100% (11/ 11)	99% (96/ 97)

Specially integrated database

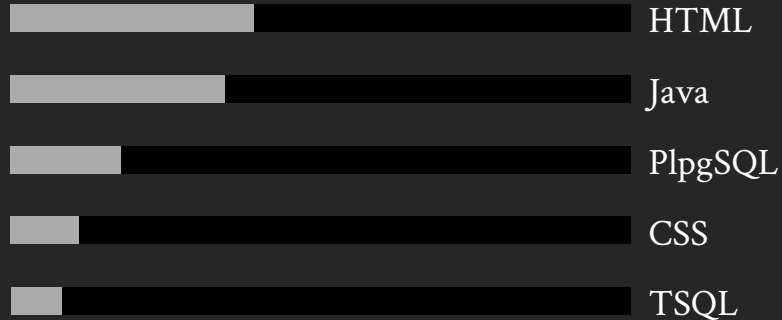
Intense system testing

# Overall high quality code

codefactor A+

<https://github.com/codefactor-io>

The languages by percentage



# Security

```
function htmlEscape(str) { //inspired by
    // silverlightFox "https://secure.silverlightfox.com/
    // but updated
    return String(str)
        .replace(/&/g, '&amp;')
        .replace(/"/g, '&quot;')
        .replace(/'/g, '&#x27;')
        .replace(/</g, '&lt;')
        .replace(/>/g, '&gt;')
        .replace(/'/g, '&#x2F;');
}
```

## XSS

1. Reflected XSS protection
2. Input validation
3. Input sanitization

```
* @throws SQLException throws a SQLException
*/
public String getAllVersions() throws SQLException {
    connection = GlobalVariables.getConnection();
    String sqlRetrieveVersions = "SELECT * FROM Versions";
    PreparedStatement retrieveVersions = connection.prepareStatement(sqlRetrieveVersions);

    ResultSet resultSQL = retrieveVersions.executeQuery();
    resultSQL.next();

    return resultSQL.getString(1);
}
```

## SQL Injections

Field	Value
Issuer	can olmezoglu, group64, ...
Valid from	Friday, 26 June 2020 03:...
Valid to	Thursday, 24 September ...
Subject	can olmezoglu, group64, ...
Public key	RSA (2048 Bits)
Public key parameters	05 00
Subject Key Identifier	ba2bd39b32c26e187fb1...
Thumbprint	17275ddf6ebf6d2f33320...

CN = can olmezoglu  
OU = group64  
O = twenteuni  
L = enschede  
S = overijssel  
C = nl

## HTTP/SSL

```
String sql = "SELECT * FROM Users";
PreparedStatement statement = connection.prepareStatement(sql);
statement.setString(1, parameterIndex);
ResultSet result = statement.executeQuery();
String role = null;
result.next();
Argon2 argon2 = Argon2Factory.create();
if (argon2.verify(result.getString(1), result.getString(2))) {
    role = result.getString(3);
}
return role;
}
```

## Argon Hashing

# Things we are proud of

- 1 An extensive database
- 2 Very maintainable code
- 3 Already good enough security
- 4 System testing
- 5 Dynamic system



# Lessons learned

“Making a better initial design”



How would we improve?



# Version 2.0

- 1 A view for doctor
- 2 A patient can register themselves
- 3 A maintainer
- 4 A researcher
- 5 Edit CRF



One more question left!



Why would a hospital like you not help  
their patients with a  
*reliable, accessible, maintainable*  
product like this?

Reach us from this  
contact card to  
keep yourself  
updated!

