

100162.0pt100



ft_transcendence
is
a
com-
pre-
hen-
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Pong
gam-
ing
plat-
form
com-
bin-
ing:

Create
a
mod-
ern,
scal-
able
Pong
gam-
ing
plat-
form
that

Coverage:

Im-

ple-

men- ✓ TypeScript

ta- full

tion: project



✓ Database

Web

an-

pli-

Module

4:

User- Man- agement



Tournament

Registration

etion



lo-

gin Bracket

1

Blockchain In- te- gra- tion (5 points)



Smart
con-
tract
for

Category	Target	Achieved	Status
Mandatory Part	25 pts	25 pts	green!30✓
Major Modules	70 pts	70 pts	green!30✓
Bonus Modules	30 pts	30 pts	green!30✓
Total Points	125 pts	125 pts	green!30✓
Automated Tests	180	180	green!30✓
Code Quality	High	Verified	green!30✓
Documentation	Complete	Delivered	green!30✓



Phase

1

(Weeks

1-

2):

Re-

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De-

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Ar-

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DevOps

Asac-

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ance:



Infrastructure

Test-

Code



de-

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on



Auth Ser- vice:

User
au-
then-
ti-
ca-
tion,
JWT

Backend:

&

Storage:

Frontend: React

18.x



SQLite

Vite



(build

Prisma



ORM



TypeScript

Redis



Elasticsearch

Frontend
(React/Vite/TypeScript)

API
Gateway
(Nginx,
Load
Balancer)

- Server-
authoritative
game
loop
at
60
FPS

- Client-
side
pre-
dic-

Userboards:

Man-

age-

ment

- Global rank-
- ing
- Account
- reg
- Win/loss
- is-
- track-
- tra-
- ing
- tion



Smart
con-
tract
for
tour-
na-
ment
ver-
i-
fi-
ca-
tion



Immutable
tour-



**Right
to
Ac-
cess:**
Data
ex-
port
in
JSON
for-



Unit Tests:

Ser-
vice
logic,
util-
i-
ties,
cal-
cu-
la-



Centralized
log
ag-
gre-
ga-
tion



Full-
text
search
across
logs





21
con-
tain-
ers
for
com-
plete
stack



Service
de-
pen-
den-
cies

Code structure:

Met-

rics:

- Docker

- Con-

- Total

- lines

- of

- Code:

- 50,000+

-

- Deployment

- Time:

- 4 mi-

- 5 browser-

- times



Issue:

Net-
work
la-
tency
causes
game-
play
desyn-
chro-
niza-



125/125

Points:

All
re-
quire-
ments
met
and
ex-
ceeded



125



TypeScript

pro-
vides

sig-
nif-

i-

cant

safety

ben-

e-

fits



Decision:

SQLite
for
single-
node
de-
ploy-
ment

1

Backend Ar- chi- tec- ture & Auth Ser- vice



- Implement
real-
time
game
en-
gine



Design
and
im-
ple-
ment
web



Design
tour-
na-
ment
sys-
tem



Design
Docker
Com-
pose
in



Implement
com-



Single Game

Type:

Only
Pong
im-
ple-
mented
(by
de-
sign)



**Max
2
Play-**

- Support
mul-
ti-
ple
game
modes
(Chess,
Check-
ers,
etc.)

- Enable



README.md:

Project
overview
and
quick
start



TECHNICAL_REPORT.pdf:

35-

page

- ✓ Start
Docker
con-
tain-
ers:
make
full-start

- ✓ Verify
ser-
vices

- Introduction
(5 min):
Project
overview
and
vi-
sion

- Requirements
(5 min):

Q:
How
does
real-
time
syn-
chro-
niza-
tion
work?

A:

Thank You

ft_transcendence
Cap-
stone
Project

125/125
Points

|

180/180
Tests

|

6