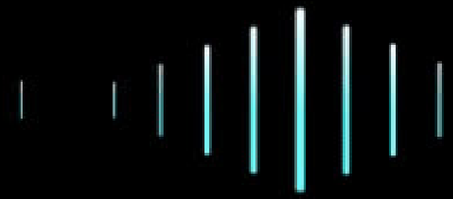


sentinel

ZITON

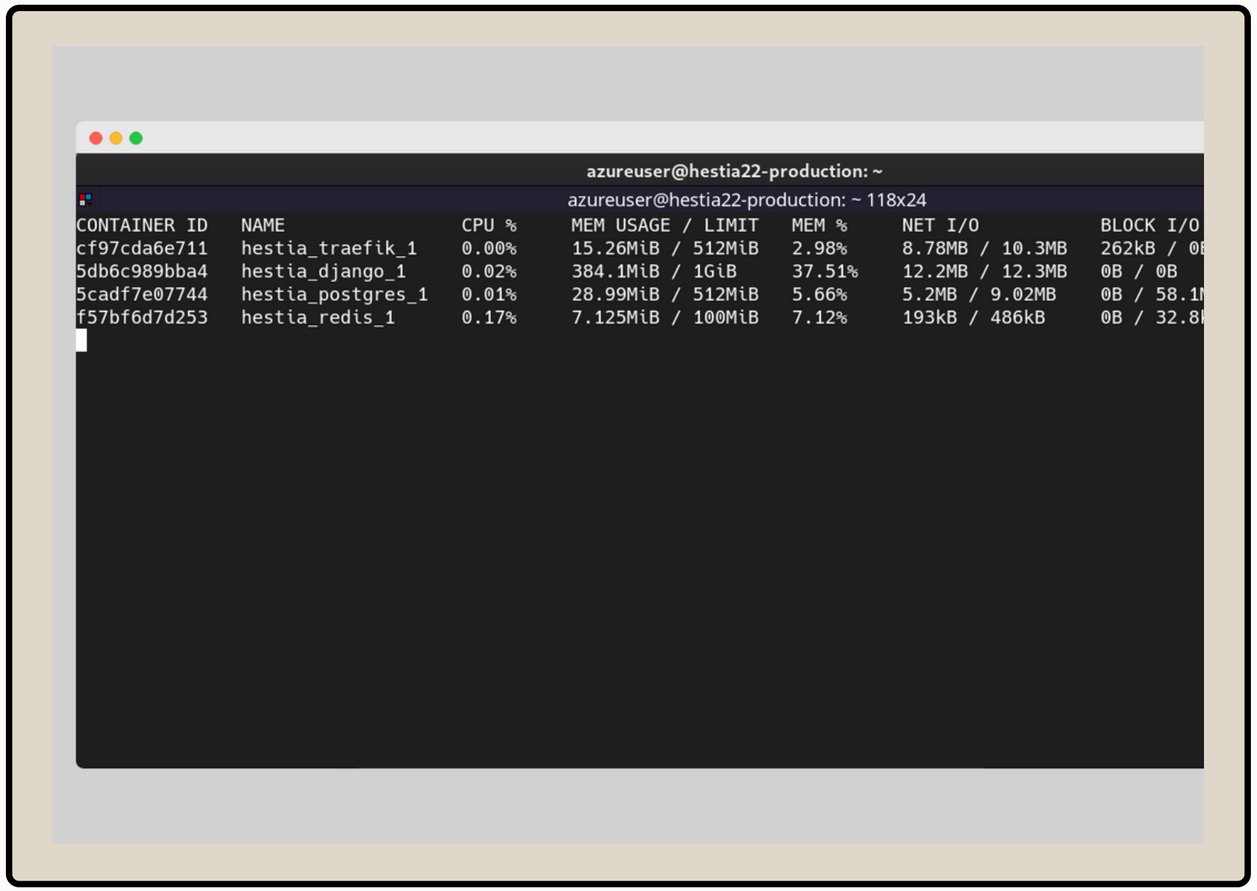
LINUX SYSTEM APPLICATION OBSERVABILITY
AND FULL-STACK ERROR REPORTING SYSTEM

UNDETECTABLE PROCESS SPAWNING @NETFLIX

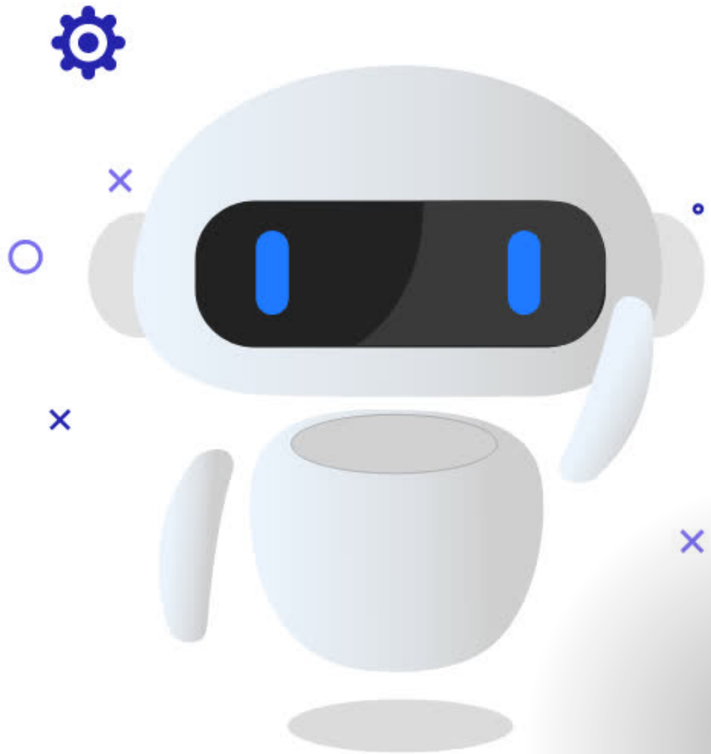
```
TIME(s) PCOMM         PID    PPID   RET ARGS
0.437   run           15524  4469     0 ./run
0.438   bash          15524  4469     0 /bin/bash
0.440   svstat        15526  15525    0 /command/svstat /service/httpd
0.440   perl          15527  15525    0 /usr/bin/perl -e $l=<>;$l=~/(\d+) sec/;prin...
0.442   ps            15529  15528    0 /bin/ps --ppid 1 -o pid,cmd,args
[...]
0.487   catalina.sh   15524  4469     0 /apps/tomcat/bin/catalina.sh start
0.488   dirname       15549  15524    0 /usr/bin/dirname /apps/tomcat/bin/catalina.sh
1.459   run           15550  4469     0 ./run
1.459   bash          15550  4469     0 /bin/bash
1.462   svstat        15552  15551    0 /command/svstat /service/nflx-httpd
1.462   perl          15553  15551    0 /usr/bin/perl -e $l=<>;$l=~/(\d+) sec/;prin...
```

Brendan Gregg, internationally renowned expert in computing performance. Former senior performance architect at Netflix.

→



CONTAINER OVERLOADING @ HESTIA2022



WHAT IS ZITON

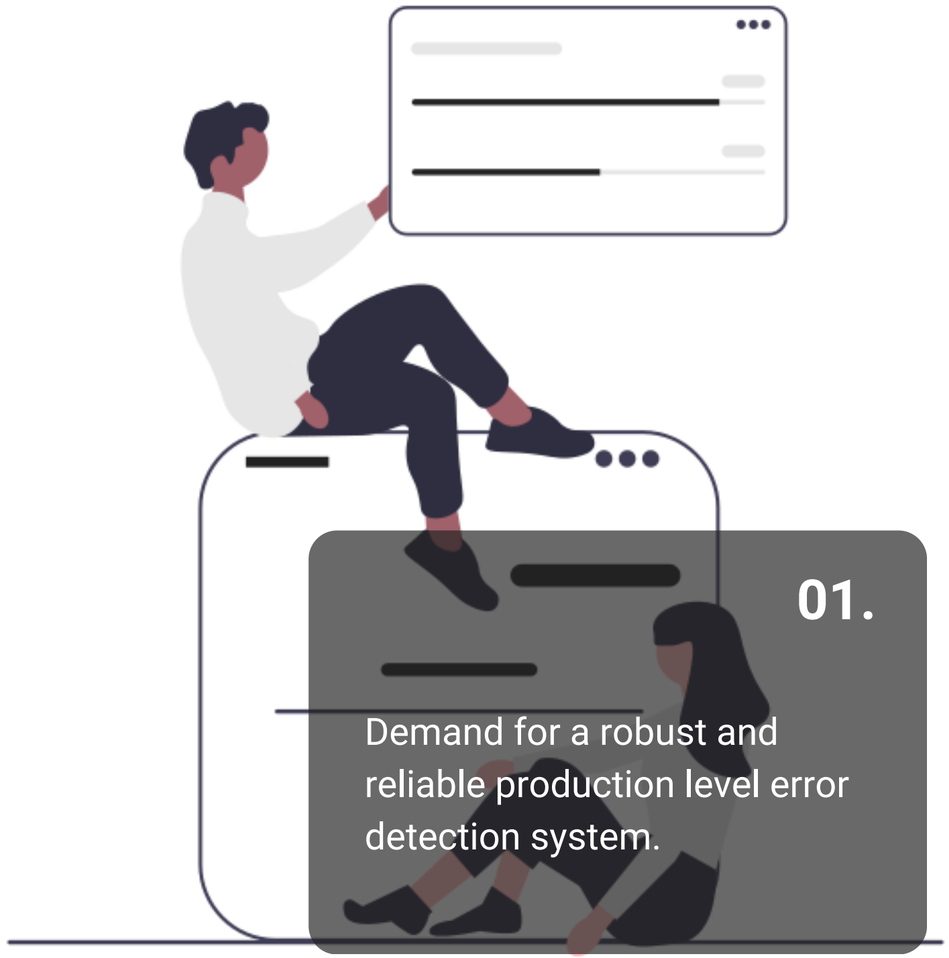
Developers can see what matters most, fix problems faster, and learn more about their apps over time - from the frontend to the backend.

PERFORMANCE MONITORING

Quickly identify performance issues before they become downtime

ERROR TRACKING SYSTEM

Real-time insight into production deployments with info to reproduce and fix crashes



WHY ZITON ?

01.

Demand for a robust and reliable production level error detection system.

02.

Reproducing Errors Environments are quite difficult and challenging

03.

Need for production environment Health Monitoring and Reporting.

WHY ZITON ?

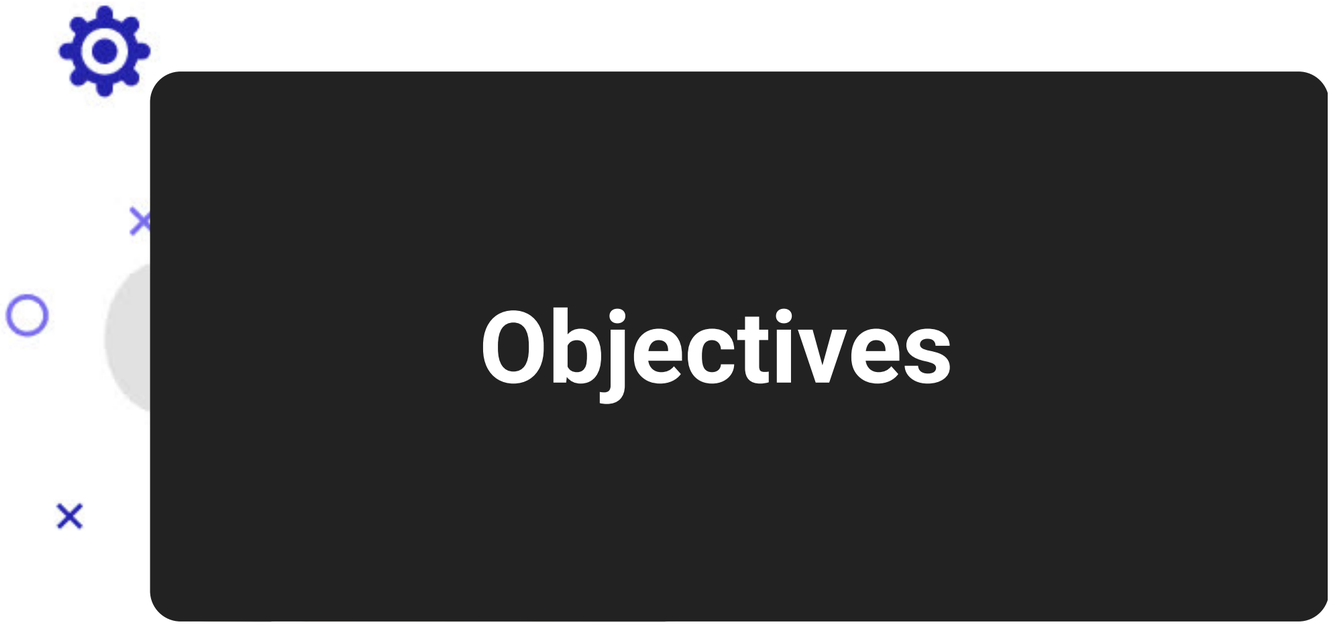
4

Reproducing Errors
Environments are quite difficult and challenging

5

Inaccessibility and inscrutable nature of Stack Trace in Terminal.

Licensed Under GPL



Objectives

01

ERROR DETECTION

Implement a reliable and robust Production Level Error Detection System

02

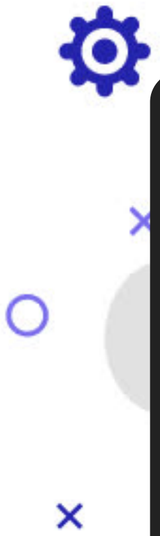
PERFORMANCE MONITORING

Quickly identify performance issues before they become downtime

03

APPLICATION OBSERVABILITY

Enables to know and investigate in a timely fashion how the software system performs with all available data.



Objectives

04

ASSIGN DEVELOPERS

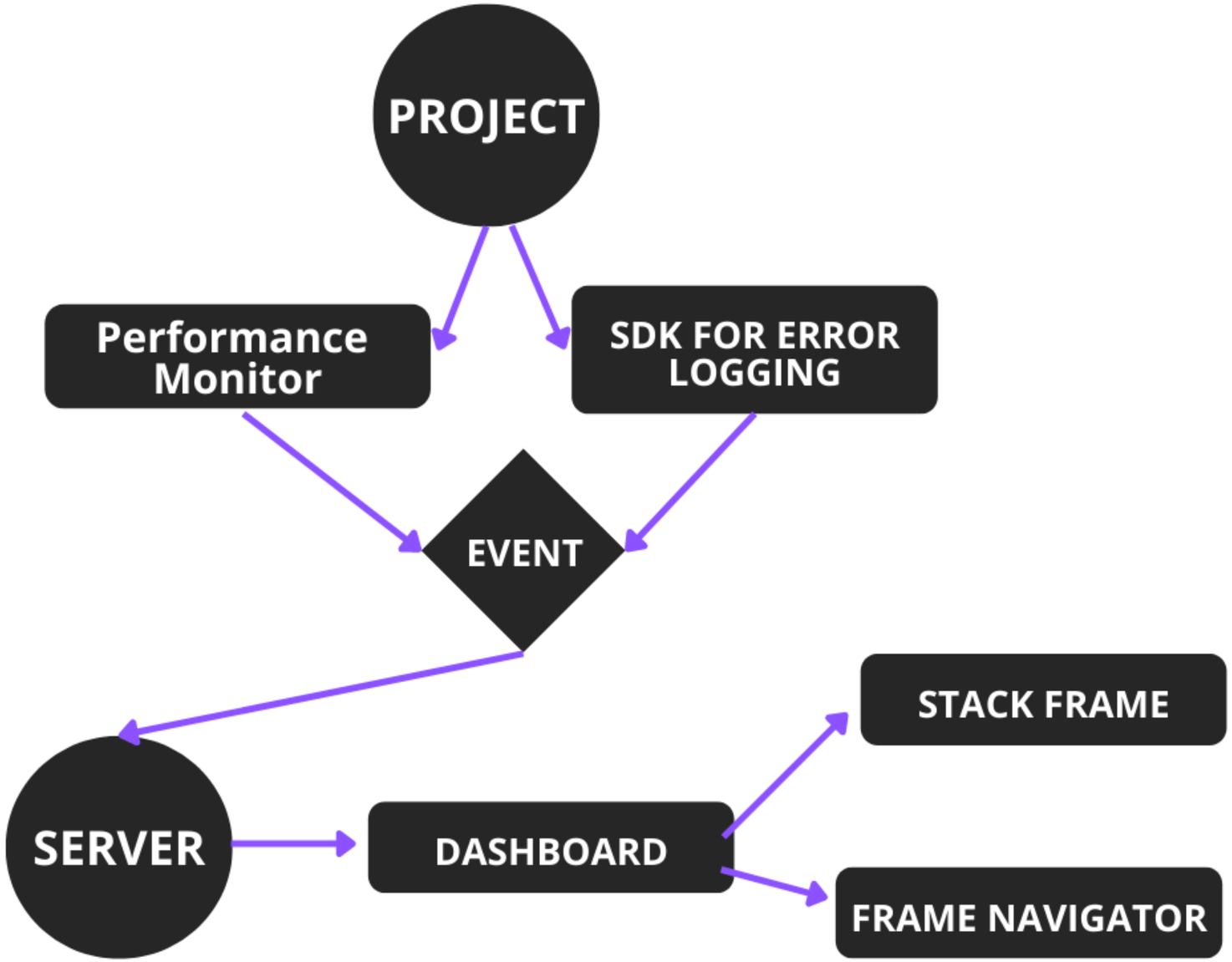
Issue Owners put control back in the hands of developers to fix what’s broken in their code.

05

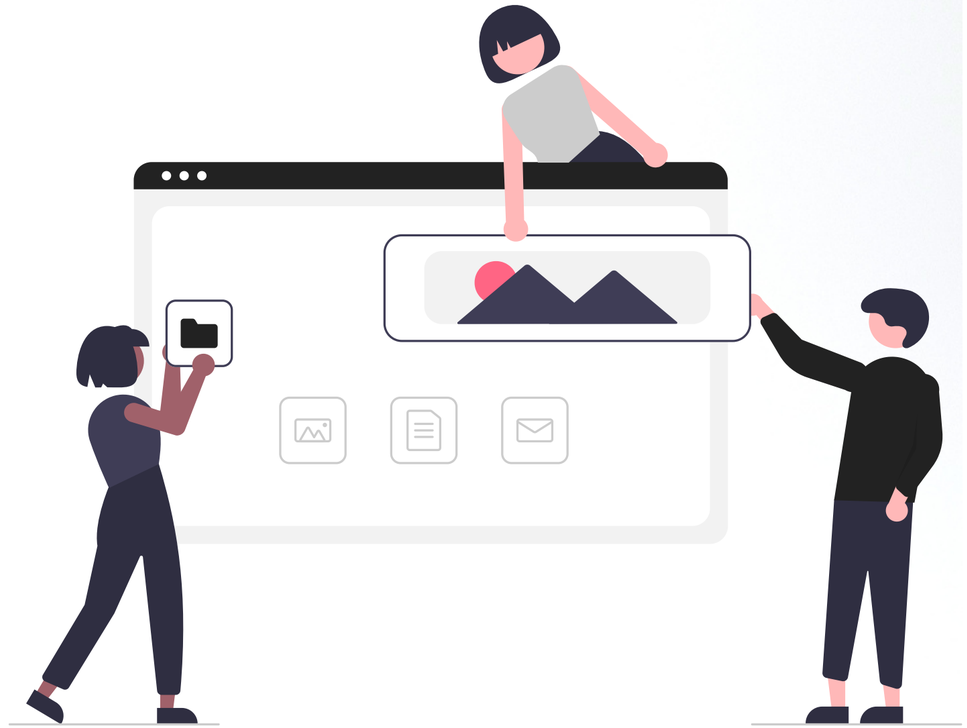
DATA VISUALIZED & STACK TRACE

Dashboards add a visual element to our application monitoring. Stack Trace is displayed using Frame View and Frame Navigator

Architecture



Modules



01

ERROR MANAGEMENT

Frame View and Frame Navigator which help users interact with their error

02

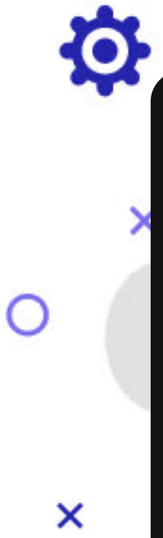
APPLICATION OBSERVABILITY

Periodic Monitoring of Resources used by the Production Environment

03

LANGUAGE SDK

Wrappers and interface function to communicate with hooks



MODULE 1
ERROR MANAGEMENT

01

HOOKS & DETECTORS

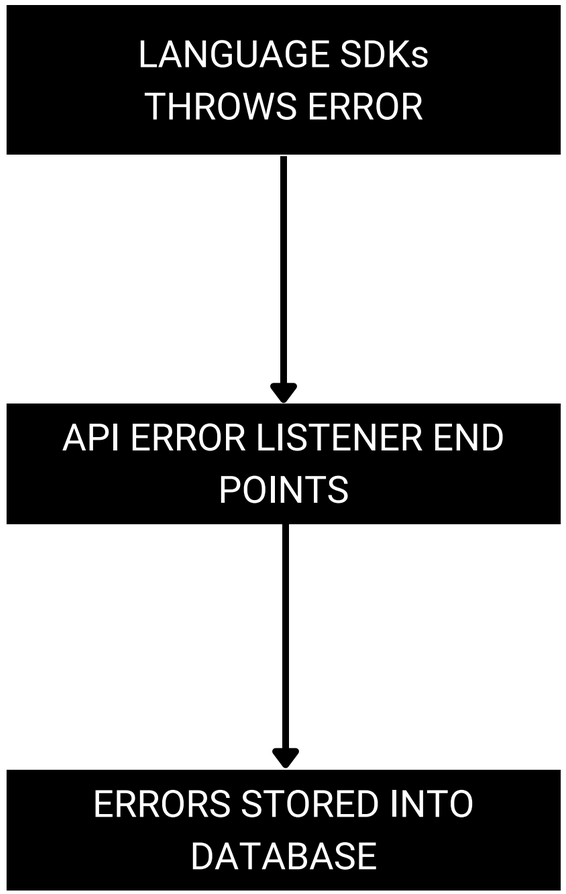
02

PARSERS

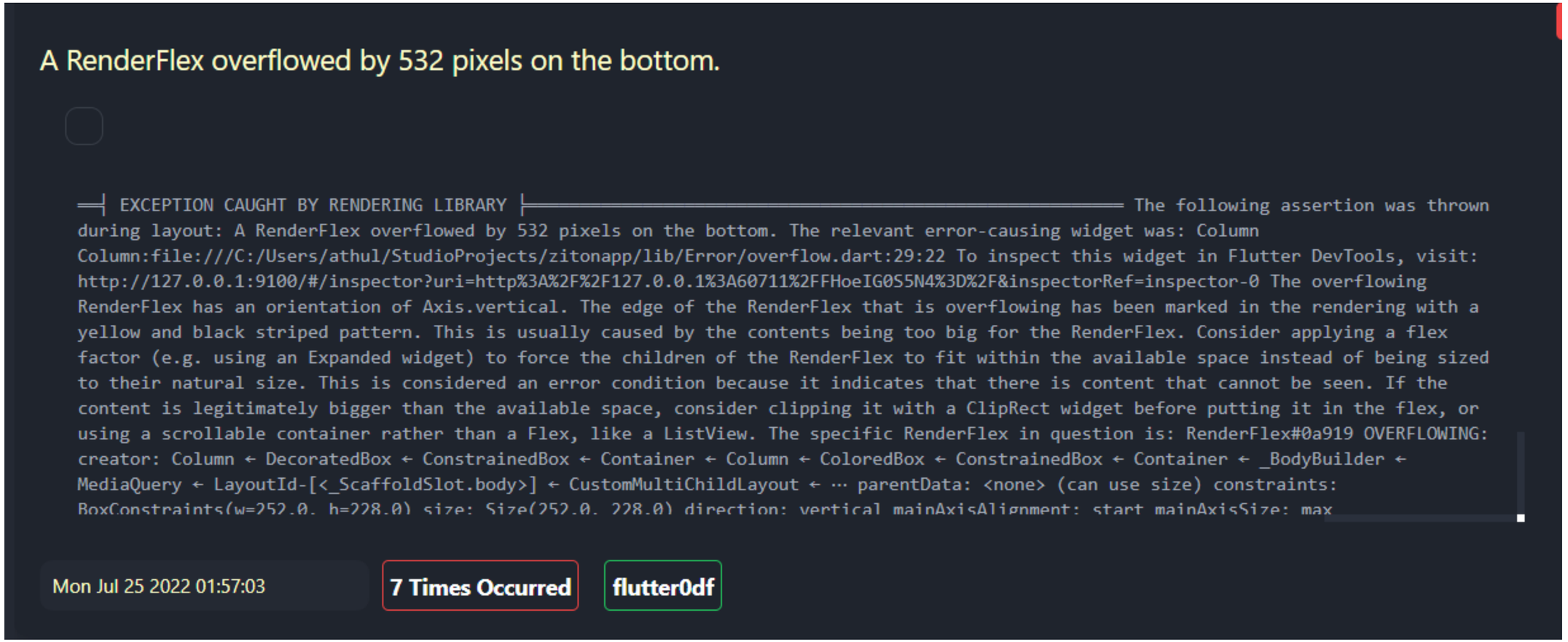
03

FRAME VIEW AND NAVIGATOR

HOOKS & DETECTORS

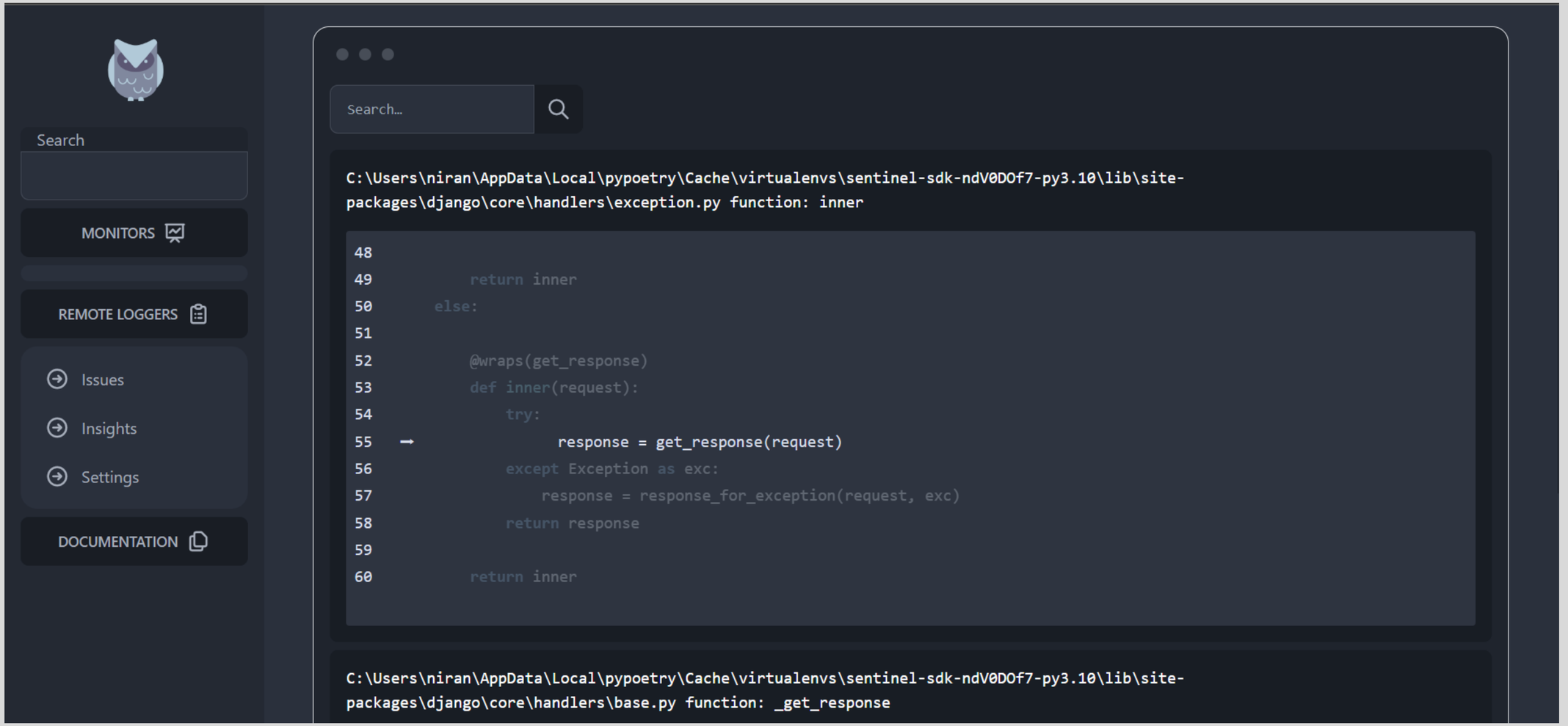


PARSERS

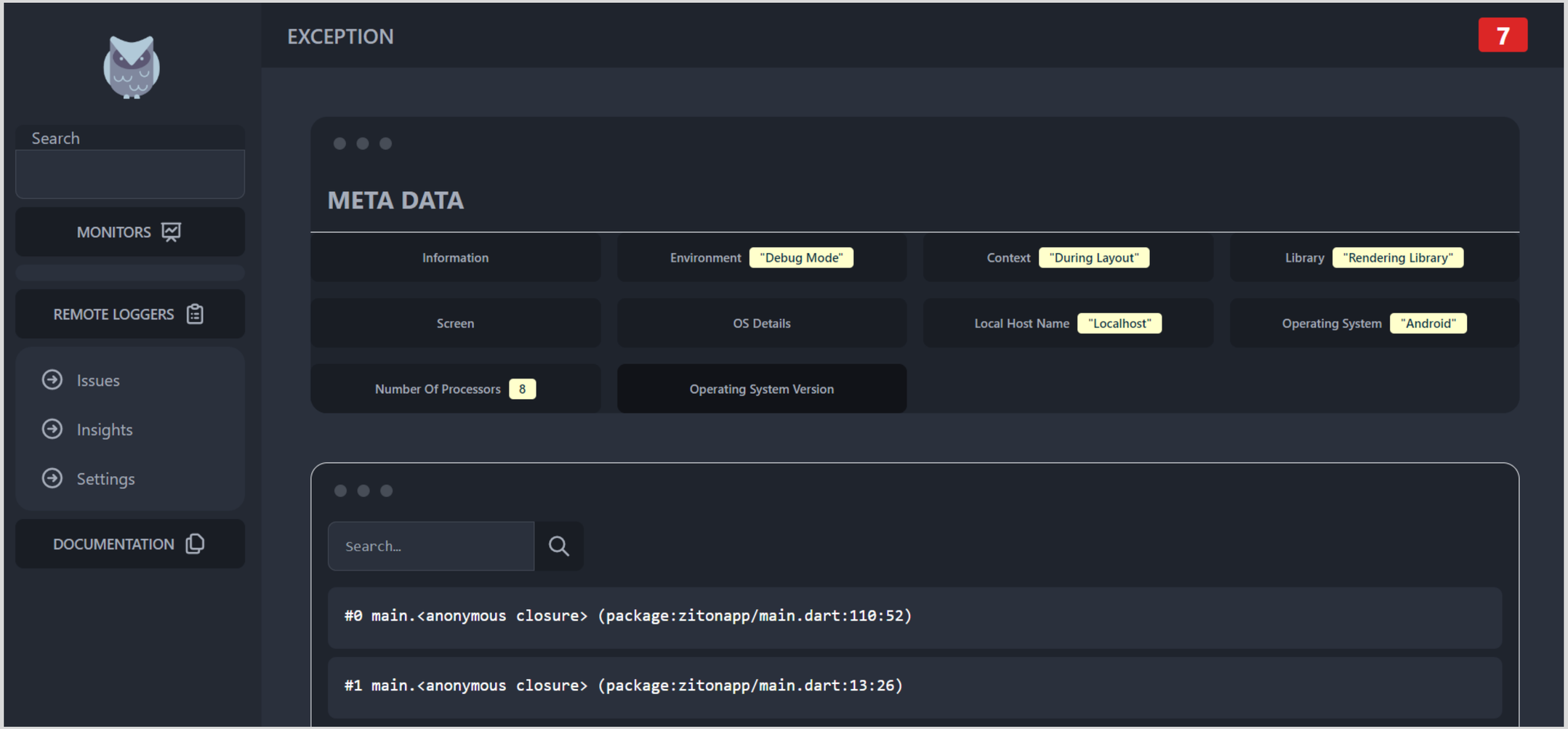

A RenderFlex overflowed by 532 pixels on the bottom.
EXCEPTION CAUGHT BY RENDERING LIBRARY
The following assertion was thrown during layout: A RenderFlex overflowed by 532 pixels on the bottom. The relevant error-causing widget was: Column Column:file:///C:/Users/athul/StudioProjects/zitonapp/lib/Error/overflow.dart:29:22 To inspect this widget in Flutter DevTools, visit: http://127.0.0.1:9100/#/inspector?uri=http%3A%2F%2F127.0.0.1%3A60711%2FFHoeIG0S5N4%3D%2F&inspectorRef=inspector-0 The overflowing RenderFlex has an orientation of Axis.vertical. The edge of the RenderFlex that is overflowing has been marked in the rendering with a yellow and black striped pattern. This is usually caused by the contents being too big for the RenderFlex. Consider applying a flex factor (e.g. using an Expanded widget) to force the children of the RenderFlex to fit within the available space instead of being sized to their natural size. This is considered an error condition because it indicates that there is content that cannot be seen. If the content is legitimately bigger than the available space, consider clipping it with a ClipRect widget before putting it in the flex, or using a scrollable container rather than a Flex, like a ListView. The specific RenderFlex in question is: RenderFlex#0a919 OVERFLOWING: creator: Column ← DecoratedBox ← ConstrainedBox ← Container ← Column ← ColoredBox ← ConstrainedBox ← Container ← _BodyBuilder ← MediaQuery ← LayoutId-[<_ScaffoldSlot.body>] ← CustomMultiChildLayout ← … parentData: <none> (can use size) constraints: BoxConstraints(w=252.0, h=228.0) size: Size(252.0, 228.0) direction: vertical mainAxisAlignment: start mainAxisSize: max
Mon Jul 25 2022 01:57:03
7 Times Occurred
flutter0df


RAW JSON REPRESENTATION OF ERRORS
PARSE ERROR NAME
FILE NAME
LINE NUMBER
PROJECT ID
GROUP ERRORS BY INCREMENTING FREQUENCY

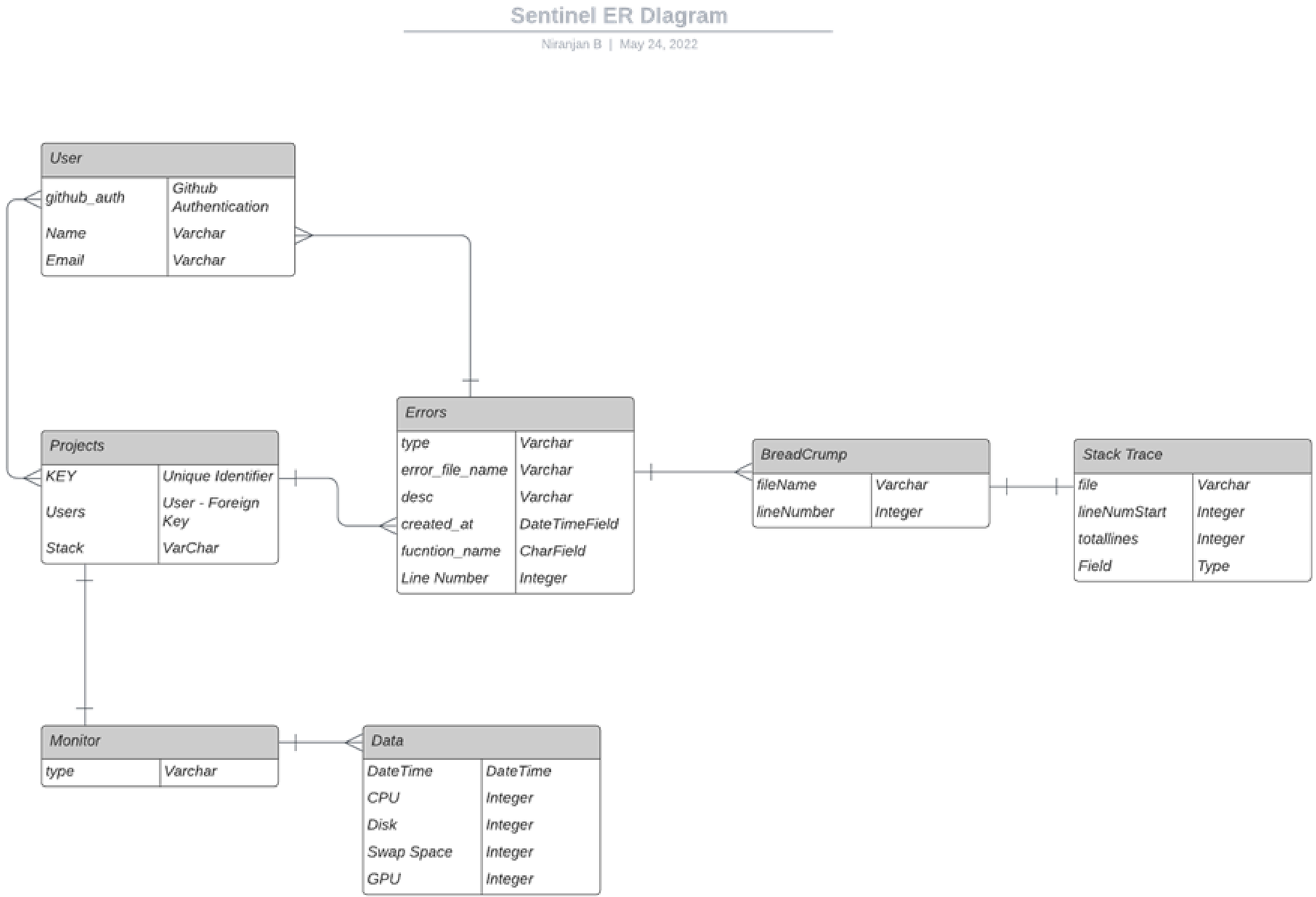
FRAME VIEW


Search
MONITORS
REMOTE LOGGERS
Issues
Insights
Settings
DOCUMENTATION
Search...
C:\Users\niran\AppData\Local\pypoetry\Cache\virtualenvs\sentinel-sdk-ndV0DOf7-py3.10\lib\site-packages\django\core\handlers\exception.py function: inner
48
49 return inner
50 else:
51
52 @wraps(get_response)
53 def inner(request):
54 try:
55 → response = get_response(request)
56 except Exception as exc:
57 response = response_for_exception(request, exc)
58 return response
59
60 return inner
C:\Users\niran\AppData\Local\pypoetry\Cache\virtualenvs\sentinel-sdk-ndV0DOf7-py3.10\lib\site-packages\django\core\handlers\base.py function: _get_response

FRAME NAVIGATOR



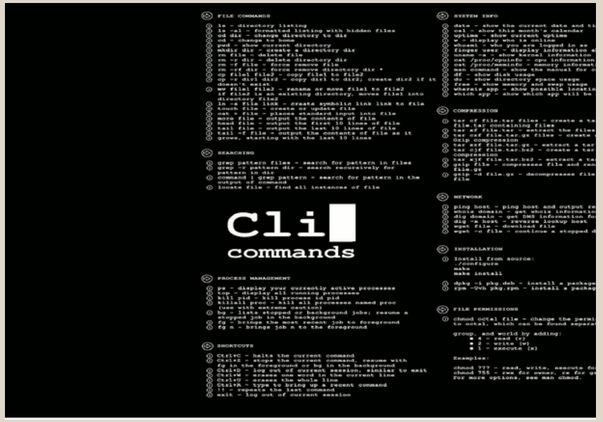
ER Diagram


Sentinel ER Diagram
Niranjan B | May 24, 2022
User
github_auth
Github Authentication
Name
Varchar
Email
Varchar
Projects
KEY
Unique Identifier
Users
User - Foreign Key
Stack
VarChar
Errors
type
Varchar
error_file_name
Varchar
desc
Varchar
created_at
DateTimeField
fucntion_name
CharField
Line Number
Integer
BreadCrump
fileName
Varchar
lineNumber
Integer
Stack Trace
file
Varchar
lineNumStart
Integer
totallines
Integer
Field
Type
Monitor
type
Varchar
Data
DateTime
DateTime
CPU
Integer
Disk
Integer
Swap Space
Integer
GPU
Integer

TEST COVERAGE

DJANGO-ZITON SERVER

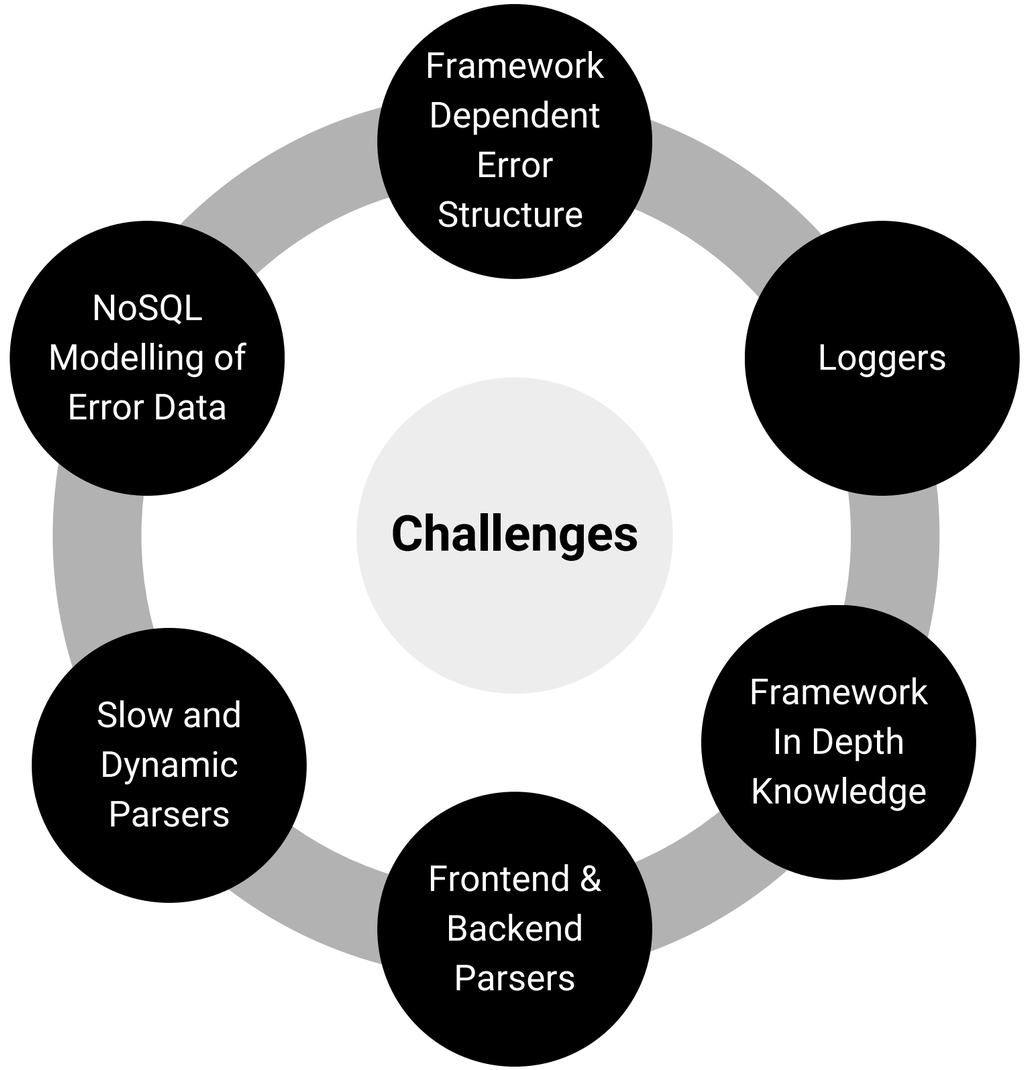
- Unit test coverage : **40 %**
- Testing tools: DjangoTest, Postman



MONITOR CLI

- Unit test coverage : 7**0 %**
- Testing tools: Pytest, MockRequest

CHALLENGES


Framework Dependent Error Structure
Loggers
Framework In Depth Knowledge
Frontend & Backend Parsers
Slow and Dynamic Parsers
NoSQL Modelling of Error Data
Challenges

MODULE 2
APPLICATION OBSERVABILITY

01

PRODUCTION ENVIRONMENT HEALTH MONITOR AGENT

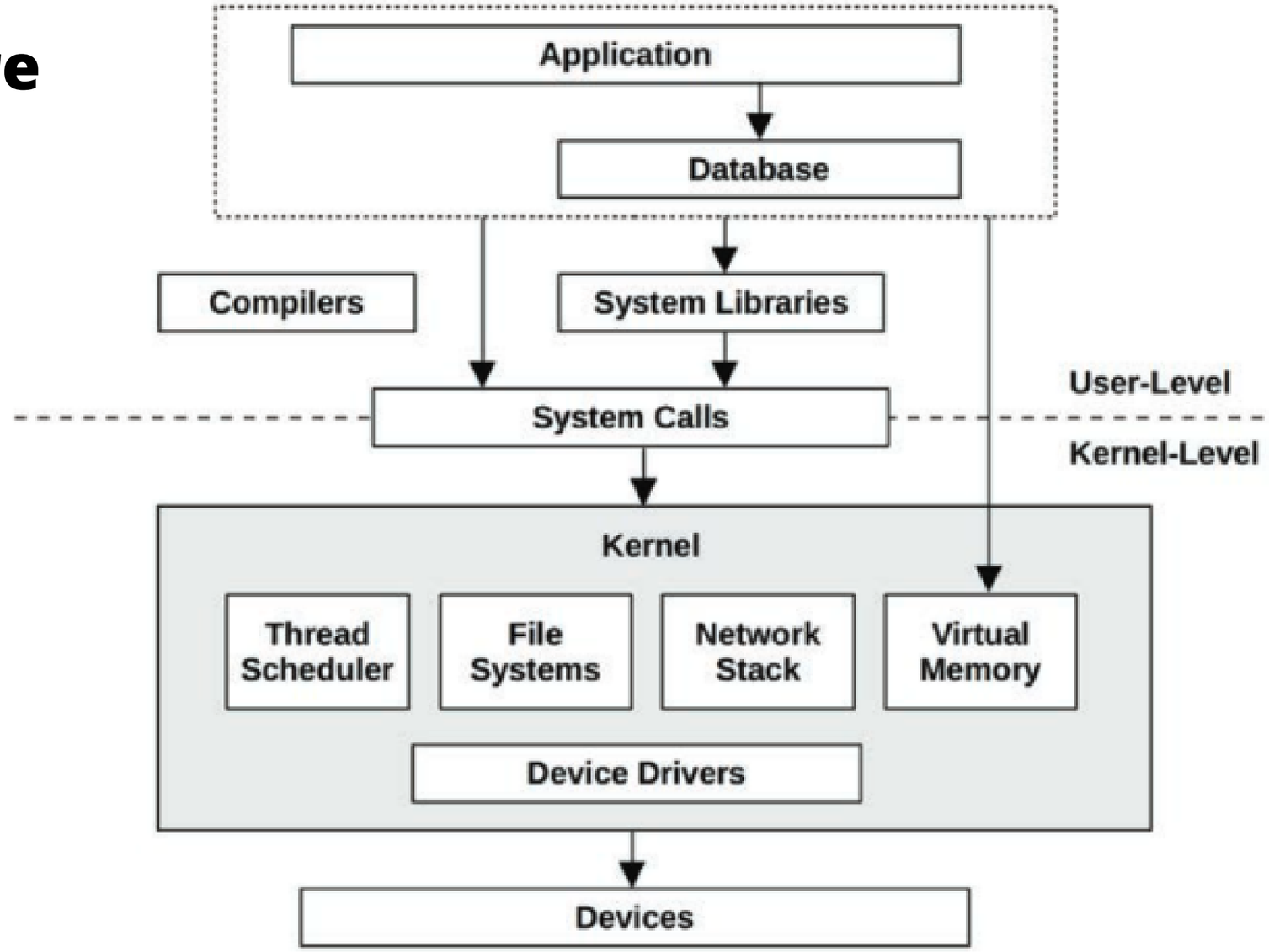
02

PERFORMANCE VISUALIZER

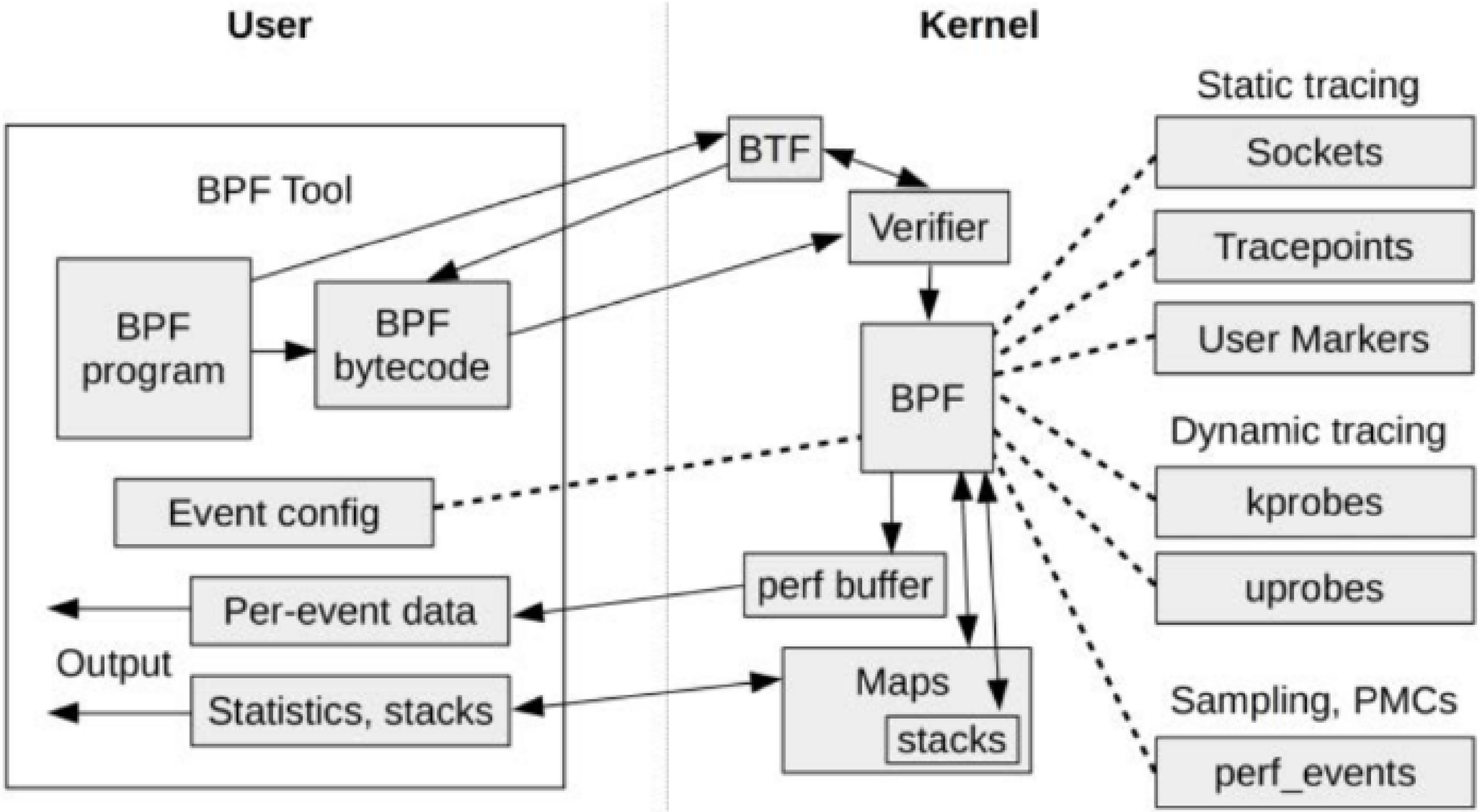
03

DISTRIBUTION DEPENDENTED PARSERS

General Architecture



BPF Architecture

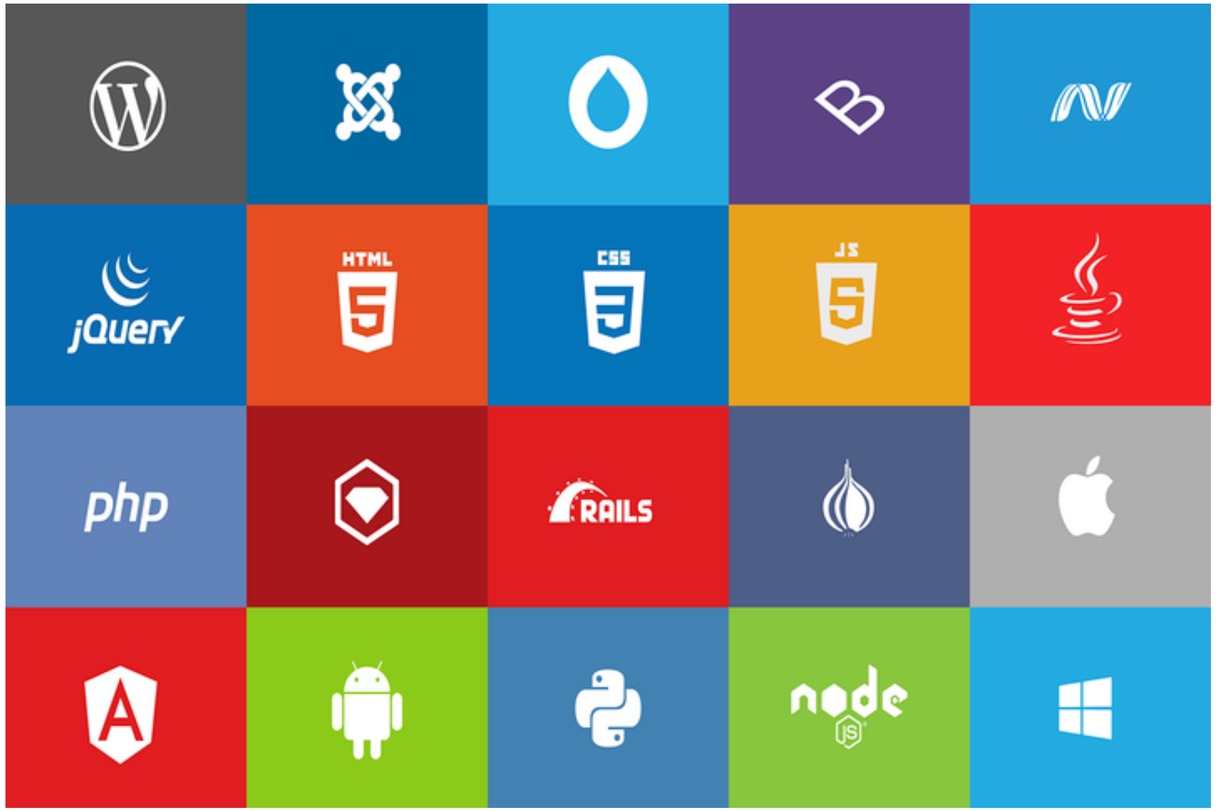


TOP

```
top - 12:04:54 up  1:14,  1 user,  load average: 0.26, 0.09, 0.08
Tasks: 194 total,   2 running, 192 sleeping,   0 stopped,   0 zombie
%Cpu(s): 21.3 us,  1.7 sy,  0.0 ni, 77.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   1977.8 total,     77.8 free,   1277.6 used,    622.4 buff/cache
MiB Swap:    448.5 total,    240.8 free,    207.7 used.    503.9 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
   1540 merin     20   0 3731632 318972 100596 R  19.9  15.7   1:59.92 gnome-s+
   1336 merin     20   0  306488  94892  54932 S   3.3   4.7   0:39.78 Xorg
   3489 merin     20   0 2844852 370180 115956 S   0.7  18.3   0:34.21 Isolate+
    246 root     -51   0       0      0      0 S   0.3   0.0   0:00.36 irq/18-+
   3932 root     20   0       0      0      0 I   0.3   0.0   0:00.62 kworker+
   4624 merin     20   0  814660  50484  37996 S   0.3   2.5   0:00.67 gnome-t+
   4643 merin     20   0  735424  45460  34508 S   0.3   2.2   0:00.58 gnome-s+
      1 root     20   0  167424   9784   6696 S   0.0   0.5   0:00.94 systemd
      2 root     20   0       0      0      0 S   0.0   0.0   0:00.00 kthreadd
      3 root      0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_gp
      4 root      0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_par+
      5 root      0 -20       0      0      0 I   0.0   0.0   0:00.00 netns
      7 root      0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker+
```

MODULE 3
LANGUAGE SDKs



DJANGO SDK

sentinel-django 0.1.3

```
pip install sentinel-django
```

Latest version

Released: about 2 hours ago

Logging

```
LOGGING = {
    'version': 1,
    'disable_existing_loggers': True,
    'handlers': {
        'file': {
            'level': 'ERROR',
            'class': 'logging.FileHandler',
            'filename': 'exceptions/debug.log',
        },
    },
    'loggers': {
        'django': {
            'handlers': ['file'],
            'level': 'ERROR',
            'propagate': True,
        },
    },
}
```

Method

Enable Logging

Perks

Users can log live data
Language Independent

Challenges

Unhandled errors aren't tracked

Middleware

```python
class SentinelErrorMiddleware(object):

    def __init__(self, get_response):
        self.get_response = get_response

    def __call__(self, request):
        response = self.get_response(request)
        return response

    def process_response(self, request, response):
        if response.status_code == 500 and settings.DEBUG
            print(response)
            print(request)
        return HttpResponse("Hello")

    def process_exception(self, request, exception):
        logging.error(request)
        logging.exception(exception)
        return HttpResponse("Hello")
```

Method

Middleware

Perks

Errors inside views can be tracked
Framework Independent

Challenges

Errors In other middlewares can't be tracked

Error Reporter

```python
from django.views.debug import ExceptionReporter


class SentinelExceptionReporter(ExceptionReporter):
    def get_traceback_data(self):
        data = super(SentinelExceptionReporter, self).get_traceback_data()
        for i in data['frames']:
            print(i)
        return data
```

Method

Error Reporter

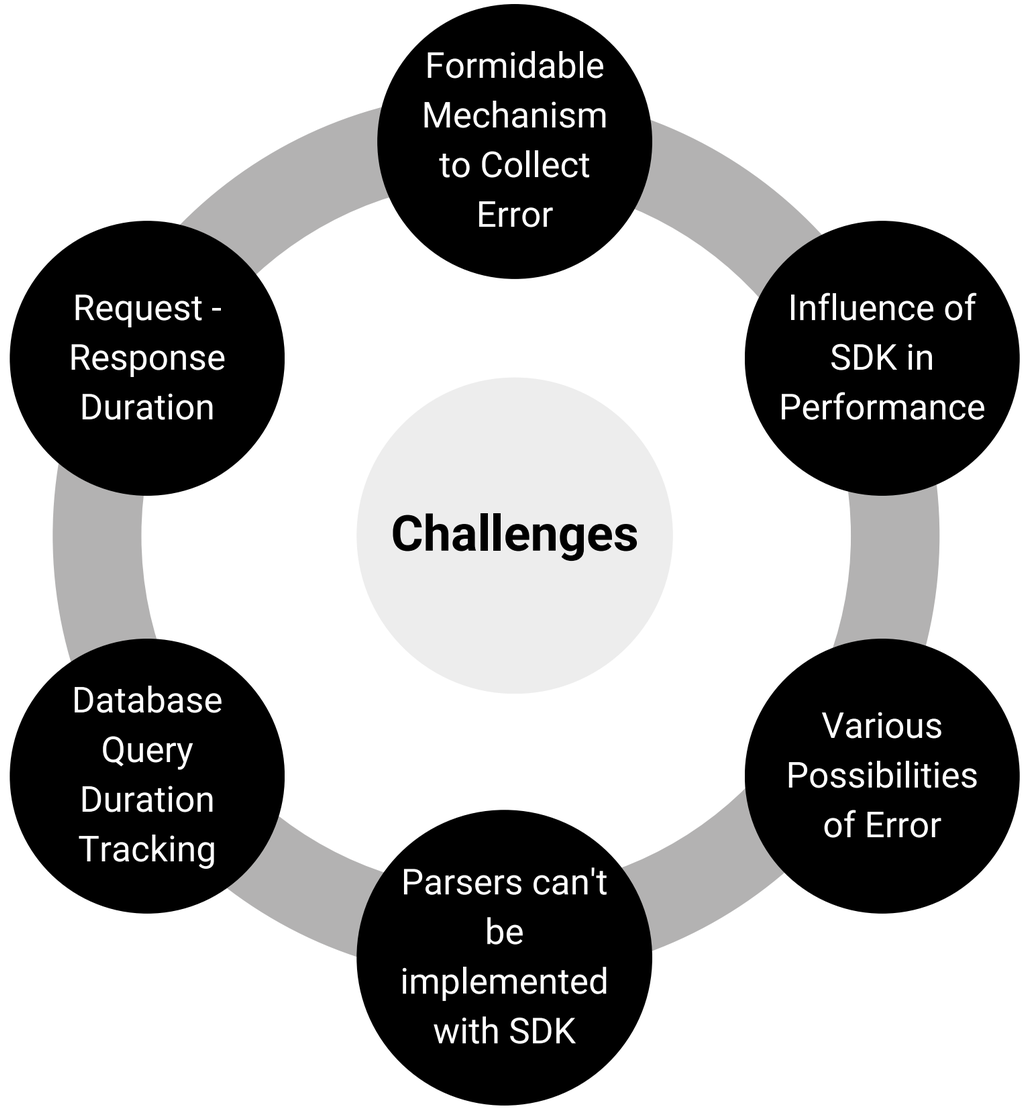
Perks

All Errors including unhandled errors can be captured
Django Specific

Challenges

User settings configuration

CHALLENGES


Challenges
Formidable Mechanism to Collect Error
Influence of SDK in Performance
Various Possibilities of Error
Parsers can't be implemented with SDK
Database Query Duration Tracking
Request - Response Duration

ERROR HANDLING IN FLUTTER

```dart
import 'dart:io';

import 'package:flutter/foundation.dart';
import 'package:flutter/material.dart';

void main() {
  FlutterError.onError = (FlutterErrorDetails
    FlutterError.presentError(details);
    if (kReleaseMode) exit(1);
  };
  runApp(MyApp());
}

// rest of `flutter create` code...
```

01

FlutterError.onError

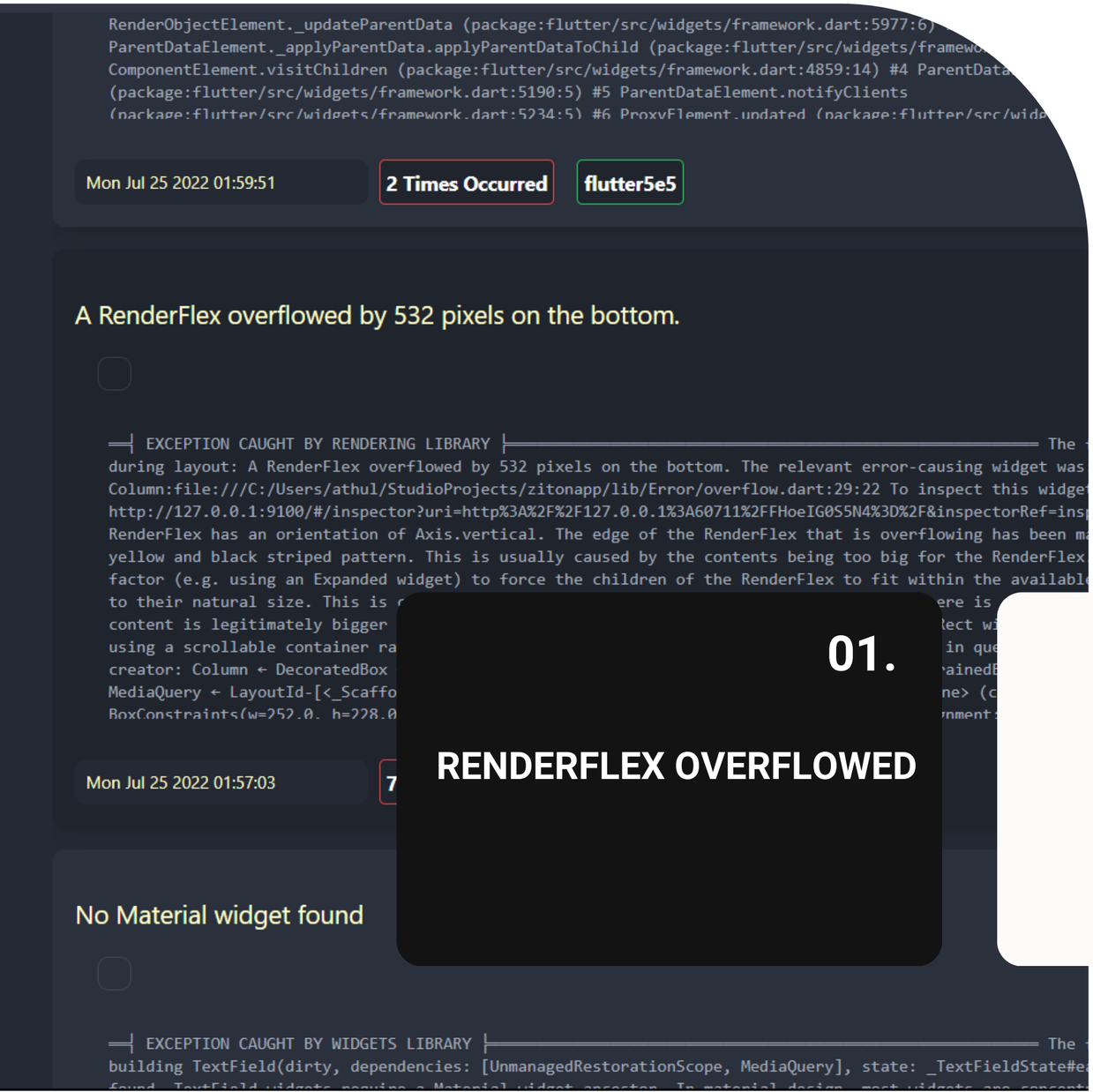
```dart
import 'dart:async';

void main() {
    runZonedGuarded(() {
    runApp(MyApp());
  }, (Object error, StackTrace stack) {
    myBackend.sendError(error, stack);
  });
}
```

02

runZonedGuarded

COMMON ERRORS IN FLUTTER



01.

RENDERFLEX OVERFLOWED

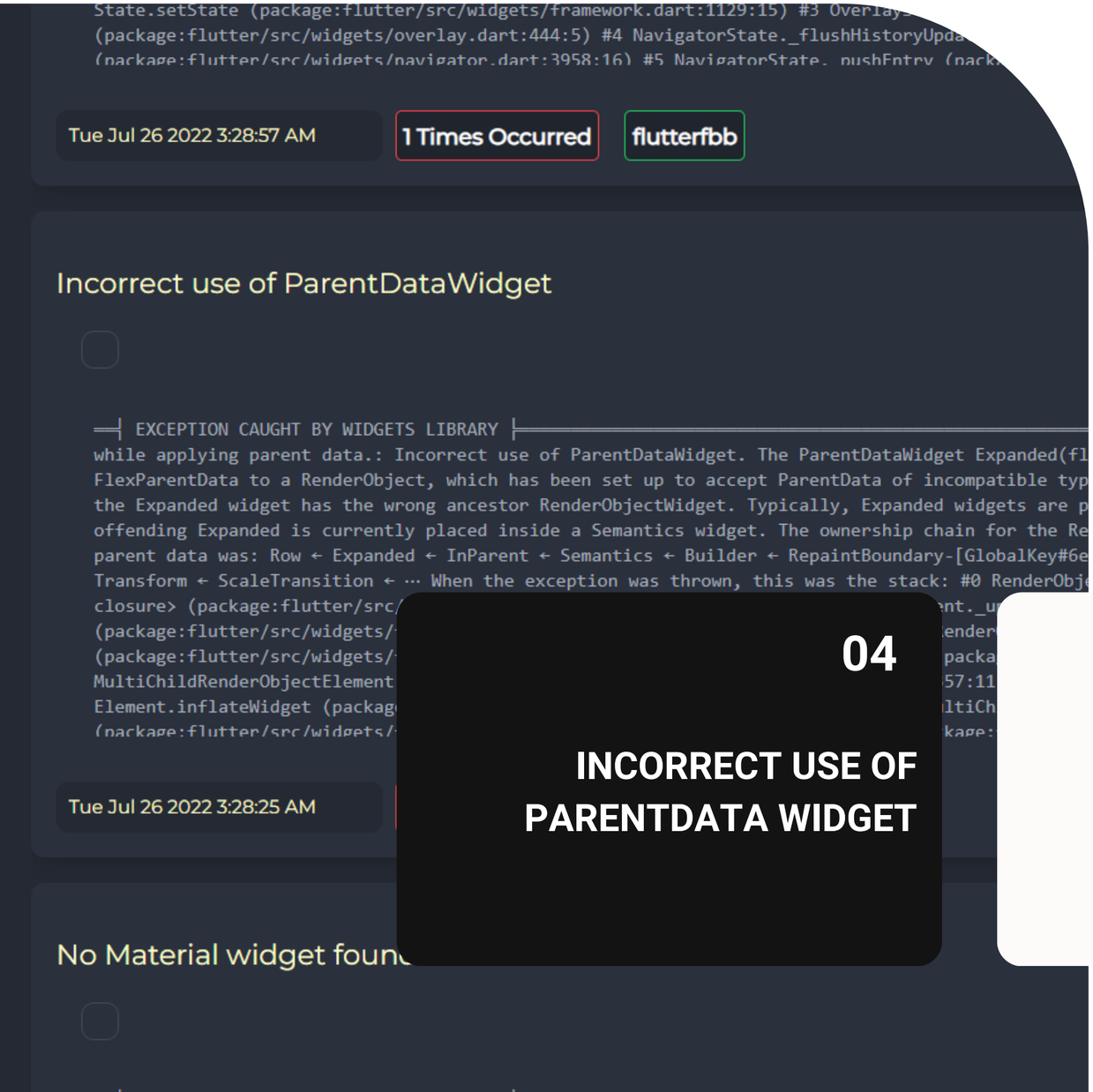
02.

VERTICAL VIEWPORT WAS GIVEN UNBOUNDED HEIGHT

03.

INPUTDECORATOR CANNOT HAVE UNBOUNDED WIDTH

COMMON ERRORS IN FLUTTER



04

INCORRECT USE OF PARENTDATA WIDGET

05

SETSTATE CALLED DURING BUILD

ziton_error 0.0.4

Published 17 hours ago Null safety

SDK FLUTTER | PLATFORM ANDROID IOS LINUX MACOS WINDOWS

6

Readme Changelog Example Installing Versions Scores Admin Activity log

Ziton Error

license MIT

A Flutter package for error monitoring and reporting. Listen for common flutter errors & push error details

6 LIKES | 110 PUB POINTS | 0% POPULARITY

Publisher

unverified uploader

Metadata

A Flutter package for error

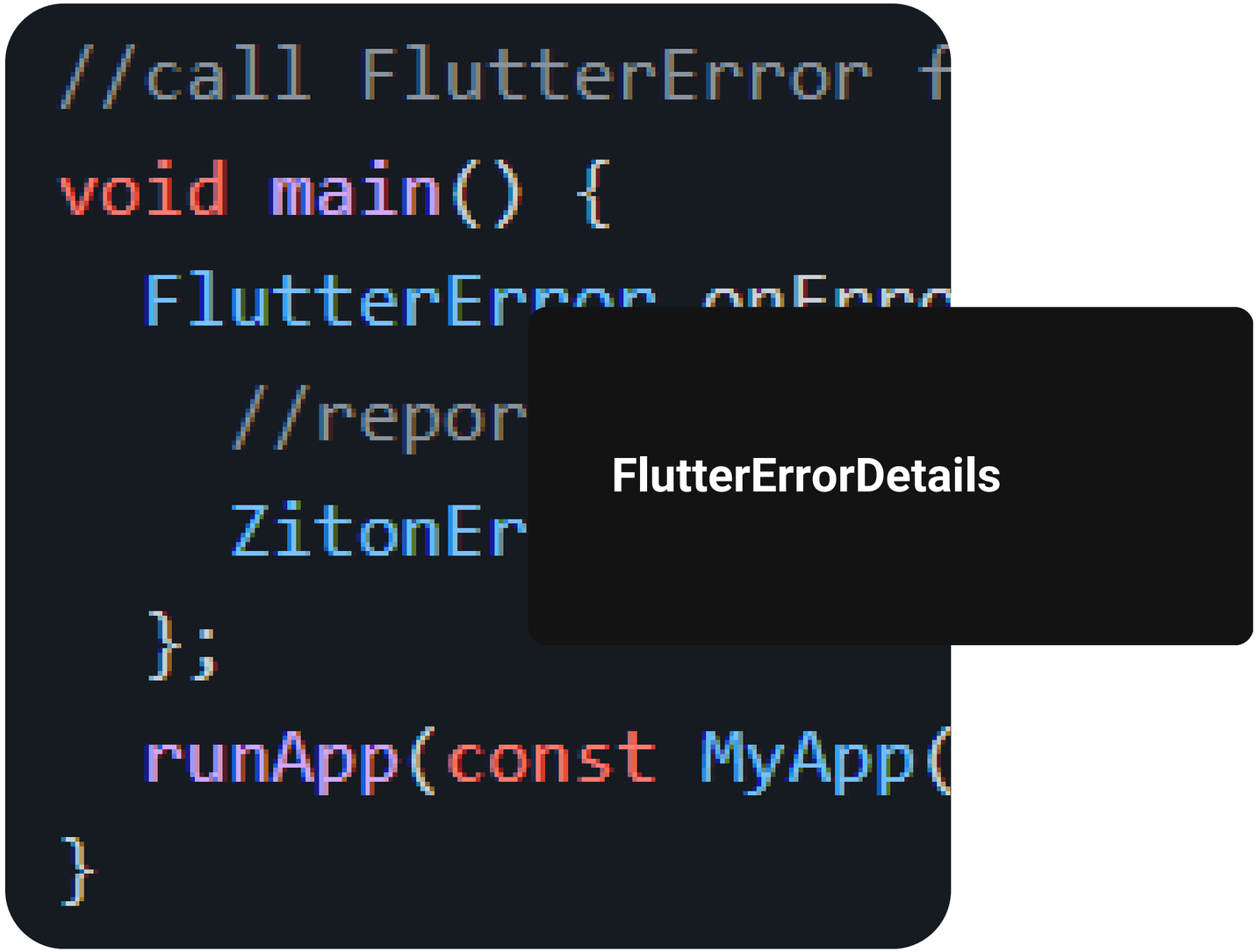
ZITON FLUTTER PLUGIN

DEBUG MODE

```dart
//call FlutterError function inside main()
void main() {
  FlutterError.onError = (FlutterErrorDetails errorDetails){
    //report error to ziton
    ZitonError("your dsn",errorDetails);
  };
  runApp(const MyApp());
}
```

RELEASE MODE

```
try {
   //something won't work
}
catch (error) {
 //call report error function with parameters dsn,name, filename, description.
   ReportError(
     "https://OokNpSGVsSrzqesUiHBTXHnzFDtGMVoViJdgtXcFNCUmYwhQhwXiouYWbTFy.ziton.live",
     "error function does not exist",
     "main.dart",
     "error in running this code.this code produces error that must be reported to the ziton live"
     );
}
```



01 STACK TRACE

02 ERROR INFORMATION

03 CONTEXT

04 LIBRARY

```dart
import 'dart:io';
import 'dart:ui';

///platform information such as system, vers
Map platformInfo() {
  Map plat = {
    "Operating System":
    "Operating System Ve
    "local host name": P
    "Number of processor
    "OS Details": Platform.version,
  };
  return plat;
}
```

Platform class

01 OPERATING SYSTEM

02 OS VERSION

03 PROCESSORS

04 LOCAL HOST NAME

```
//screen details such as dimensions and pixel int
Map screenDetails() {
  Map screenDetails = {
    "Pixel Ratio": window.devicePixelRatio,
    "Height": window.physicalSize.height,
    "Width": window.physical
    "Theme": theme(),
    "Padding": {
      "Left": window.padding
      "Right": window.paddin
      "Top": window.padding.
      "Bottom": window.padding.bottom,
    },
  };
  return screenDetails;
}
```

Window class

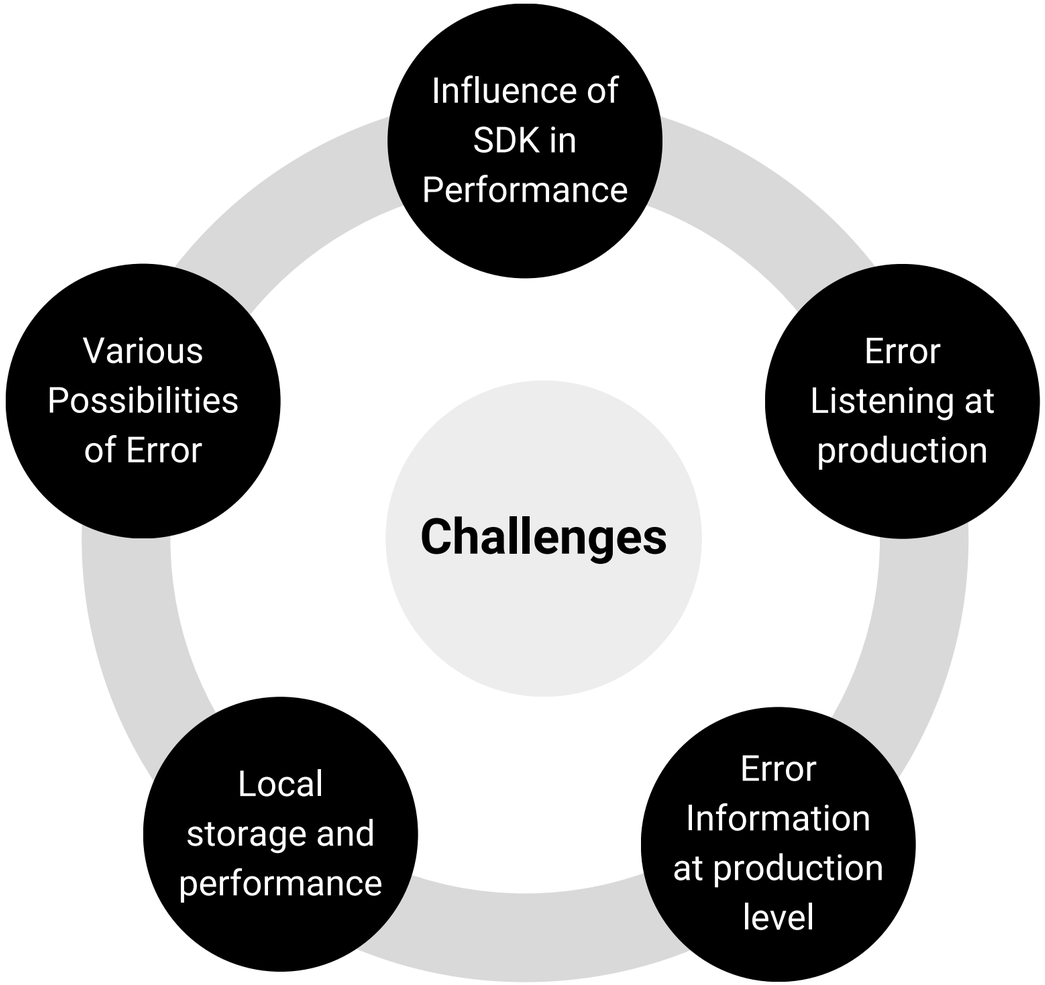
01 PIXEL RATIO

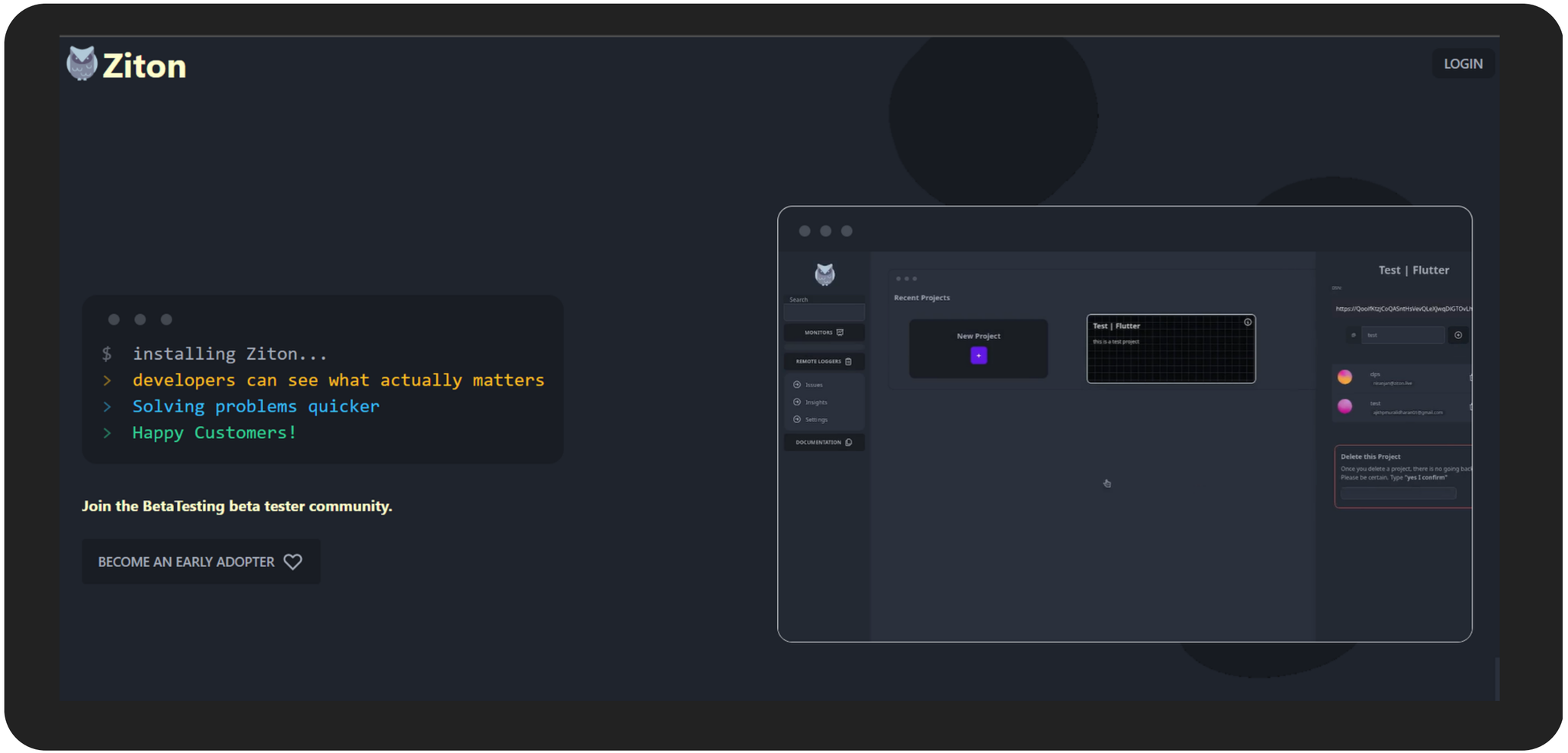
02 WINDOW SIZE

03 PADDING

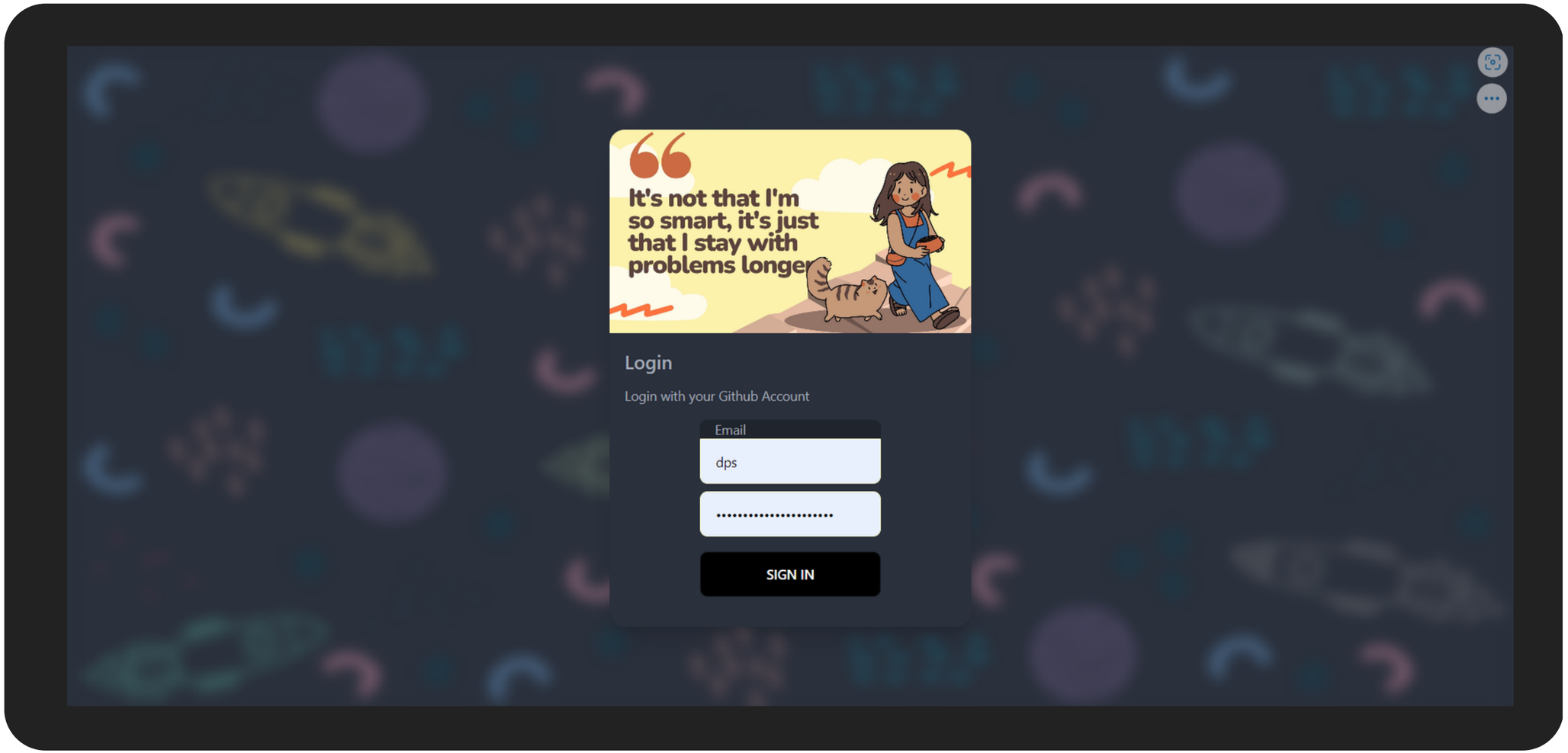
04 THEME

CHALLENGES


Influence of SDK in Performance
Error Listening at production
Error Information at production level
Local storage and performance
Various Possibilities of Error
Challenges

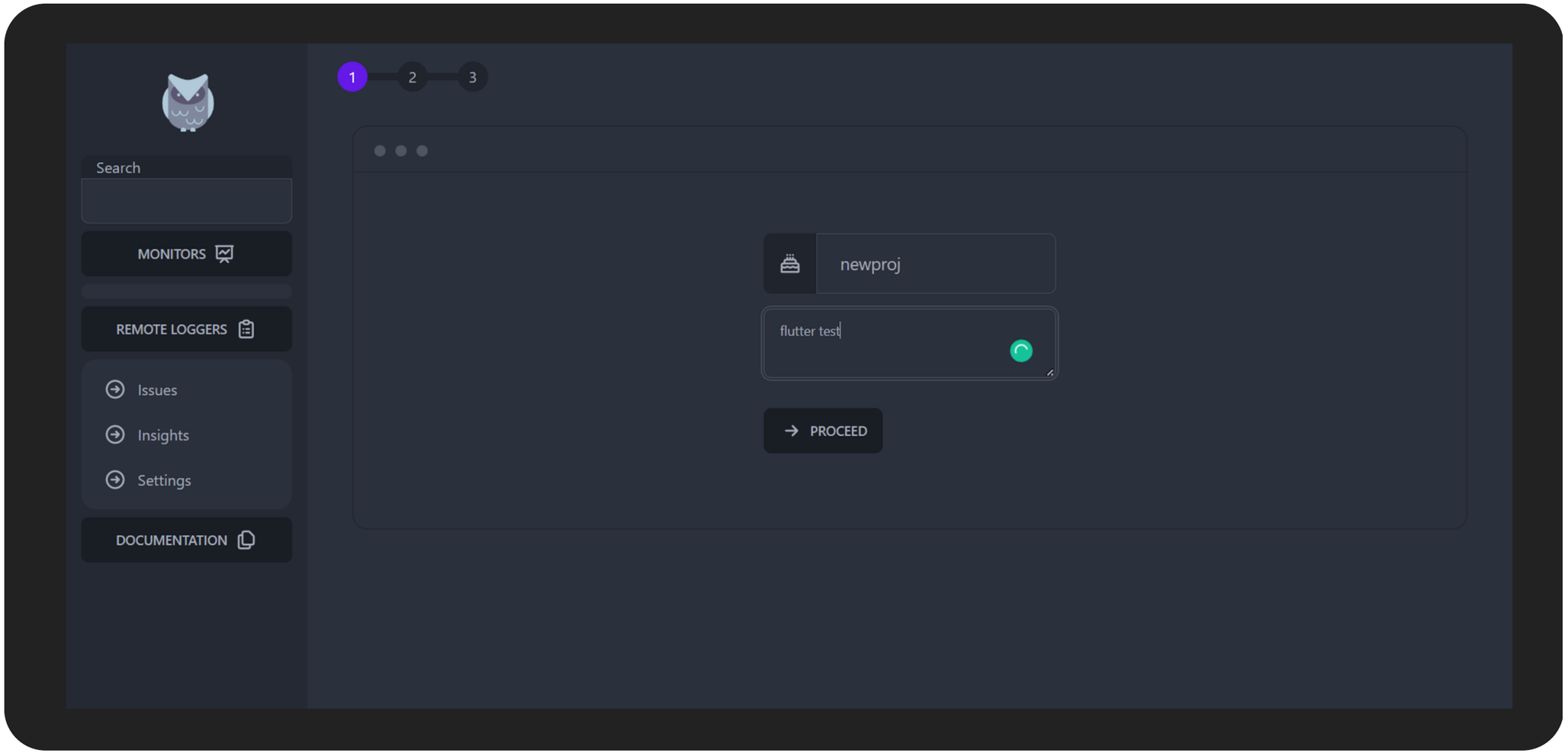

Ziton
LOGIN
$ installing Ziton...
> developers can see what actually matters
> Solving problems quicker
> Happy Customers!
Join the BetaTesting beta tester community.
BECOME AN EARLY ADOPTER
Search
MONITORS
REMOTE LOGGERS
Issues
Insights
Settings
DOCUMENTATION
Recent Projects
New Project
Test | Flutter
this is a test project
Test | Flutter
test
Delete this Project

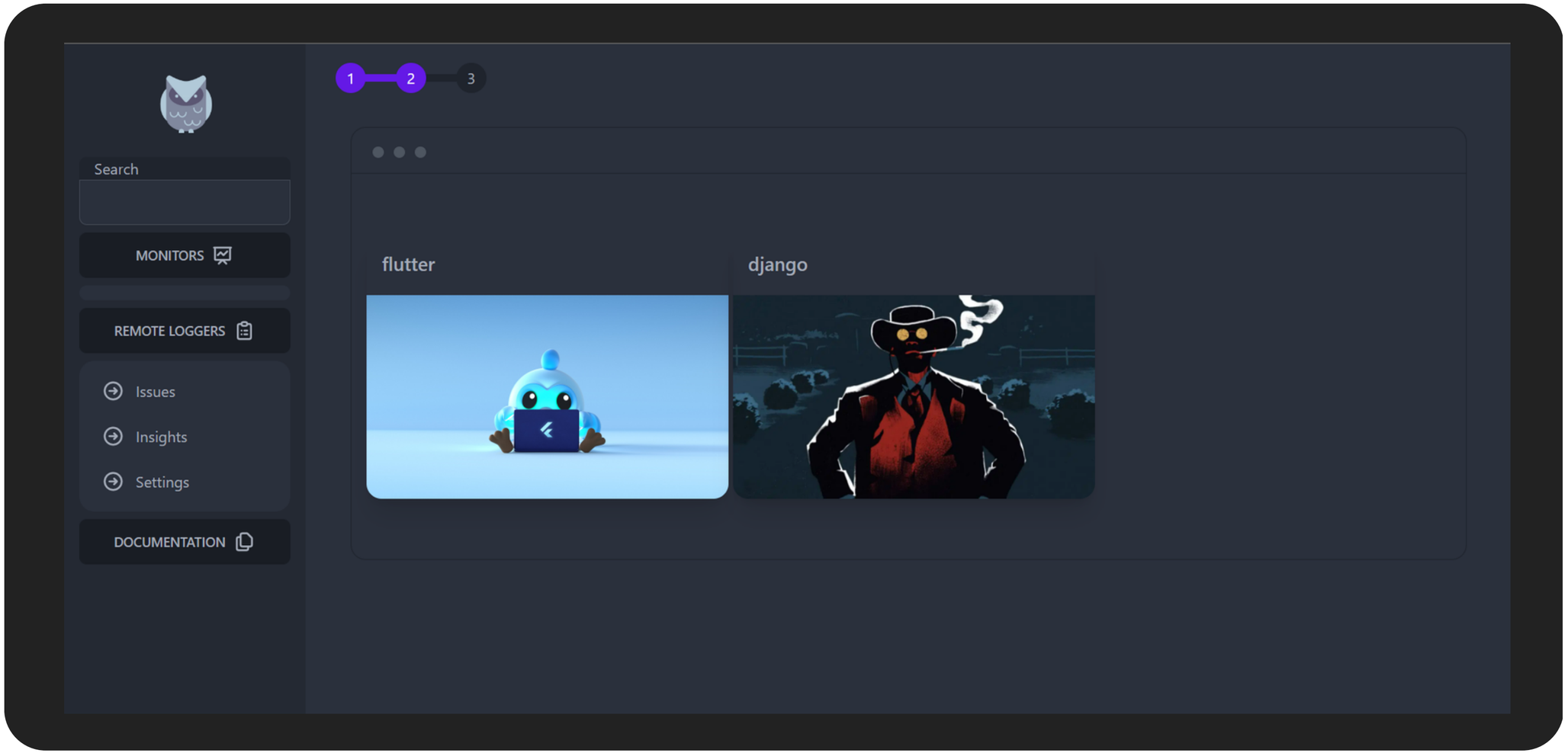
FEATURES


It's not that I'm so smart, it's just that I stay with problems longer
Login
Login with your Github Account
Email
dps
SIGN IN


Search
MONITORS
REMOTE LOGGERS
Issues
Insights
Settings
DOCUMENTATION
Recent Projects
New Project
+
Test | Flutter
this is a test project
SELECT
Django-Test | Flutter
A test project
SELECT
Hestiaq22 | Flutter
official heestia page
SELECT
Jhhj | Flutter
jhjhj
SELECT
Anotherone | Flutter
Hello from the other side
SELECT

FEATURES


1
2
3
Search
MONITORS
REMOTE LOGGERS
Issues
Insights
Settings
DOCUMENTATION
newproj
flutter test
PROCEED


1
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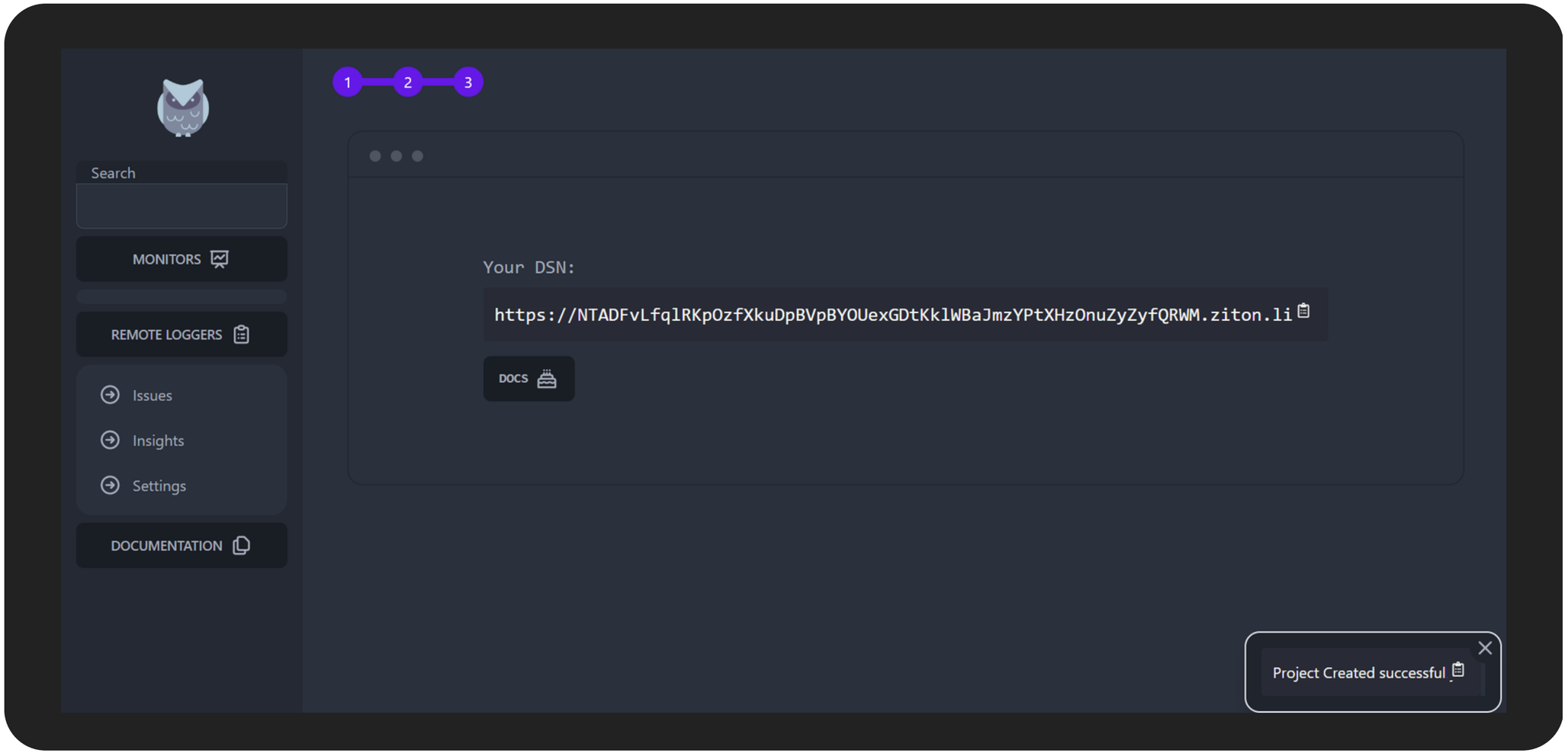
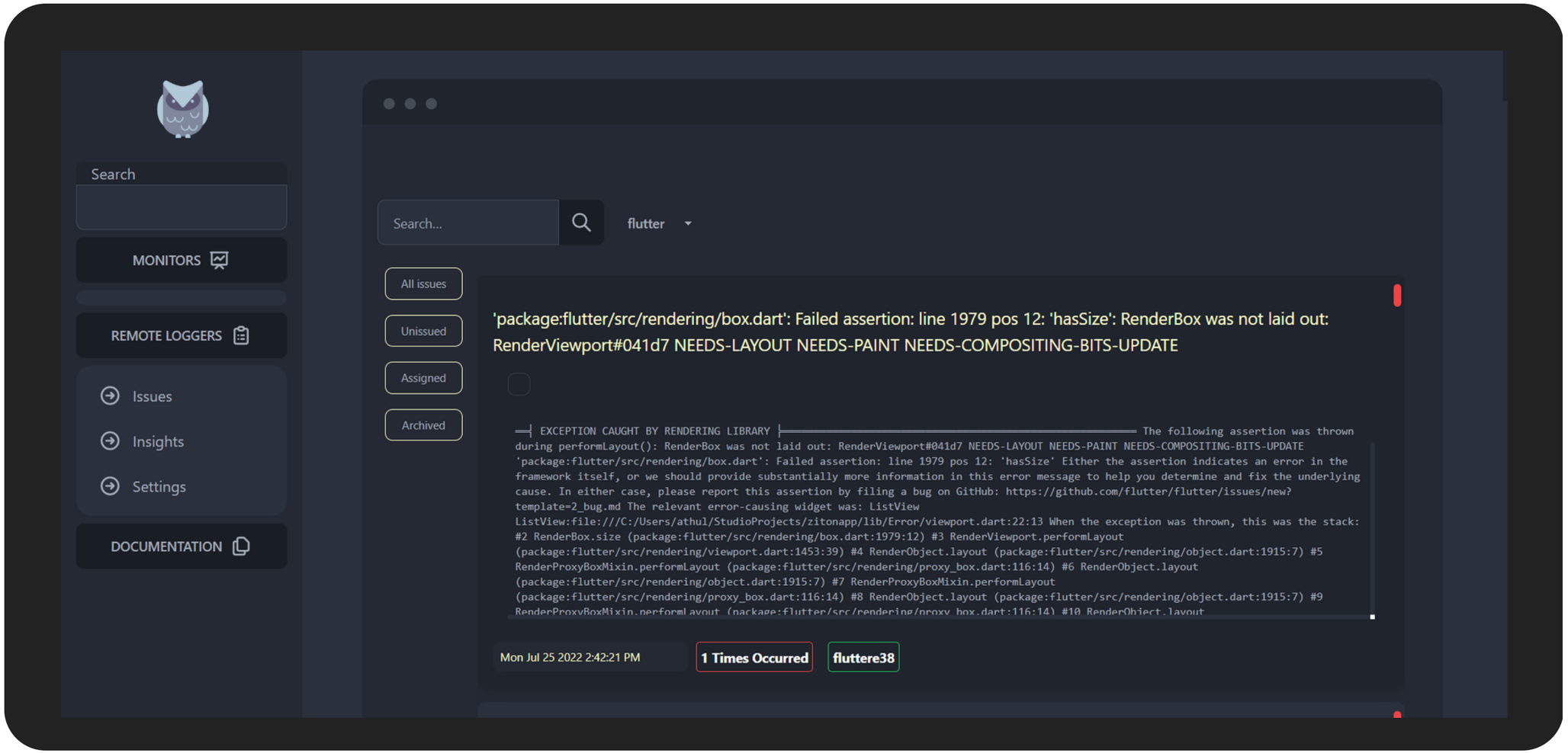
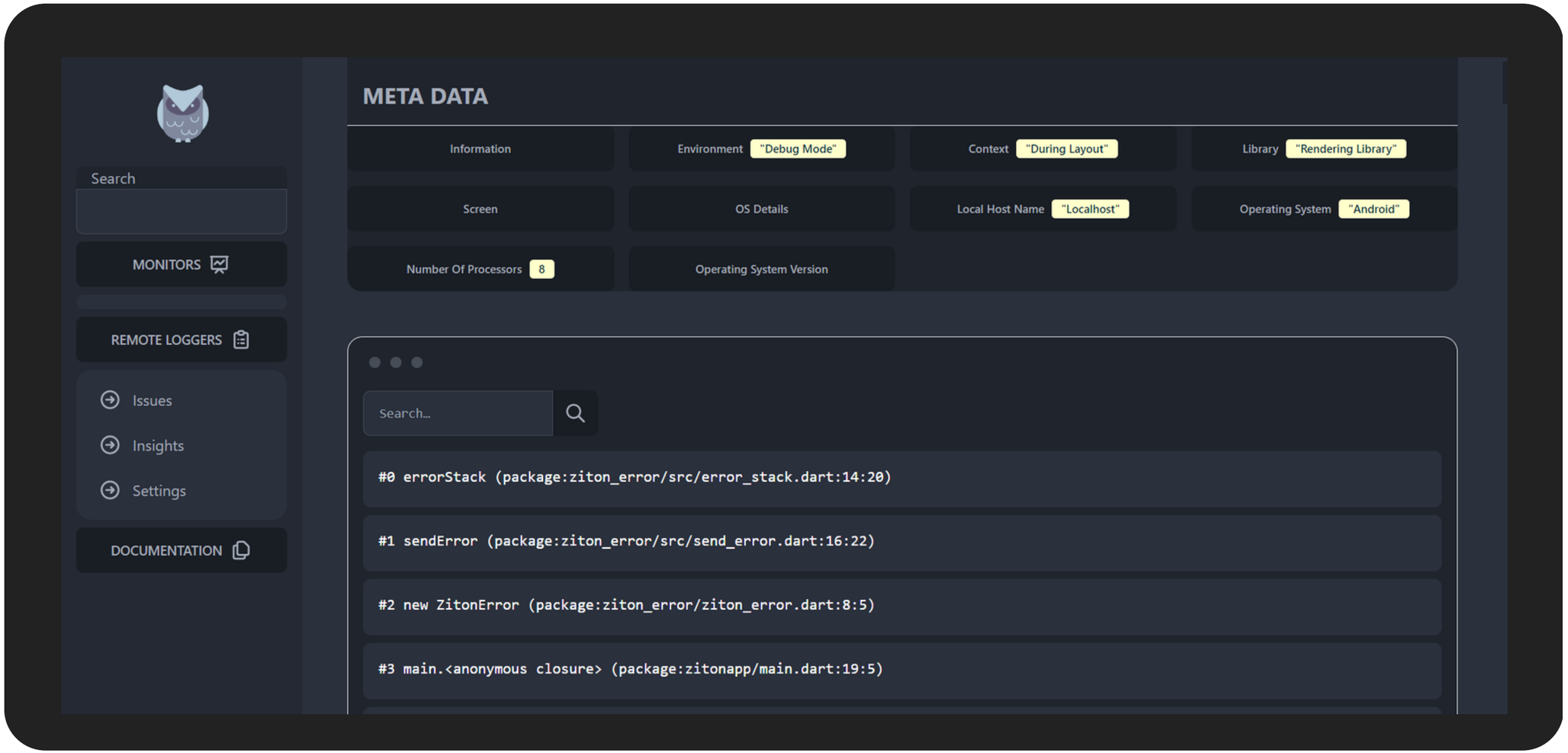
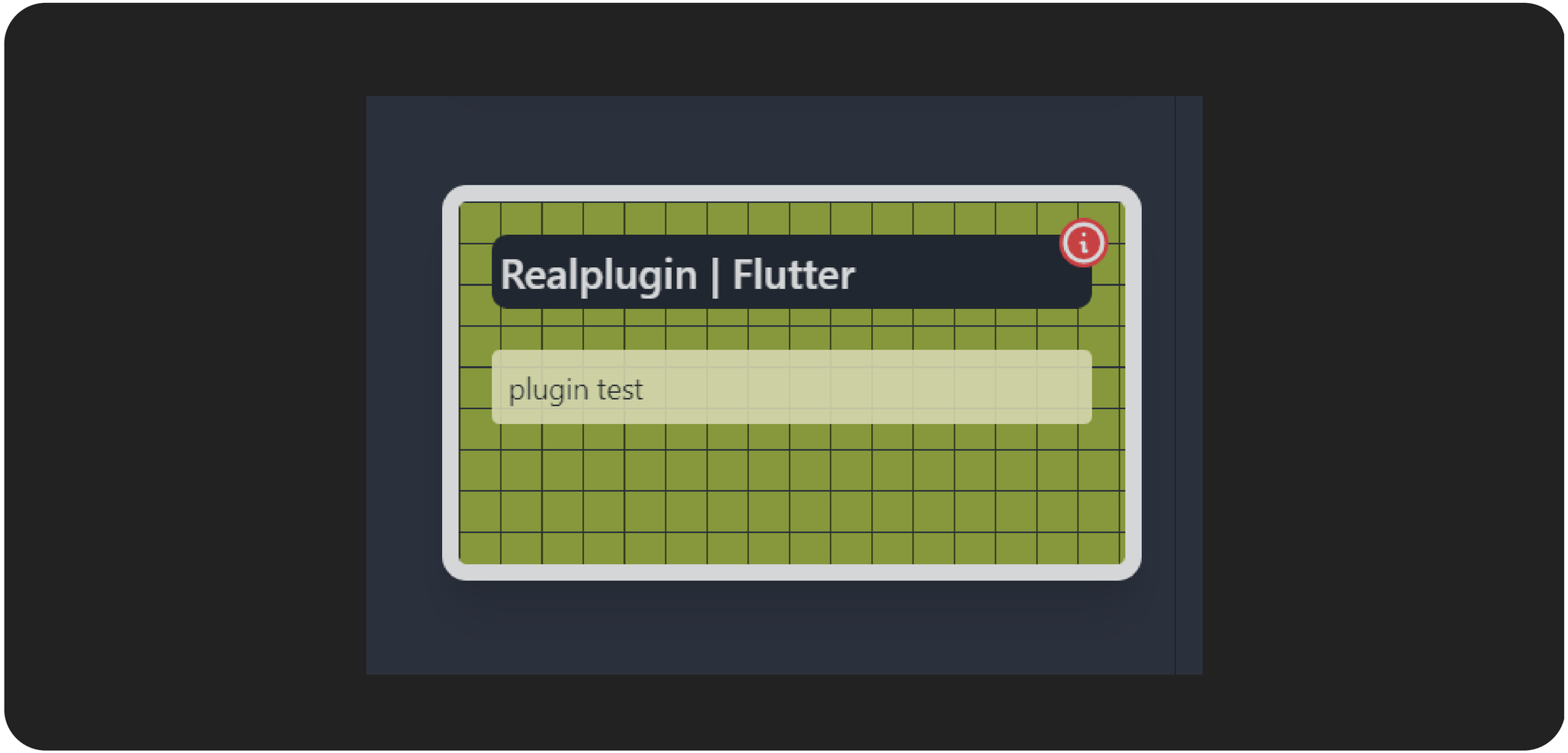
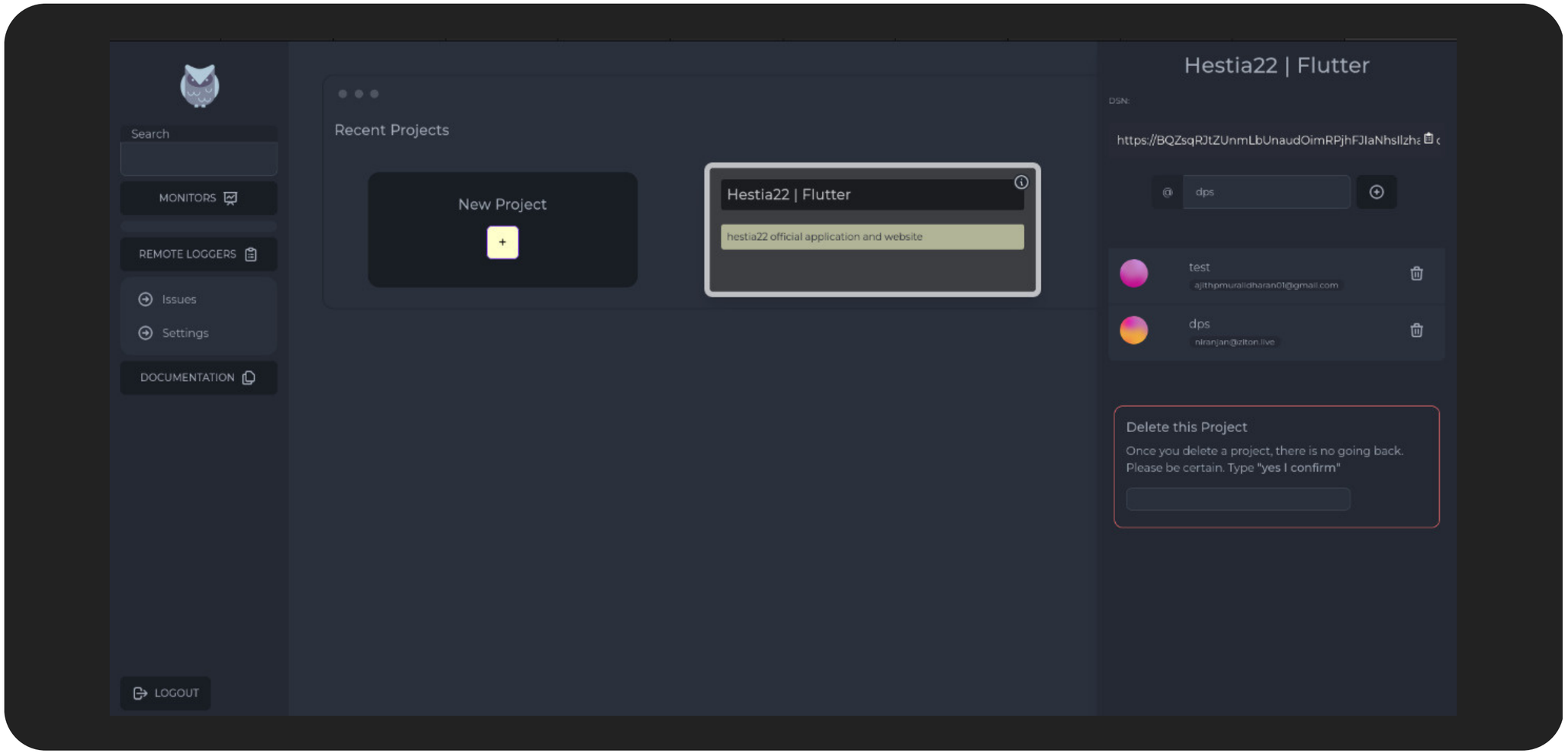
Search
MONITORS
REMOTE LOGGERS
Issues
Insights
Settings
DOCUMENTATION
flutter
django

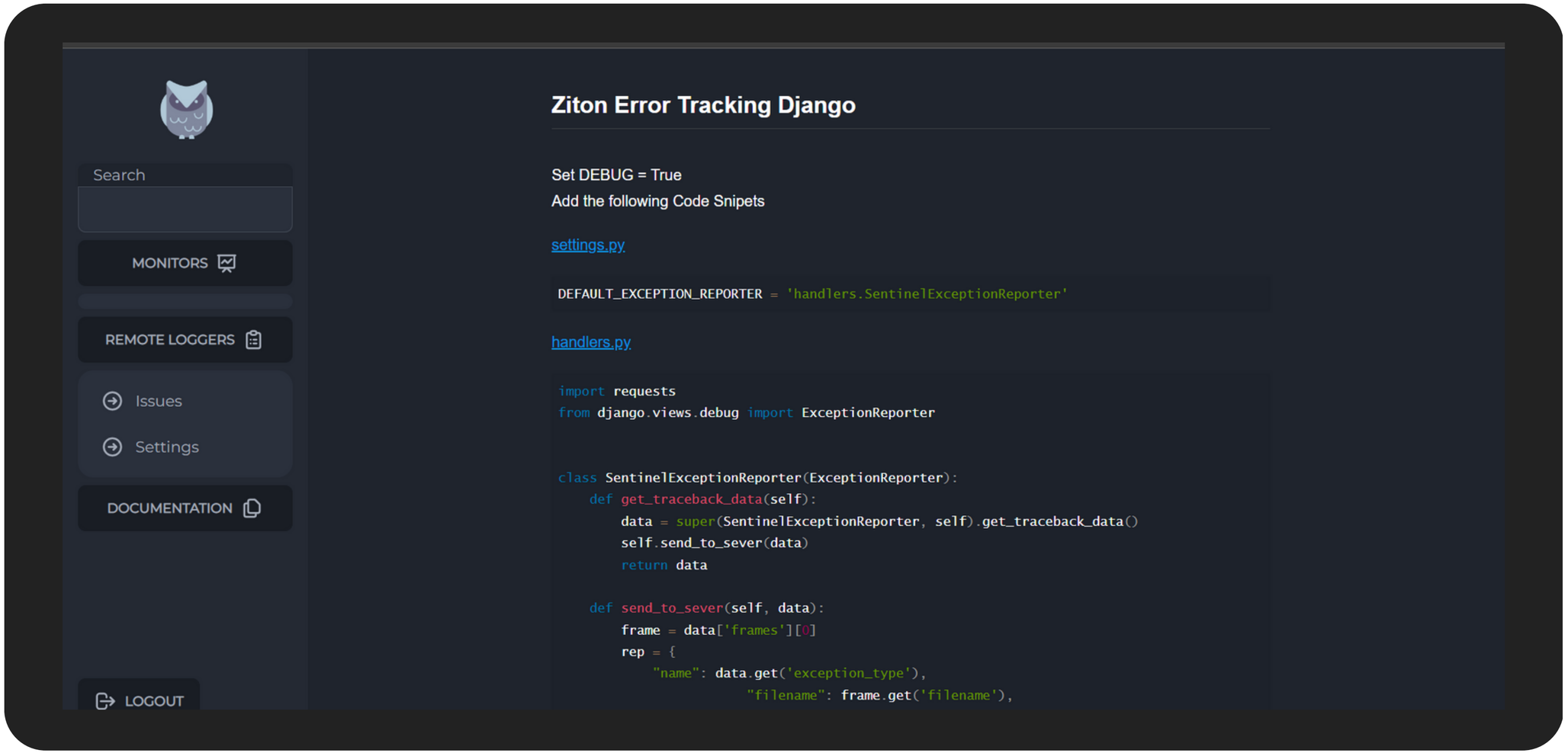

1
2
3
Search
MONITORS
REMOTE LOGGERS
Issues
Insights
Settings
DOCUMENTATION
Your DSN:
https://NTADFvLfqlRKpOzfXkuDpBVpBYOUexGDtKklWBaJmzYPtXHzOnuZyZyfQRWM.ziton.li
DOCS
Project Created successful


Search
MONITORS
REMOTE LOGGERS
Issues
Insights
Settings
DOCUMENTATION
Search...
flutter
All issues
Unissued
Assigned
Archived
'package:flutter/src/rendering/box.dart': Failed assertion: line 1979 pos 12: 'hasSize': RenderBox was not laid out: RenderViewport#041d7 NEEDS-LAYOUT NEEDS-PAINT NEEDS-COMPOSITING-BITS-UPDATE
EXCEPTION CAUGHT BY RENDERING LIBRARY
The following assertion was thrown during performLayout(): RenderBox was not laid out: RenderViewport#041d7 NEEDS-LAYOUT NEEDS-PAINT NEEDS-COMPOSITING-BITS-UPDATE
'package:flutter/src/rendering/box.dart': Failed assertion: line 1979 pos 12: 'hasSize' Either the assertion indicates an error in the framework itself, or we should provide substantially more information in this error message to help you determine and fix the underlying cause. In either case, please report this assertion by filing a bug on GitHub: https://github.com/flutter/flutter/issues/new?template=2_bug.md The relevant error-causing widget was: ListView
ListView:file:///C:/Users/athul/StudioProjects/zitonapp/lib/Error/viewport.dart:22:13 When the exception was thrown, this was the stack:
#2 RenderBox.size (package:flutter/src/rendering/box.dart:1979:12) #3 RenderViewport.performLayout
(package:flutter/src/rendering/viewport.dart:1453:39) #4 RenderObject.layout (package:flutter/src/rendering/object.dart:1915:7) #5
RenderProxyBoxMixin.performLayout (package:flutter/src/rendering/proxy_box.dart:116:14) #6 RenderObject.layout
(package:flutter/src/rendering/object.dart:1915:7) #7 RenderProxyBoxMixin.performLayout
(package:flutter/src/rendering/proxy_box.dart:116:14) #8 RenderObject.layout (package:flutter/src/rendering/object.dart:1915:7) #9
Mon Jul 25 2022 2:42:21 PM
1 Times Occurred
fluttere38


Search
MONITORS
REMOTE LOGGERS
Issues
Insights
Settings
DOCUMENTATION
META DATA
Information
Environment "Debug Mode"
Context "During Layout"
Library "Rendering Library"
Screen
OS Details
Local Host Name "Localhost"
Operating System "Android"
Number Of Processors 8
Operating System Version
Search...
#0 errorStack (package:ziton_error/src/error_stack.dart:14:20)
#1 sendError (package:ziton_error/src/send_error.dart:16:22)
#2 new ZitonError (package:ziton_error/ziton_error.dart:8:5)
#3 main.<anonymous closure> (package:zitonapp/main.dart:19:5)

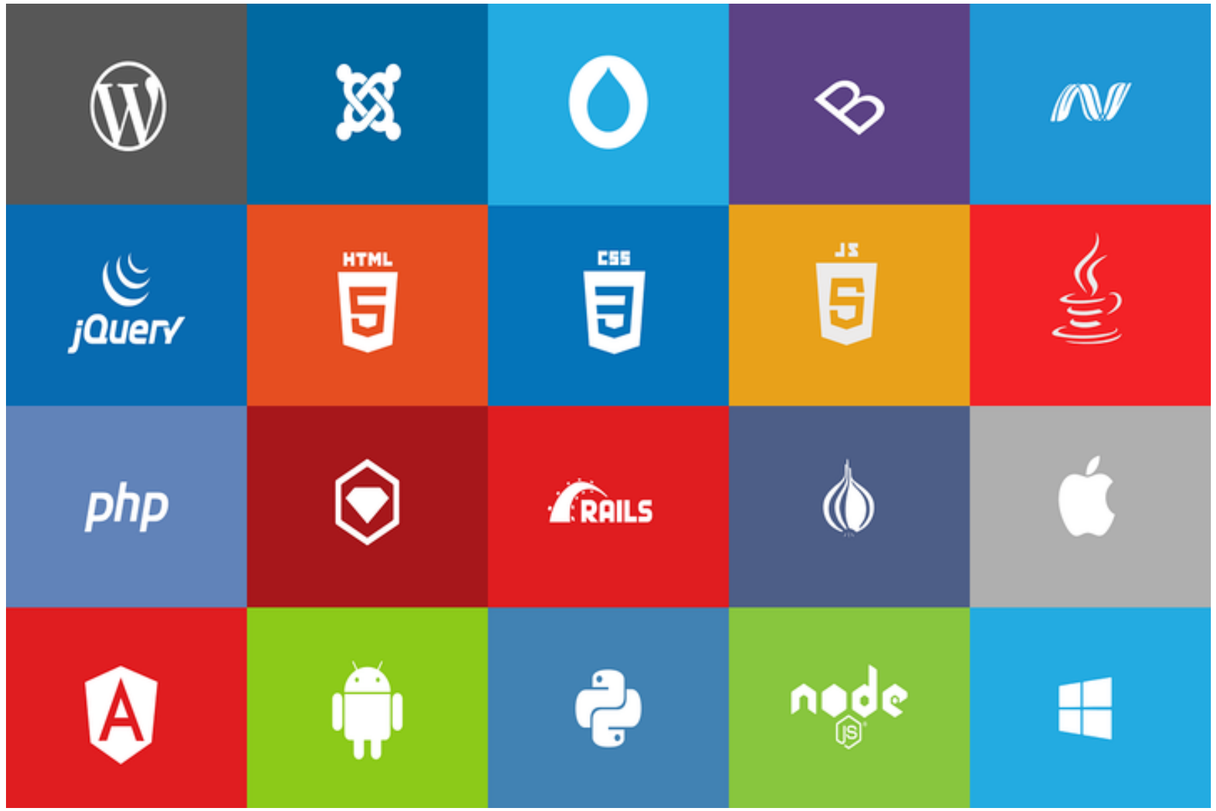

Realplugin | Flutter
plugin test

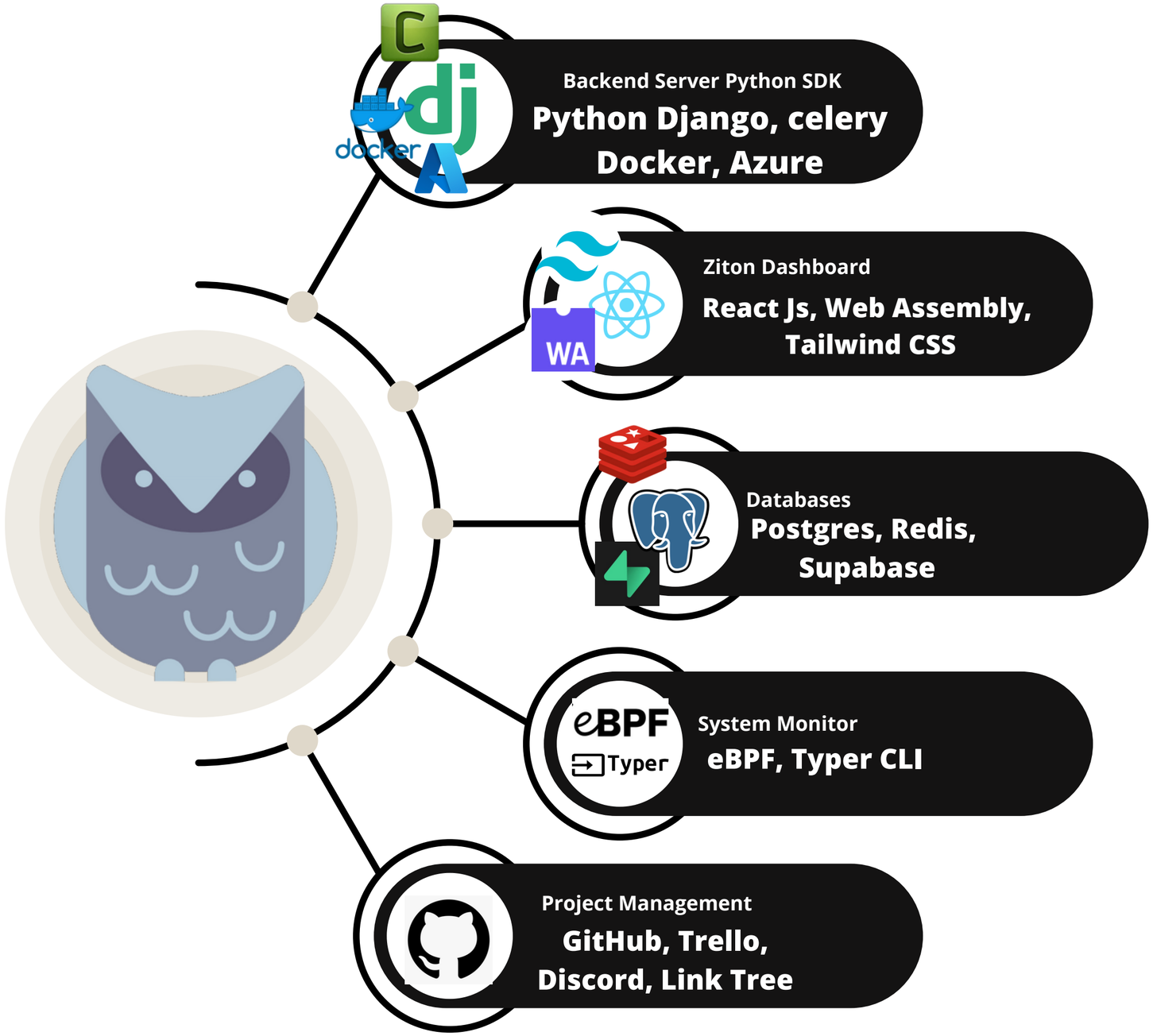

Search
MONITORS
REMOTE LOGGERS
Issues
Settings
DOCUMENTATION
LOGOUT
Recent Projects
New Project
+
Hestia22 | Flutter
hestia22 official application and website
Hestia22 | Flutter
DSN:
https://BQZsqRJtZUnmLbUnaudOimRPjhFJIaNhsIlzh
dps
test
ajithpmuralidharan01@gmail.com
dps
niranjan@ziton.live
Delete this Project
Once you delete a project, there is no going back.
Please be certain. Type "yes I confirm"


Search
MONITORS
REMOTE LOGGERS
Issues
Settings
DOCUMENTATION
LOGOUT
Ziton Error Tracking Django
Set DEBUG = True
Add the following Code Snipets
settings.py
DEFAULT_EXCEPTION_REPORTER = 'handlers.SentinelExceptionReporter'
handlers.py
import requests
from django.views.debug import ExceptionReporter
class SentinelExceptionReporter(ExceptionReporter):
def get_traceback_data(self):
data = super(SentinelExceptionReporter, self).get_traceback_data()
self.send_to_sever(data)
return data
def send_to_sever(self, data):
frame = data['frames'][0]
rep = {
"name": data.get('exception_type'),
"filename": frame.get('filename'),

Users

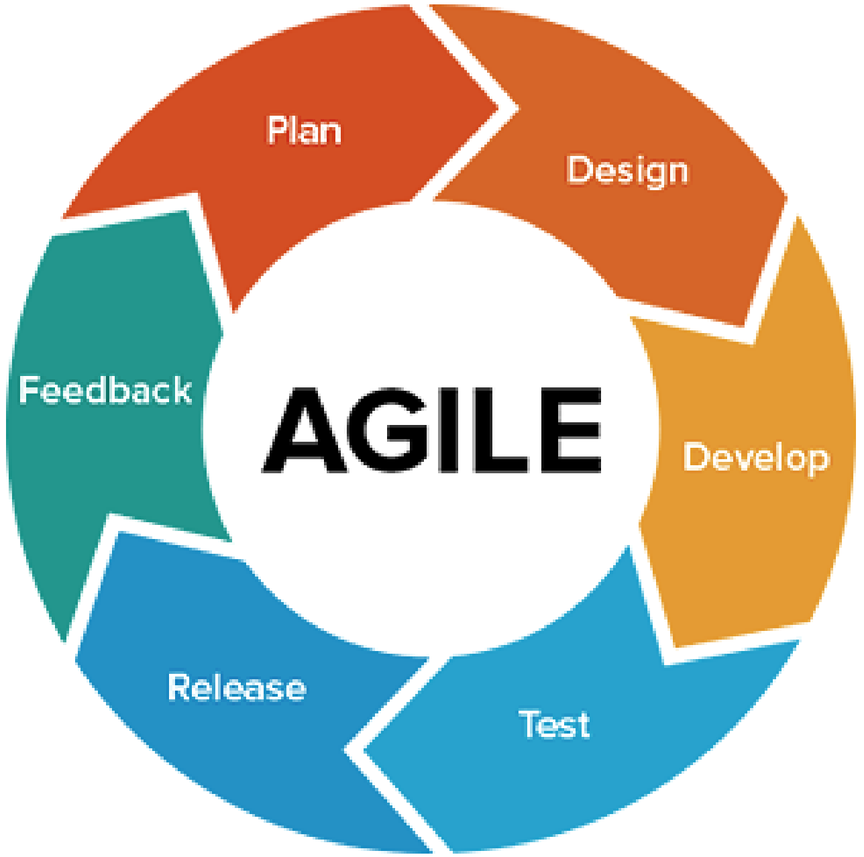
- App developers.
- Devops specialists
- Web developers.




Backend Server Python SDK
Python Django, celery
Docker, Azure
Ziton Dashboard
React Js, Web Assembly,
Tailwind CSS
Databases
Postgres, Redis,
Supabase
System Monitor
eBPF, Typer CLI
Project Management
GitHub, Trello,
Discord, Link Tree

Software Development Lifecycle

SCRUM Agile Model



WORK DISTRIBUTION

Module	% Completed	Remarks
Error Management	92%	Backend, Frontend
Application Observability	65%	BPF, Top, Parsers
Language SDKs	80%	Django SDK v0.1.3 Published Flutter SDK Published
Total	79%	

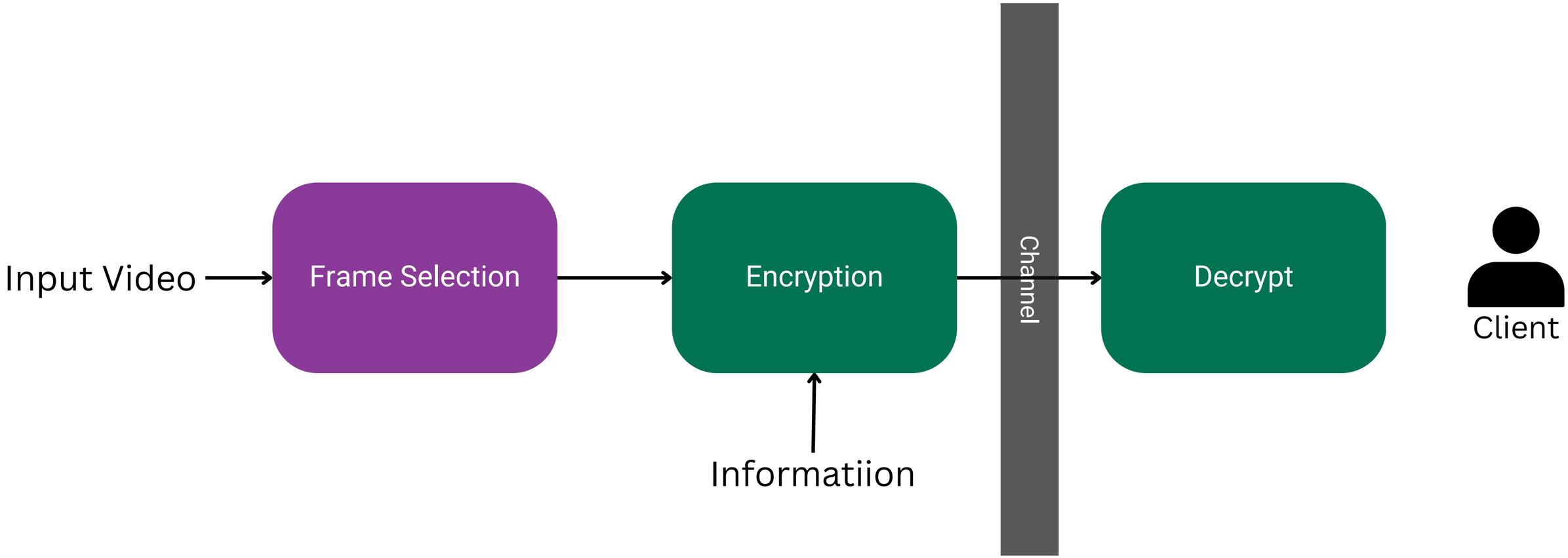
Total No. of meetings conducted: 17

Work in Progress

Dates	Nov	Dec	Jan	Feb	Mar	April	May
Phase 1							
Phase 2							
Phase 3							
Phase 4							

Work in Progress

Dates	Nov	Dec	Jan	Feb	Mar	April	May
Phase 1 (Research)							
Phase 2 (Module 1)							
Phase 3 (Module 2)							
Phase 4(Module 3)							


Input Video
Frame Selection
Encryption
Informatiion
Channel
Decrypt
Client

References

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Beta access is live

Thankyou ZITON