

Targest

Capstone Presentation



Team 006 - Adrian Bernardino, Jan William Haug, Stephania Rey

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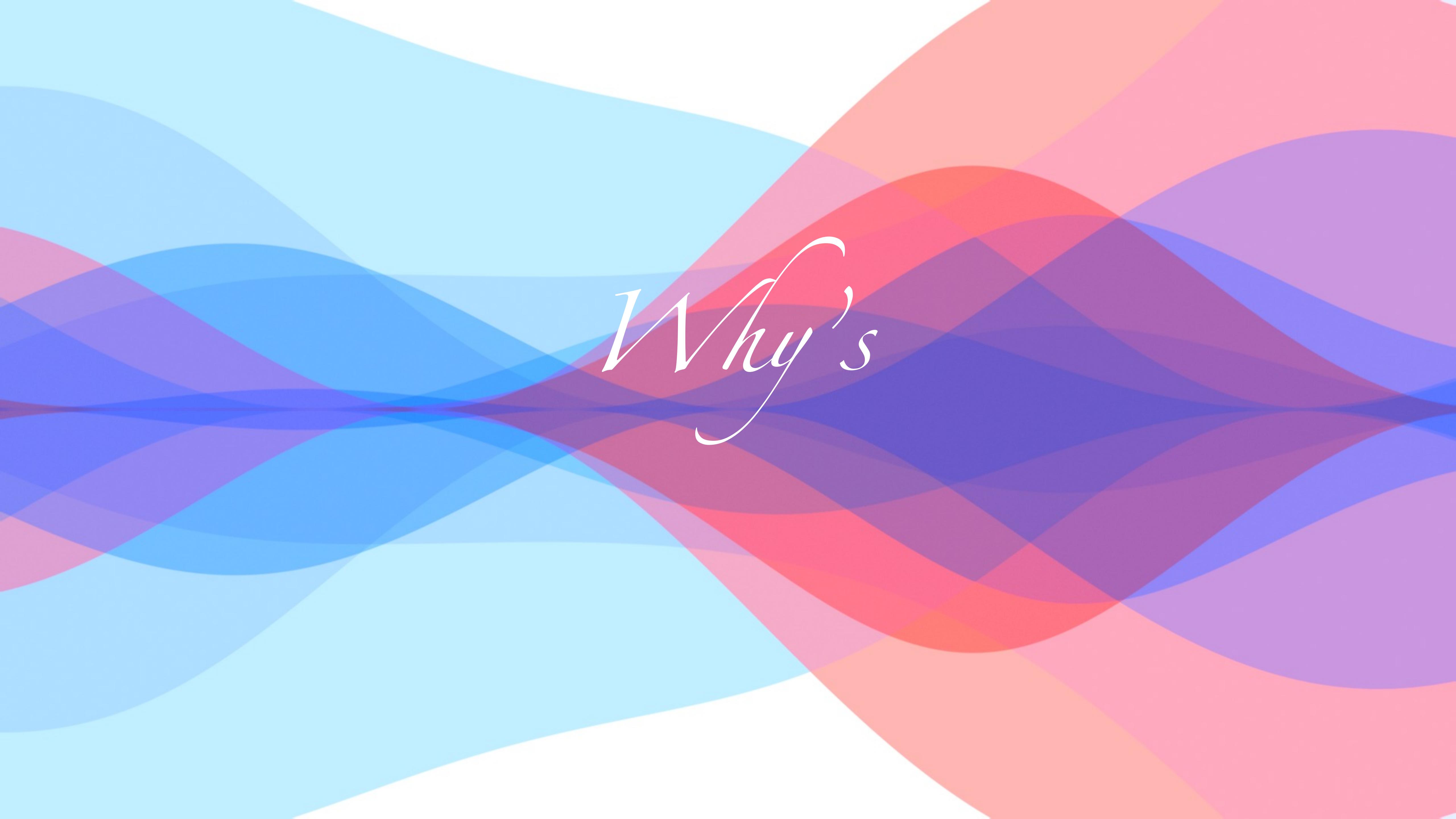


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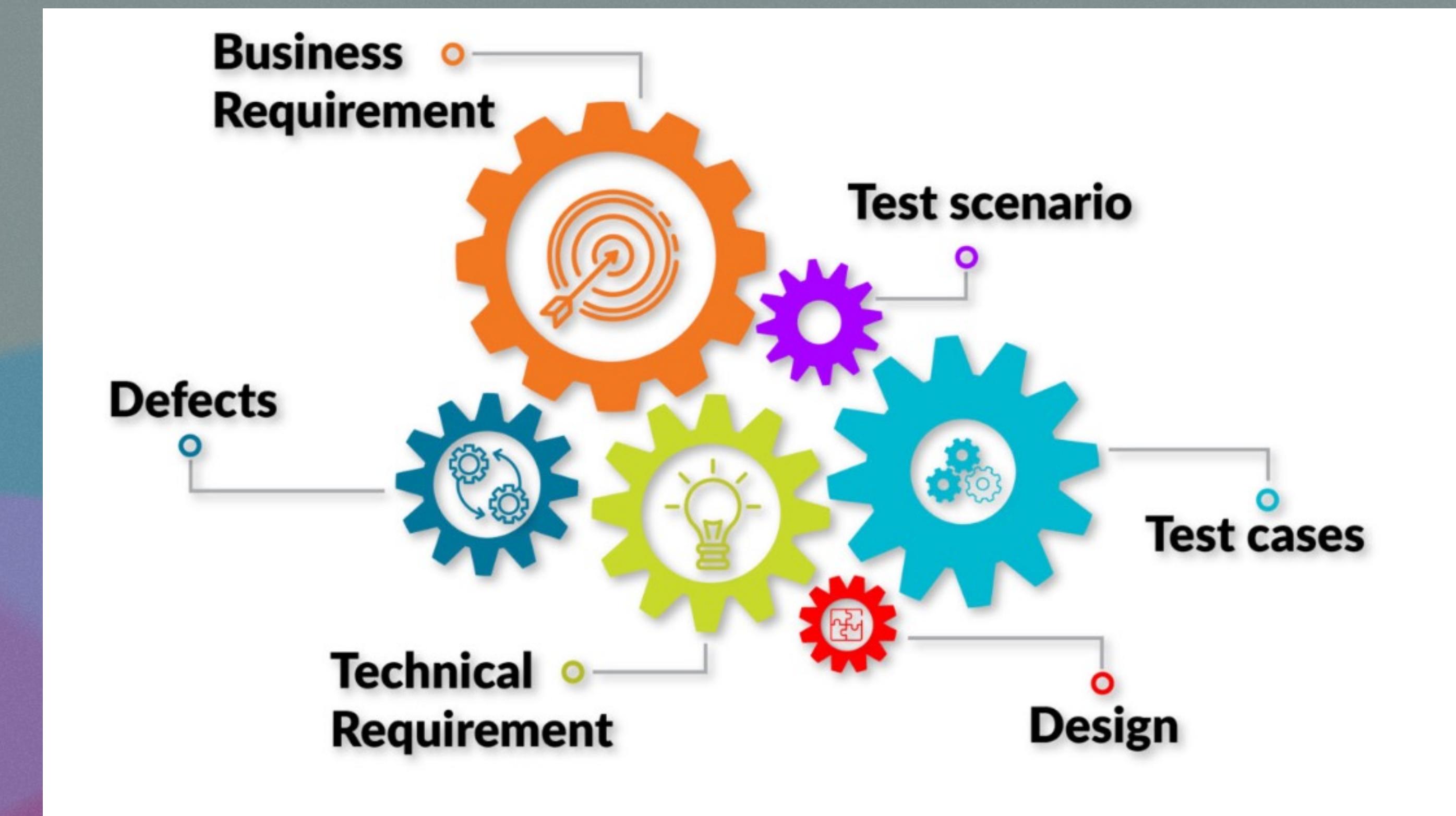
- Why's
- How's
- What's
- Next Steps
- Target unique features
- System Demo
- Q&A

The background features a dynamic, abstract design composed of numerous overlapping, semi-transparent colored bands. These bands create a sense of depth and movement, resembling waves or ripples. The colors used include various shades of blue, purple, pink, red, orange, and yellow, all blending together in a soft, organic way.

Why's

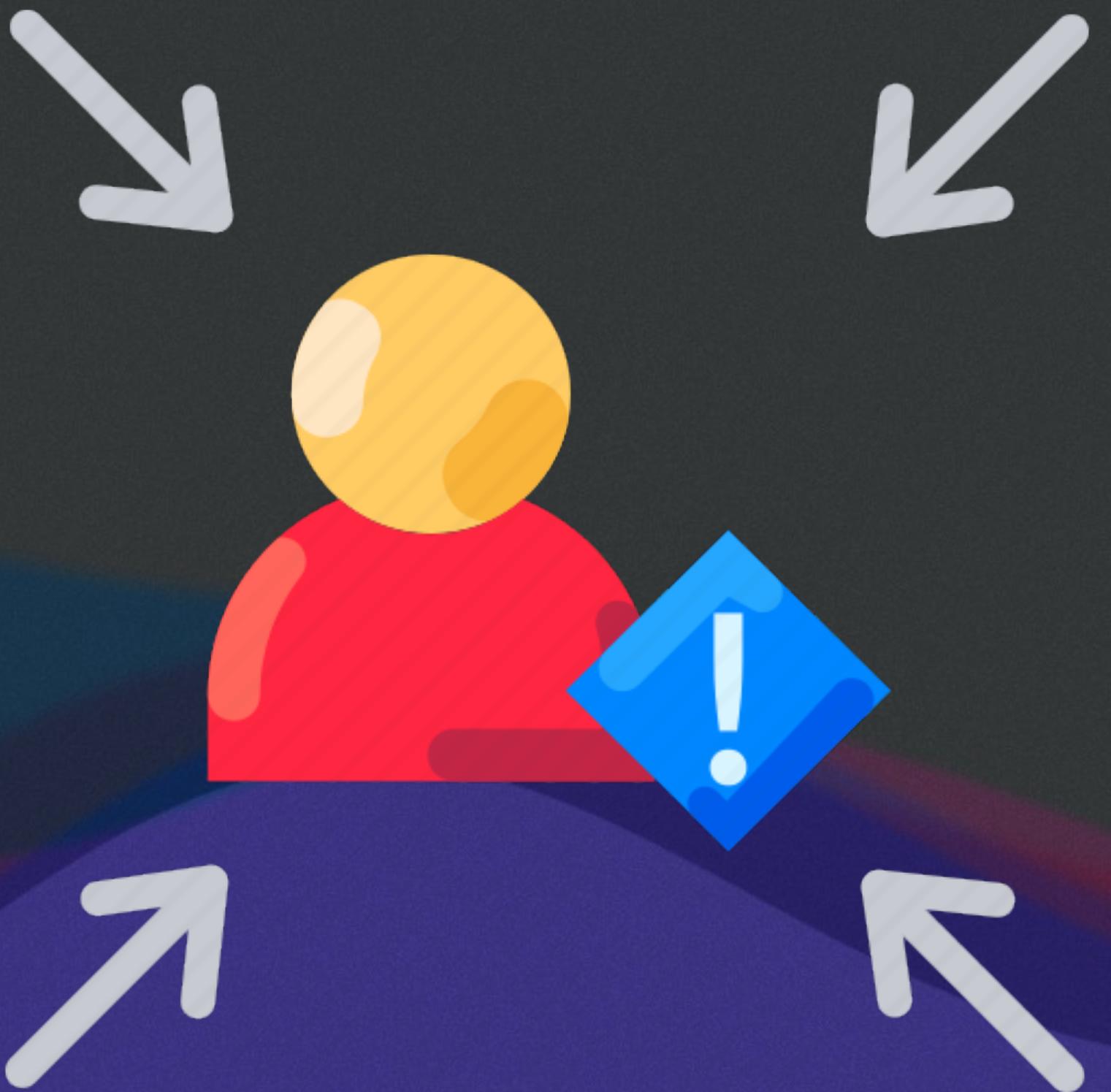
The Big 4

- Catch Mistakes
- Satisfy Regulators
- Identify Emissions
- Ongoing Savings



Catch Mistakes

- Human error
- The manual process
- Automating the process
- User-friendly interface and graphical visualization



Satisfy Regulators



- We understand and fulfill the requirements given to us
- Follow FDA guidelines
- Meeting customer expectations

Identify Emissions

- Catching subset of mistakes
- Helps ensure our features are meeting standards
- Maintenance phases of a software project

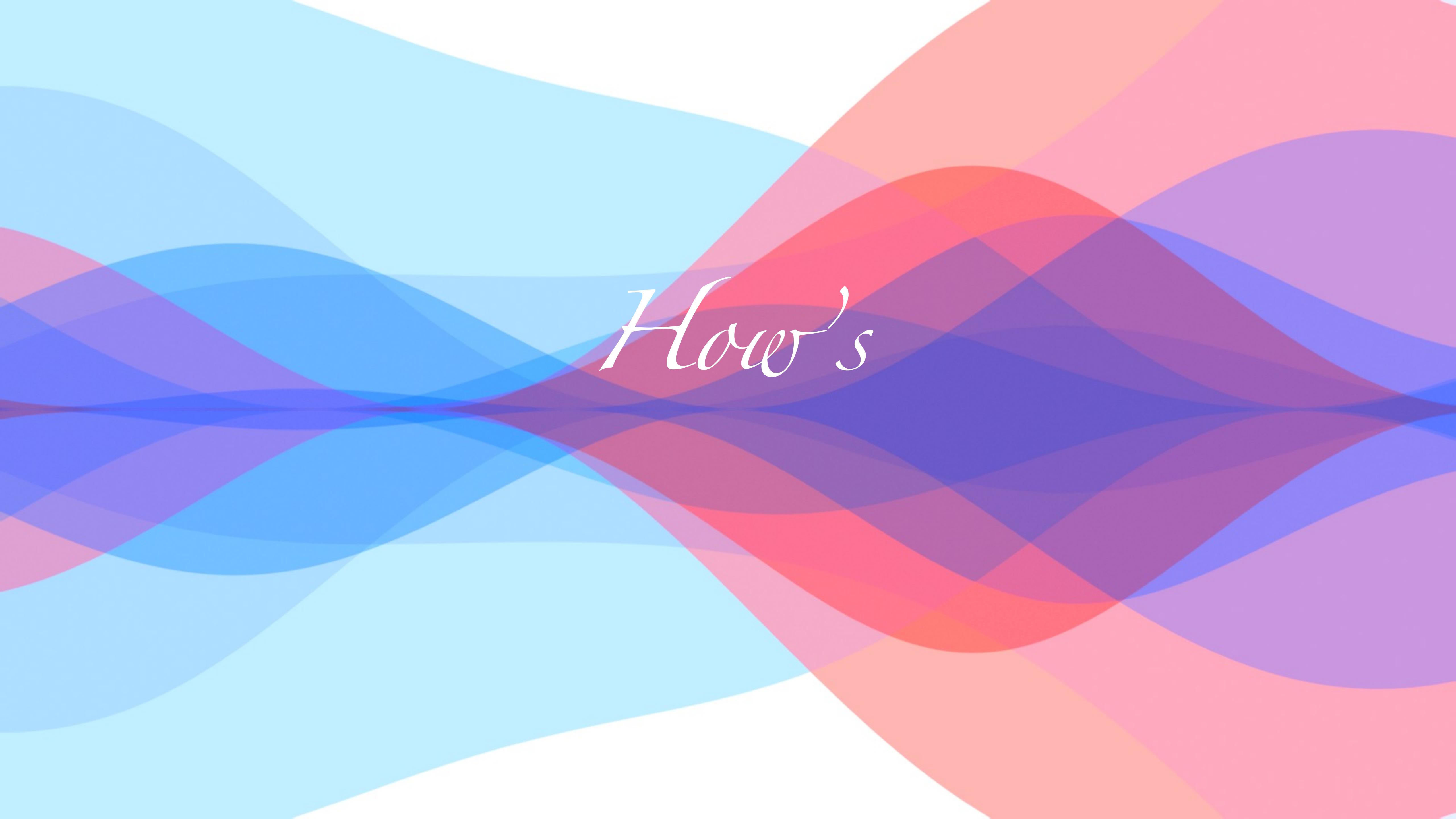


Ongoing Savings

Use case:

- Tandem, who develops medical software, has to send documents almost every month to FDA
- With Targetst, they can save money and time
- Having to manually organize requirement documents takes about 6 weeks x 40 hours per week x 200 p/hr for the burden labor rate + the overhead of the company = saving \$48,000 annually

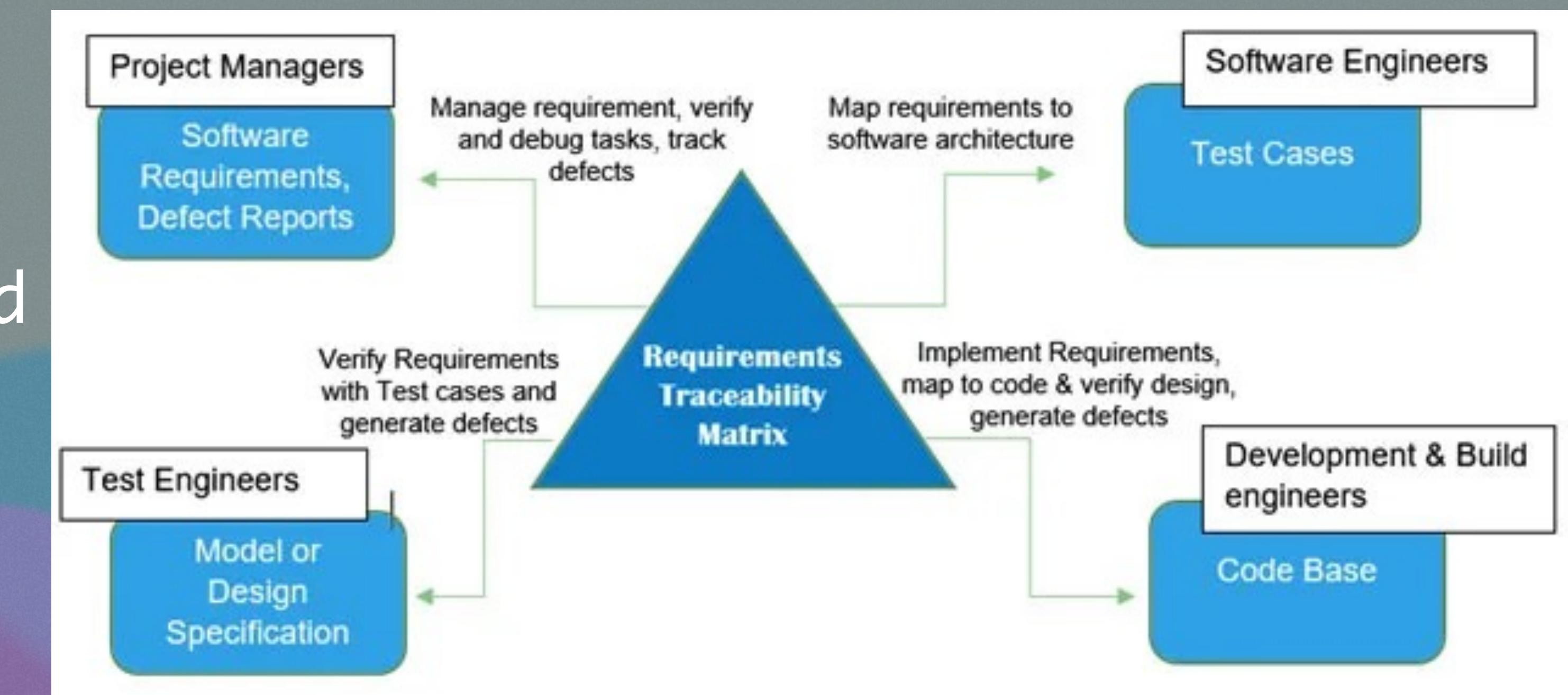


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How's

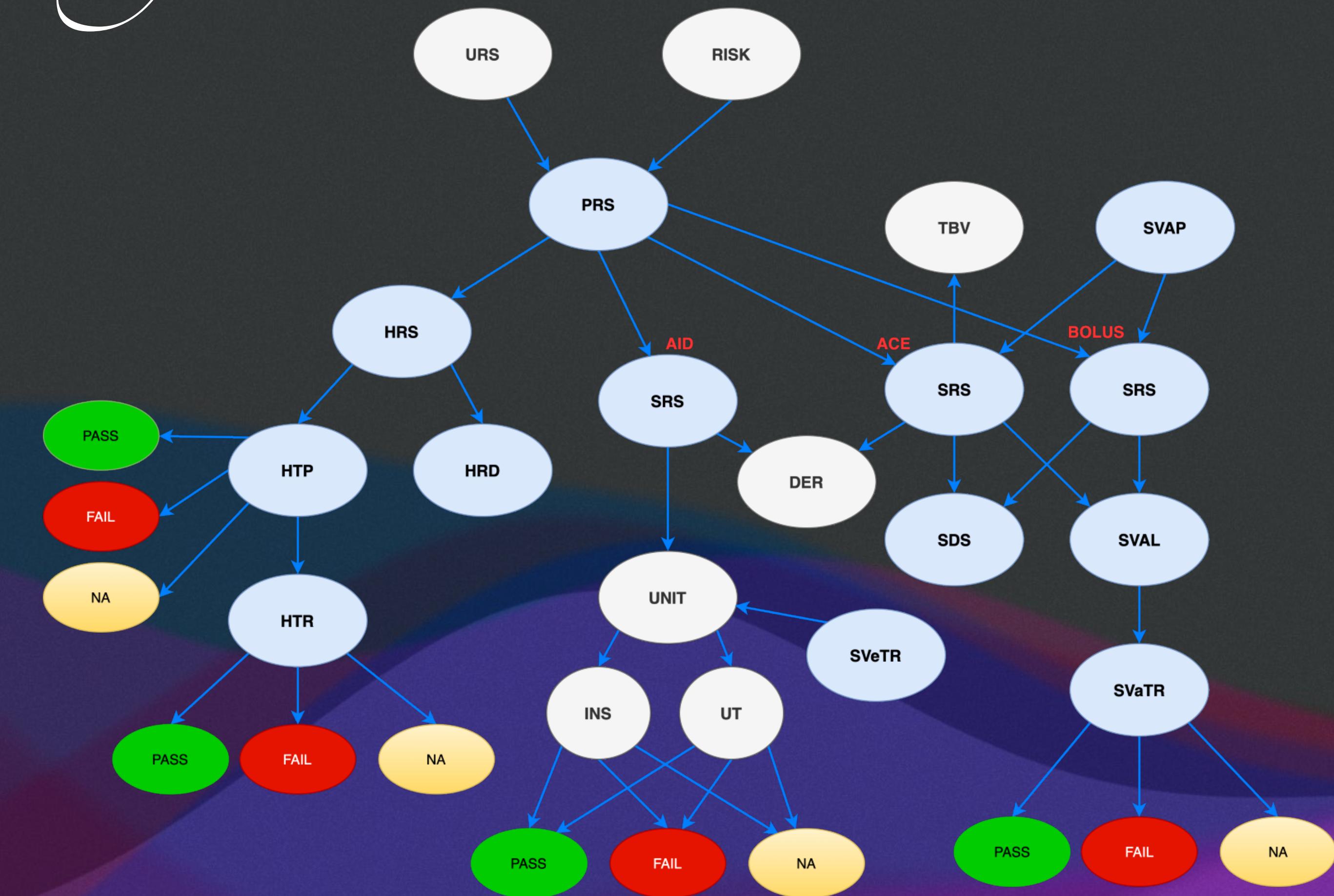
Development specifics

- Tag categorization
- Development process
- Different tools utilized
- Testing
- Features specifics



Tag Categorization

- The relationship
- The importance
- High-level requirements
- Sub-requirements
- Accounted for and adequately addressed
- Traceability
- Regulatory requirements and guidelines



Development Process

- Outlining project specifics
- Support and guidance by both Faculty and Industry Mentors
- Project management aspects
- Active user involvement



Different tools utilized

- Requirement analysis and resource planning
- Utilized Visual Studio Code as the development environment
- Leveraged Python libraries like docx and xlwings
- Enhanced functionality

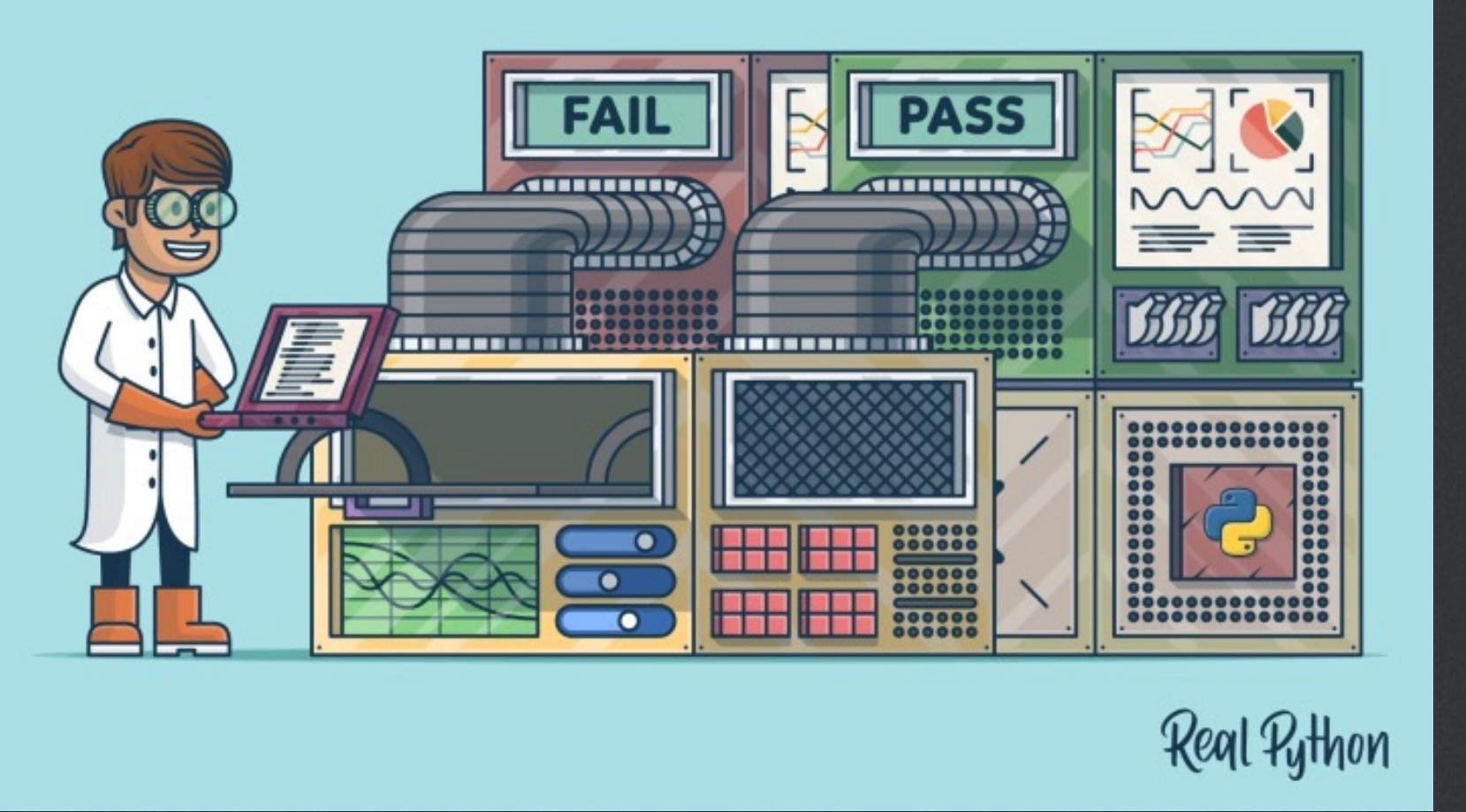


Practical Business Python



Testing

- Pyunit & Pytest testing
- Created various types of tests to catch errors and bugs and display the expected outputs as pass or fail



Real Python

The image shows two side-by-side screenshots of the PyCharm IDE interface, illustrating the results of a unit test run.

Left Screenshot: The title bar says "Target2_Test". The "Run" tab is selected, showing the command "Python tests in Target2_unittests.py". The "Test Results" tab is active, displaying the output of the test run:

```
Tests passed: 5 of 5 tests - 27 ms
PUHP:PRS:103
ACE:SRS:110
ACE:SRS:120
PUMP:TBV:3
PUMP:PRS:6
PUMP:DER:2
ACE:SRS:1000
PUMP:UNIT:100
PUMP:UNIT:110
PUMP:UNIT:120
PUMP:UNIT:130
PUMP:UNIT:140
PUMP:UNIT:150
PUMP:UNIT:160
PUMP:UNIT:170
PUMP:UNIT:180
PUMP:UNIT:190
PUMP:UNIT:200
PUMP:UNIT:210
PUMP:UNIT:220

Ran 5 tests in 0.029s
OK
Process finished with exit code 0
```

Right Screenshot: The title bar says "Target2_Test". The "Run" tab is selected, showing the command "Python tests in Target2_unittests.py". The "Test Results" tab is active, displaying the output of the test run:

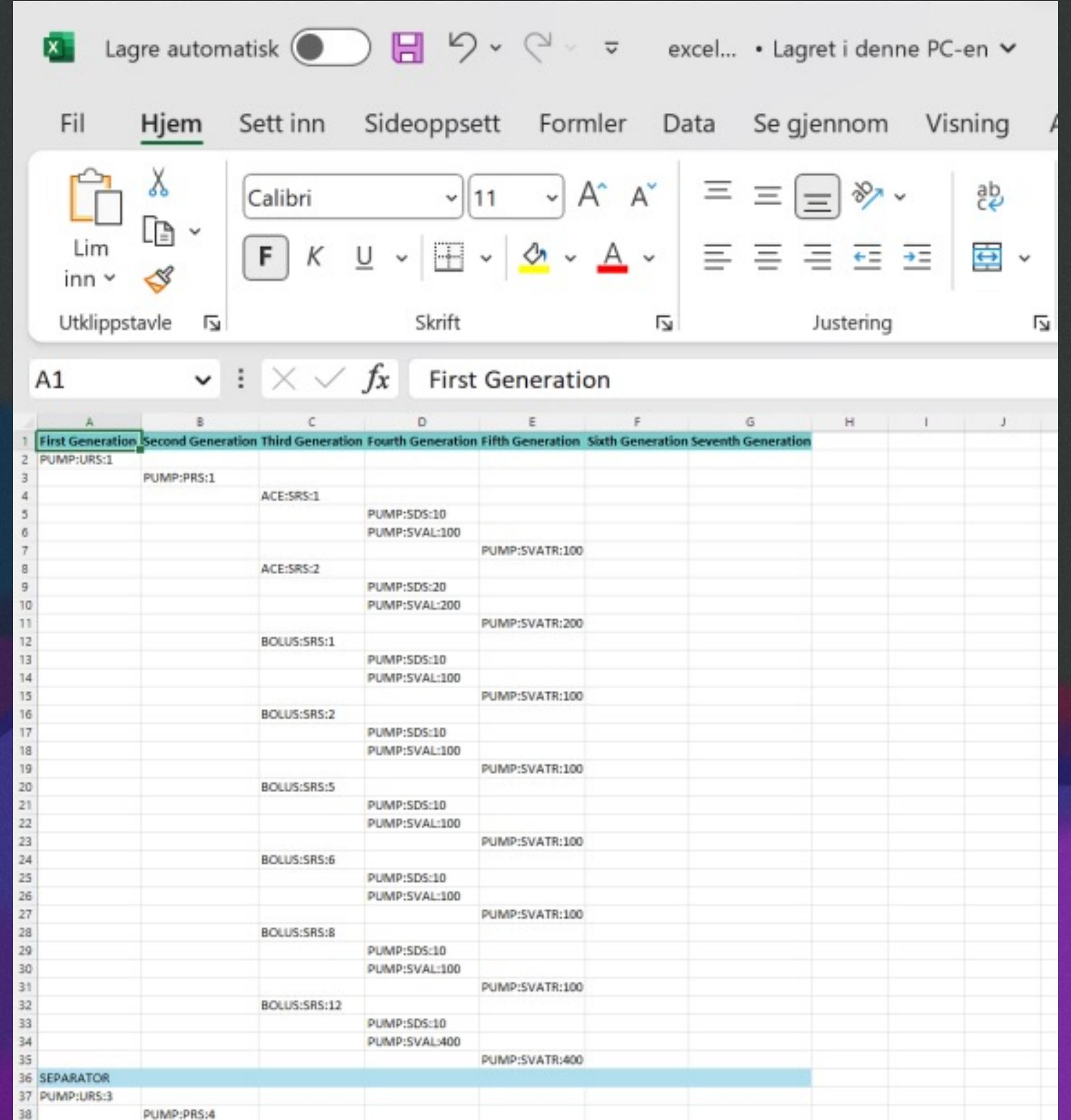
```
Tests passed: 5 of 5 tests - 27 ms
Testing started at 10:28 PM ...
Launching unittests with arguments python -m unittest C:/Users/steph/PycharmProjects/Target2_Test/tests/Target2_unittests.py in C:/Users/steph/PycharmProjects/Target2_Test

HDS_new_pump added to the report
HRS_new_pump added to the report
HTP_new_pump added to the report
HTR_new_pump added to the report
PRS_new_pump added to the report
RiskAnalysis_Pump added to the report
S05_New_pump_x04 added to the report
SRS_ACE_Pump_X01 added to the report
SRS_BolusCalc_Pump_X04 added to the report
SRS_DosingAlgorithm_X03 added to the report
SVA_P_new_pump added to the report
SVATR_new_pump added to the report
SVETR_new_pump added to the report
URS_new_pump added to the report

childless tag:
PUMP:HRS:3340
PUMP:HTR:100
PUMP:HTR:1100
PUMP:HTR:1200
PUMP:HTR:1300
PUMP:HTR:1400
PUMP:HTR:1500
PUMP:HTR:1600
```

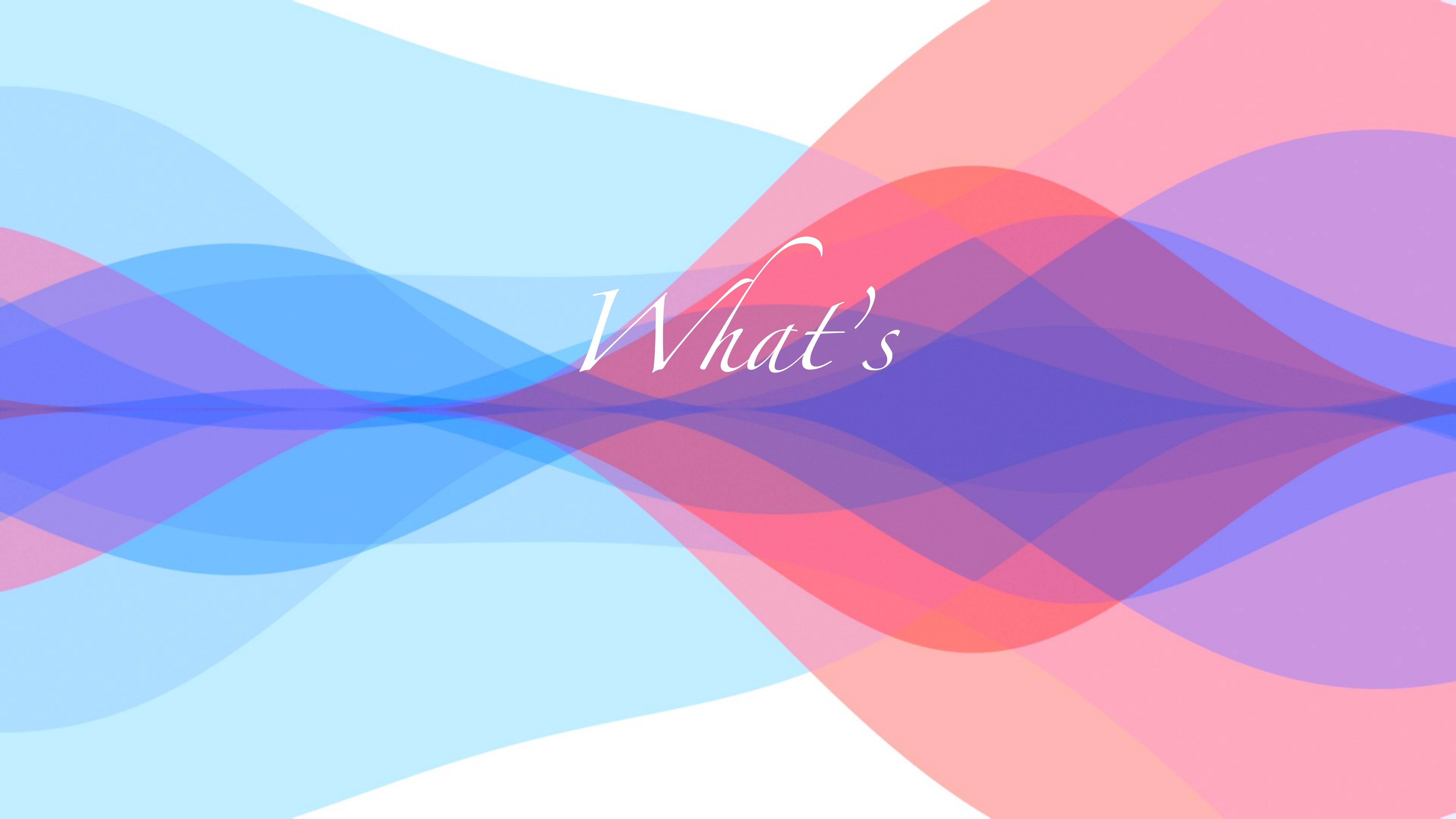
Unique Feature specifics

- Visualize the flow
- Tree format
- Requirements' hierarchy
- Better communication and collaboration
- Automating the process
- Leaves the humans out of the loop



The screenshot shows a Microsoft Excel spreadsheet titled "First Generation". The table has columns labeled A through J. Row 1 contains the header "First Generation" repeated seven times. Rows 2 through 35 contain specific requirement details, such as "PUMP:URS:1", "ACE:SRS:1", and various PUMP parameters like "SDS:10" and "SVAL:100". Row 36 is a separator row labeled "SEPARATOR". Row 37 contains "PUMP:URS:3". Row 38 contains "PUMP:PRS:4". The Excel ribbon at the top shows tabs for Fil, Hjem, Sett inn, Sideoppsett, Formler, Data, Se gjennom, Visning, and others.

A	B	C	D	E	F	G	H	I	J
1	First Generation	Second Generation	Third Generation	Fourth Generation	Fifth Generation	Sixth Generation	Seventh Generation		
2	PUMP:URS:1								
3		PUMP:PRS:1							
4			ACE:SRS:1						
5				PUMP:SDS:10					
6				PUMP:SVAL:100					
7					PUMP:SVATR:100				
8			ACE:SRS:2						
9				PUMP:SDS:20					
10				PUMP:SVAL:200					
11					PUMP:SVATR:200				
12			BOLUS:SRS:1						
13				PUMP:SDS:10					
14				PUMP:SVAL:100					
15					PUMP:SVATR:100				
16			BOLUS:SRS:2						
17				PUMP:SDS:10					
18				PUMP:SVAL:100					
19					PUMP:SVATR:100				
20			BOLUS:SRS:5						
21				PUMP:SDS:10					
22				PUMP:SVAL:100					
23					PUMP:SVATR:100				
24			BOLUS:SRS:6						
25				PUMP:SDS:10					
26				PUMP:SVAL:100					
27					PUMP:SVATR:100				
28			BOLUS:SRS:8						
29				PUMP:SDS:10					
30				PUMP:SVAL:100					
31					PUMP:SVATR:100				
32			BOLUS:SRS:12						
33				PUMP:SDS:10					
34				PUMP:SVAL:400					
35					PUMP:SVATR:400				
36	SEPARATOR								
37	PUMP:URS:3								
38		PUMP:PRS:4							

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What's

Learning Curve and Overcoming Challenges

- Challenges
- Strategies
- Outcomes
- Perseverance



What did we learn

- Enhancement of Technical Skills
- Problem-solving
- Effective Project Management
- Teamwork and Collaboration



WHAT DID
WE LEARN?

Demo

Targest



Summary Table

Users should be able to upload and process multiple Word documents simultaneously	100% Done ✓
Users should be able to generate comprehensive reports, included information such as, parent-child relationships, orphan and childless tags.	100% Done ✓
Users should be able to generate reports in Excel format	100% Done ✓
The software should be accessible and operable on both Windows OS and MAC OS	100% Done ✓
Users should find the software's GUI easy to use	100% Done ✓
Users should be able to view high-level graphical representations of the flow of requirements across multiple documents	100% Done ✓
The software should provide a stable and bug-free experience to the users	100% Done ✓
Users should be able to handle varying numbers of documents	100% Done ✓

Next Steps

- Refactor codebase
- Prioritize simplicity for User-Friendly focus
- Considering cloud computing service models
- Extra Features
- Unit testing



Thank you!



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