

Regressionstest?

Wer hat manuell getestet?

Wer hat manuell regressionsgetestet?

Wem hat das Spaß gemacht?

Warum haben Sie nicht automatisch getestet?

Probleme heutiger UI-Testautomatisierung:

- Tests aufwendig zu Erstellen
- Tests aufwendig zu Pflegen
- Tests brüchig
- Tests unvollständig

Untitled (untitled suite) - Selenium IDE 2.9.0 *

Base URL

Fast Slow

Test Case
Untitled *

Command	Target	Value
open	/	
clickAndWait	link=Häufige Fragen	

Command: clickAndWait

Target: link=Häufige Fragen

Value:

link=Häufige Fragen	link
//a[contains(text(),'Häufige Fragen')]	xpath:link
//ul[@id='nav']/li[2]/ul/li[2]/a	xpath:idRelative
//a[@href='http://www.retest.de/fa...]	xpath:href
//li[2]/a	xpath:position

Runs: 0
Failures: 0

Log Reference UI-Element Rollup

clickAndWait(locator)
Generated from **click(locator)**

Arguments:

- locator - an element locator

Clicks on a link, button, checkbox or radio button. If the click action causes a new page to load (like a link usually does), call waitForPageToLoad.

HumiCalc with Uncertainty

File Options Help

Configuration

Temperature Scale: ITS-90 Carrier Gas: Dry Air Mode: Normal

Equilibrium Over: Water Apply Enhancement Factors: Known: Dew Point

Known Values (Standard u)

Dew Point: 10.0 ±0.0577

Temperature: 25.0 ±0.025

Pressure: 14.7 ±0.025

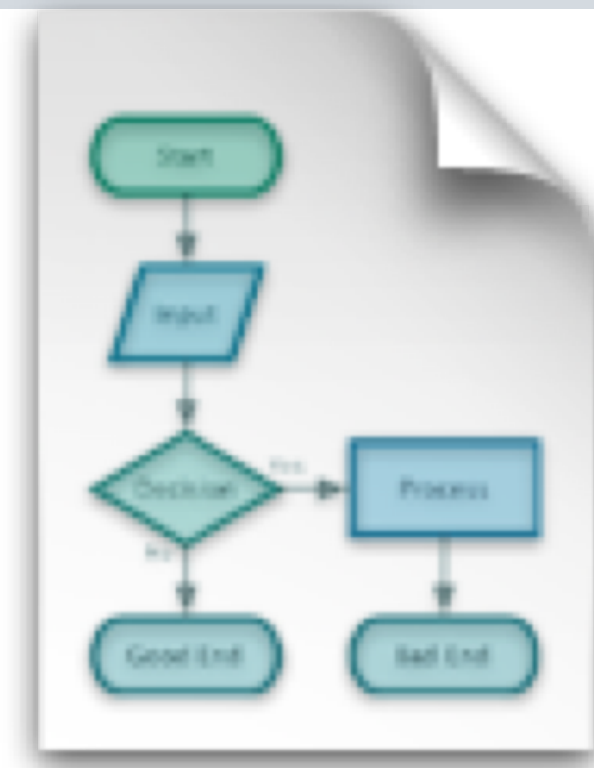
Calculate

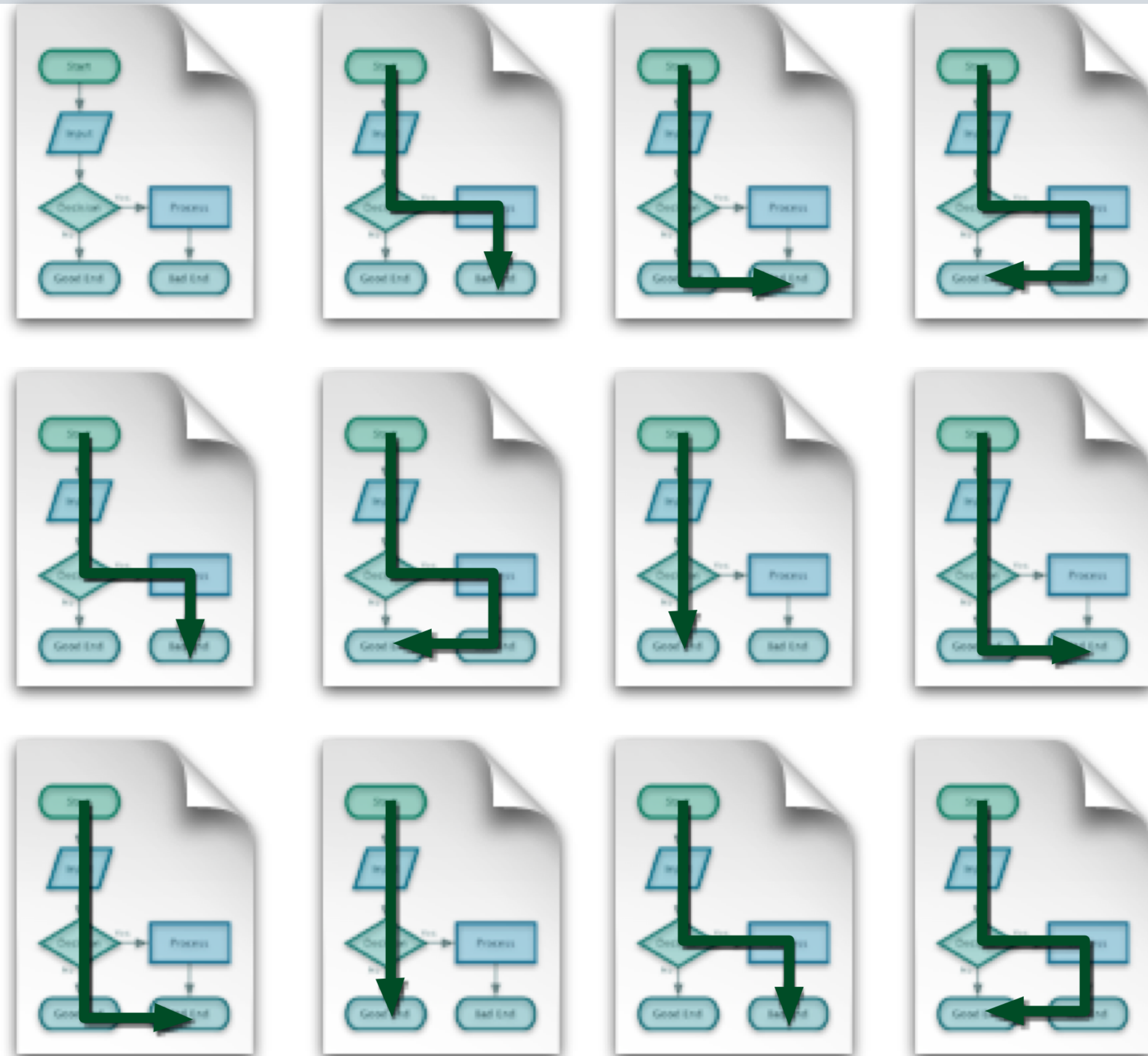
Units

Temperature: °C Pressure: psia Vapor Pressure: Pa Density and Abs Humidity: g/m³ Enthalpy: J/g

Calculated Values (Expanded U with 95.45% Confidence)

%RH	38.7340793	±0.3212	Specific Humidity	0.0076028	±6E-005
Frost Point			Absolute Humidity	8.962178468	±0.0694
Dew Point	10.0	±0.1155	Dry Air Density	1169.837556	±4.0342
PPMv	12314.00364	±105.31	Moist Air Density	1178.799735	±4.033
PPMw	7661.045263	±65.521	Saturation Temperature		
Grains/lb	53.62731684	±0.4586	Saturation Pressure		
Enthalpy	44.63021277	±0.1744	Wet Bulb Temperature	16.10904106	±0.0559
SVP@Tt	3169.90395	±9.4493	Mixing Ratio by Volume	0.012314004	±0.0001
SVP@Td	1228.13339	±9.5028	Mixing Ratio by Weight	0.007661045	±7E-005
SVP@Ts			Percent by Volume	1.216421347	±0.0103
F@Tt,Pt	1.004109348	±1E-005	Percent by Weight	0.760279987	±0.0065
F@Td,Pt	1.003863842	±1E-005	Vapor Mole Fraction	0.012164213	±0.0001
F@Ts,Ps			Dry Air Mole Fraction	0.987835787	±0.0001





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Runs: 0
Failures: 0

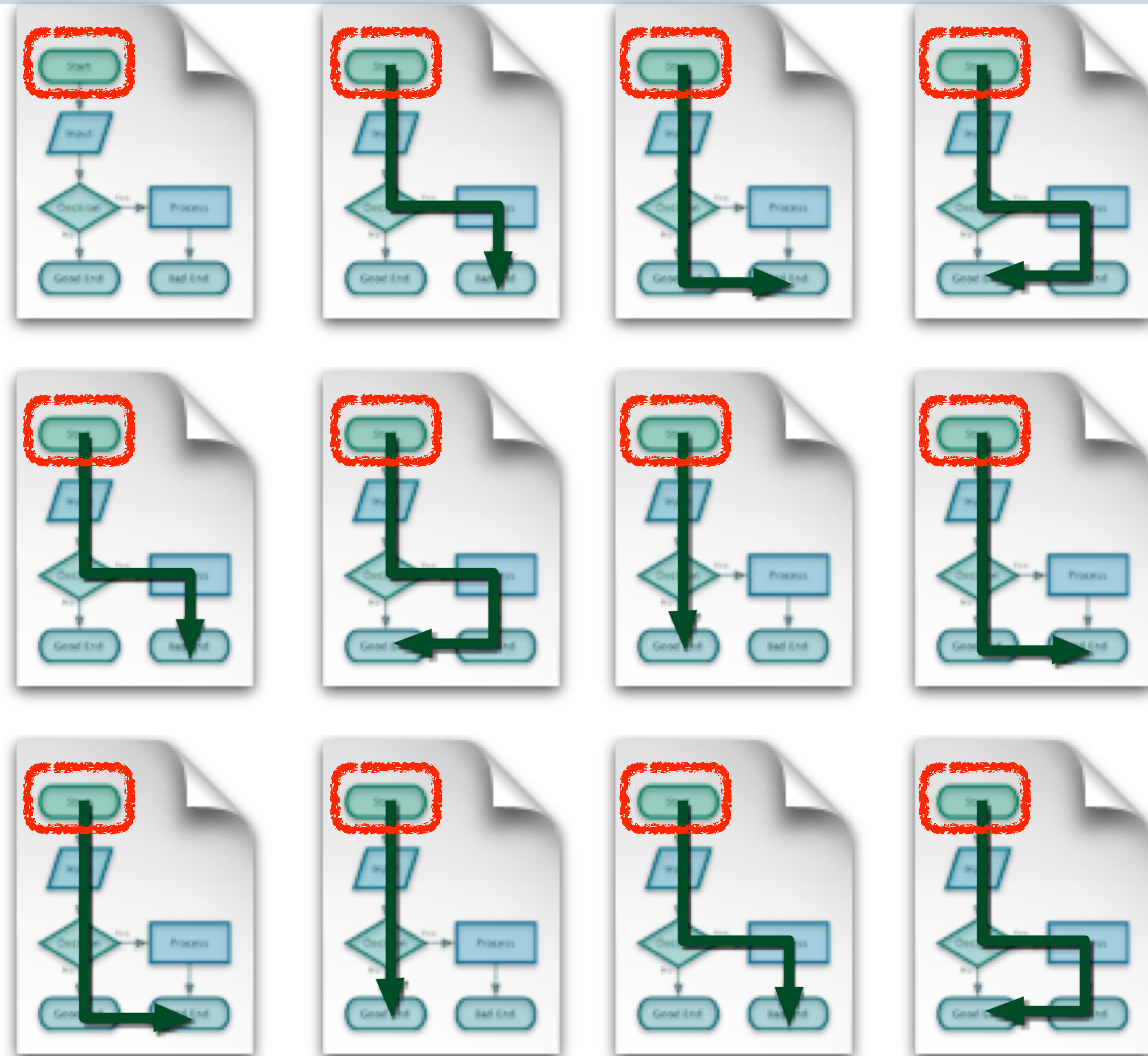
Log Reference UI-Element Rollup

clickAndWait(locator)
Generated from **click(locator)**

Arguments:

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Clicks on a link, button, checkbox or radio button. If the click action causes a new page to load (like a link usually does), call `waitForPageToLoad`.



2. Programmierprojekt

Test History

localhost:18085/CleanCode?testHistory

Test History for CleanCode

View as Overview | Purge > 30 days | Purge > 7 days | Purge all | Cancel

Page	Pass	Fail	Latest	Last 20 Results
CleanCode	13	27	11 Jul 13, 19:54	- - - - - - - - - -
CleanCode.ConcatFixtureTest	5	1	20 Jun 13, 19:43	+ + + + + -
CleanCode.ConceptNotes.AccessWindowsEnvironmentVariables	37	1	11 Jul 13, 19:54	+ + + + + + + + + +
CleanCode.ConceptNotes.AppSettingsTestPage	46	12	11 Jul 13, 19:54	+ + + + + + + + + +
CleanCode.ConceptNotes.CheckingForBlankOrNull	15	5	11 Jul 13, 19:54	+ + + + + + + + + +
CleanCode.ConceptNotes.DefineAndUseSymbolsAndVariables	36	1	11 Jul 13, 19:54	+ + + + + + + + + +
CleanCode.ConceptNotes.DemoPage	0	5	07 Jul 13, 06:08	- - - - -
CleanCode.ConceptNotes.IncludeOtherPagesToAvoidCodeDuplication.TestPageIncludingTestFragment	34	1	11 Jul 13, 19:54	+ + + + + + + + + +
CleanCode.ConceptNotes.OrderOfParametersMatters	26	6	11 Jul 13, 19:54	+ + + + + + + + + +
CleanCode.ConceptNotes.PausingTestsToExamineExternalResources	10	1	10 Jul 13, 07:06	- - - - - - - - - -
CleanCode.ConceptNotes.ReturnMultipleRowsFromFixtureCode	0	27	11 Jul 13, 19:54	- - - - - - - - - -
CleanCode.ConceptNotes.SuppressSetUpInheritance.SuppressInheritance	31	10	11 Jul 13, 19:54	+ + + + + + + + + +
CleanCode.ConceptNotes.TestForFailure	37	2	11 Jul 13, 19:54	+ + + + + + + + + +
CleanCode.ConceptNotes.TestPageUsingInclude	1	0	30 Jun 13, 14:18	+ + + + +
CleanCode.ConceptNotes.UsingComments	20	0	11 Jul 13, 19:54	+ + + + + + + + + +
CleanCode.ConceptNotes.UsingCommonArguments	6	4	07 Jul 13, 17:03	- - - - - - - - - -
CleanCode.CountFixturePage	3	2	20 Jun 13, 19:43	+ + - - - + + + + +
CleanCode.DataBaseNotes	3	4	09 Jul 13, 19:15	- - - - - + + + + +
CleanCode.DataBaseNotes.CrudOperations	44	3	11 Jul 13, 19:54	+ + + + + + + + + +
CleanCode.DataBaseNotes.HelloDbTest	44	1	11 Jul 13, 19:54	+ + + + + + + + + +
CleanCode.DataBaseNotes.SimpleFetch	9	50	11 Jul 13, 19:54	- - - - - - - - - -
CleanCode.DataBaseNotes.SpecifyingFieldsToMatch	0	15	07 Jul 13, 20:00	- - - - - - - - - -
CleanCode.EchoFixturePage	7	2	20 Jun 13, 19:43	+ + - - - + + + + +
CleanCode.FileOperationsFixtureTest	3	0	20 Jun 13, 19:43	+ + + + +
CleanCode.FixturesWithNotes.BasicNotes	1	0	22 Jun 13, 14:33	- - - - -
CleanCode.FixturesWithNotes.SymbolsAndVariables	2	0	30 Jun 13, 14:13	+ + + + +
CleanCode.FixturesWithTests	4	0	23 Jun 13, 15:01	+ + + + +
CleanCode.FixturesWithTests.ConcatFixtureTest	9	0	30 Jun 13, 14:08	+ + + + + + + + + +

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```
public void testSomething() throws Exception {
    // here be some test code ...
    UIElement element = driver.findElement("path/to/element");
    assertEquals(null, element.getAction());
    assertEquals("action", element.getActionCommand());
    assertEquals(true, element.isEnabled());
    assertEquals(true, element.isFocusable());
    assertEquals("Lucida Grande", element.getFont().getName());
    assertEquals(13, element.getFont().getSize());
    assertEquals(0, element.getFont().getStyle());
    assertEquals(23, element.getHeight());
    assertEquals(null, element.getIcon());
    assertEquals(0, element.getMnemonic());
    assertEquals(null, element.getPressedIcon());
    assertEquals(true, element.isSelected());
    assertEquals("label", element.getText());
    assertEquals(119, element.getWidth());
    assertEquals(27, element.getX());
    assertEquals(191, element.getY());
}
```

ReTest

Ihr Vollautomatischer Regressionstester.

Weniger Risiko, weniger Stress, weniger Kosten!

Haben Sie genug vom Testen?

Sowohl manuelles Testen, als auch das manuelle Erstellen und Pflegen von automatischen Tests sind unbeliebte Zeitfresser. Direkt aus der Forschung ist ReTest als bisher einziges Produkt seiner Art Ihr

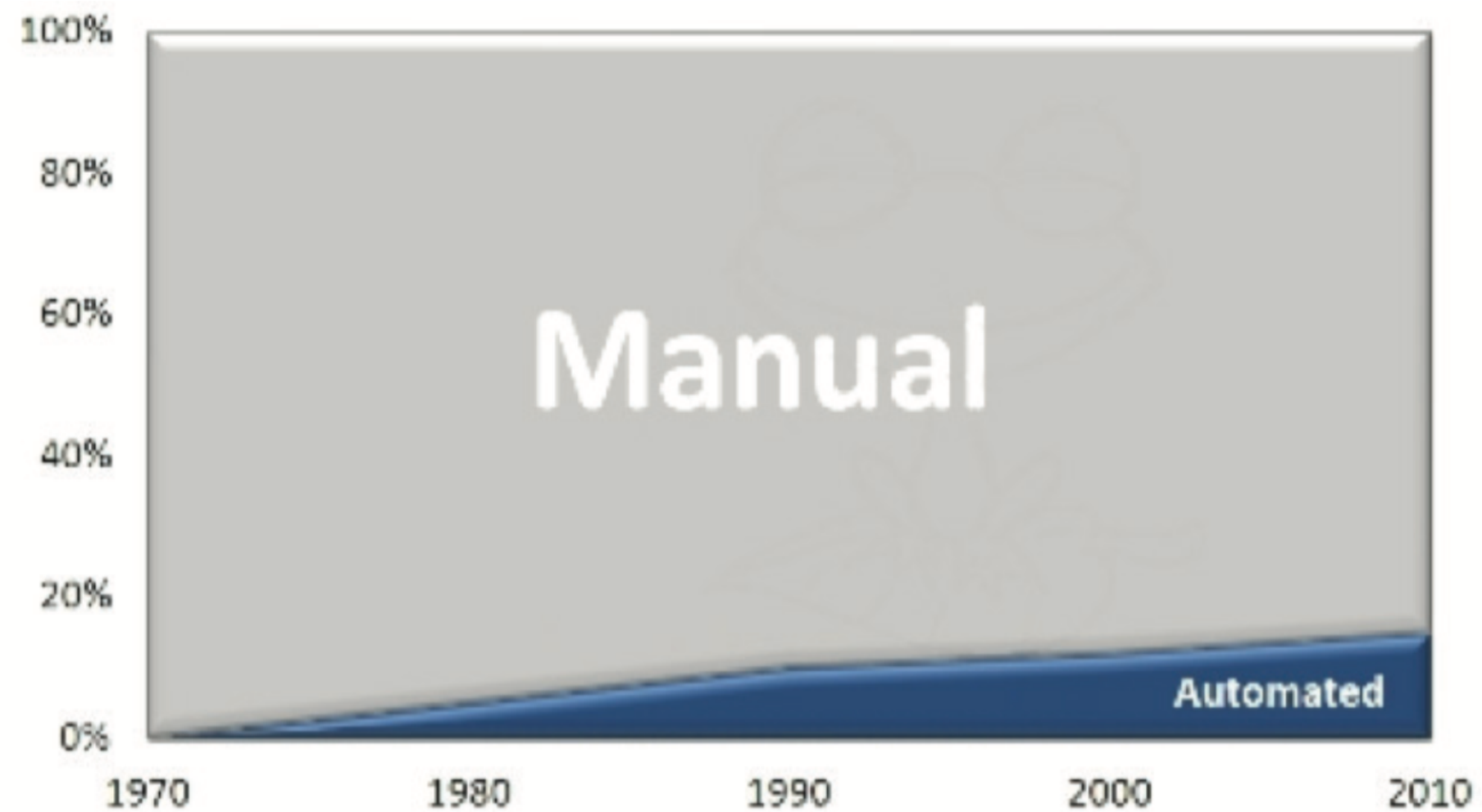
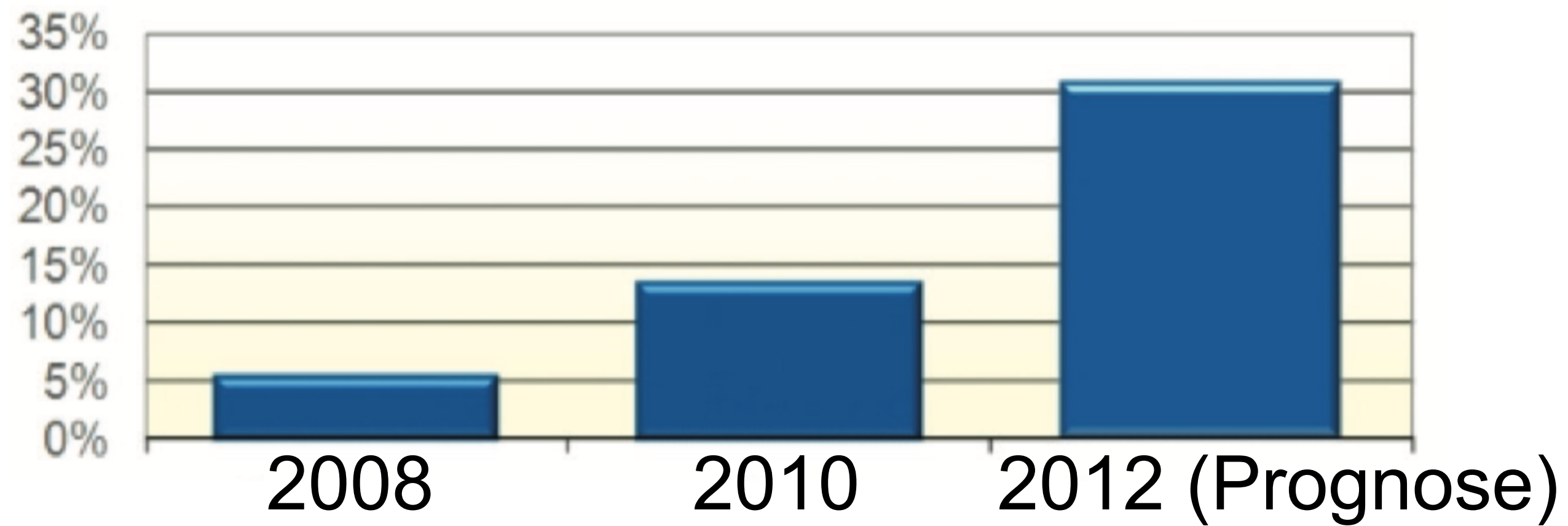




“ High test/code ratio
is a symptom of high coupling in the code.
Or *wasteful testing*.

Kent Beck

Test Automatisierung



28%

Test cases
automated now

2014

Doing the thing right!

Doing the right thing?



HumiCalc with Uncertainty

File Options Help

Configuration

Temperature Scale: ITS-90 Carrier Gas: Dry Air Mode: Normal
 Equilibrium Over: Water Apply Enhancement Factors: Known: Dew Point

Known Values (Standard u)

Dew Point: 10.0 ±0.0577
 Temperature: 25.0 ±0.025
 Pressure: 14.7 ±0.025

Calculate

Units

Temperature: °C
 Pressure: psia
 Vapor Pressure: Pa
 Density and Abs Humidity: g/m³
 Enthalpy: J/g

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F@Ts,Ps			Dry Air Mole Fraction	0.987835787	±0.0001

When is a bug NOT a bug?



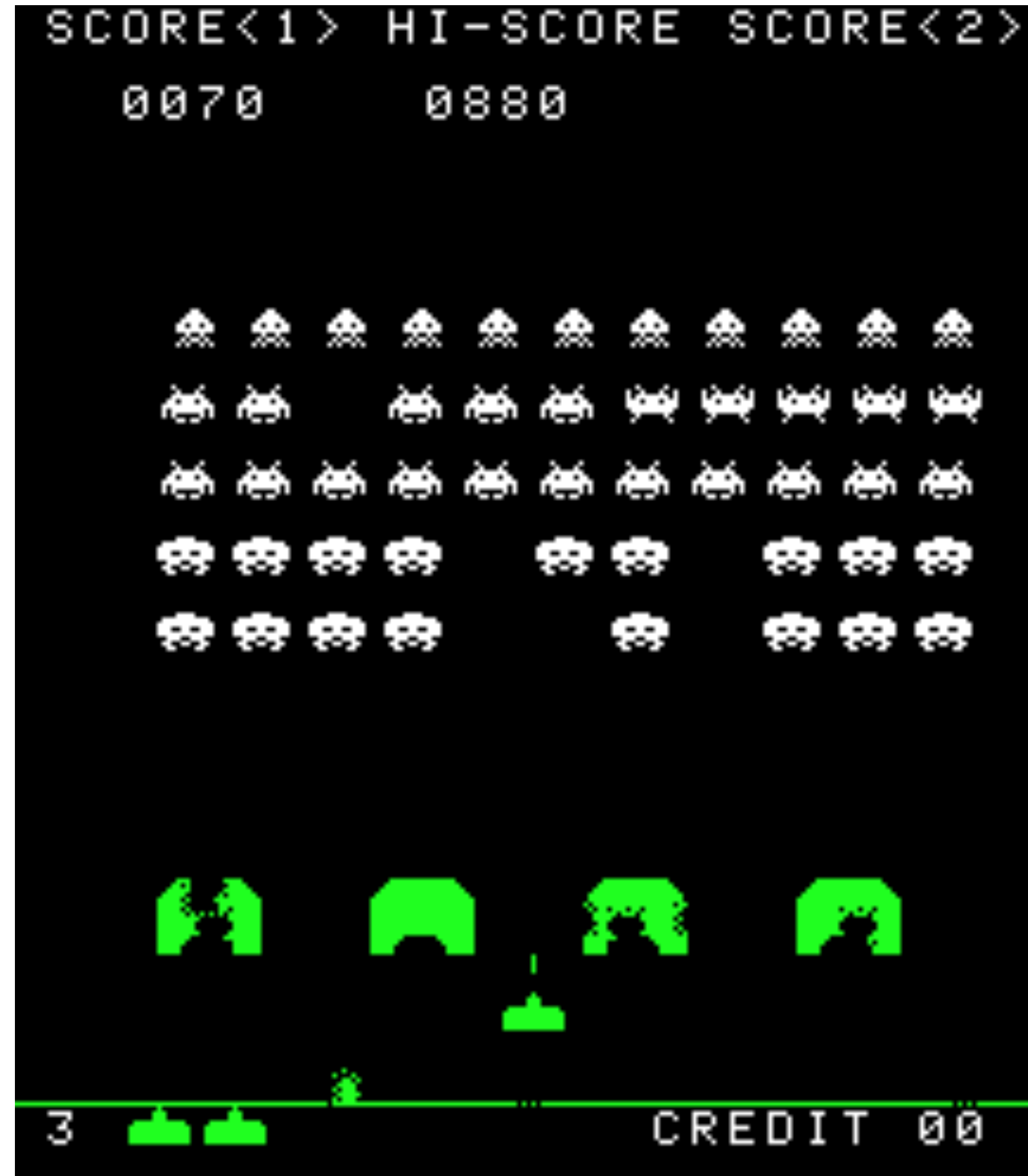
Wenn es ein Feature ist!

Fehler?

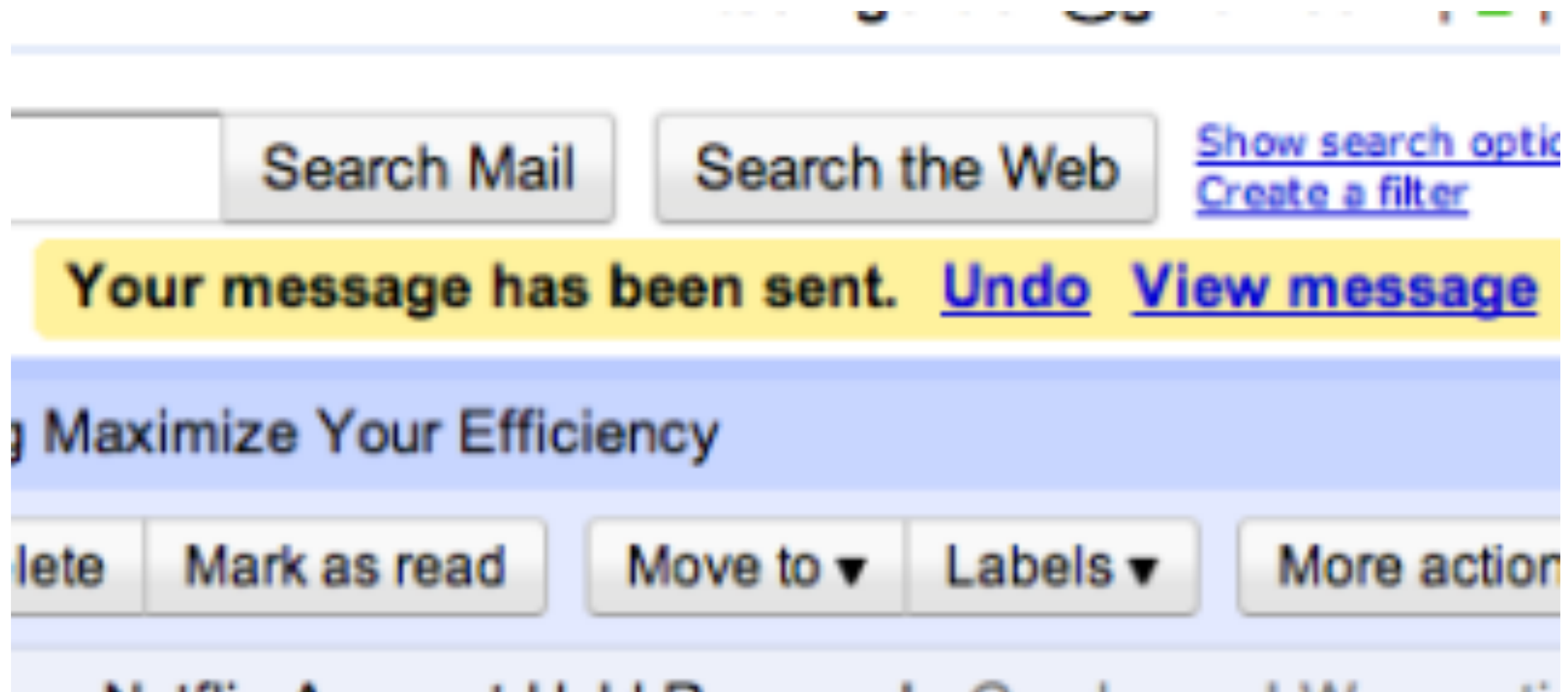
```
·  
·  
text.c  
other.files
```

```
1. if (name[0] == '.') continue;
```

Fehler?



Fehler?



Was ist ein Fehler?



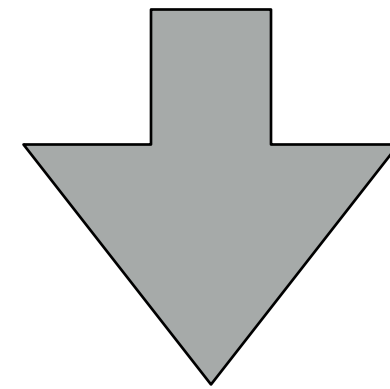
**Without specification, there are no bugs
— only surprises.**

Brian Kernighan

Probleme heutiger UI-Testautomatisierung:

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- Tests unvollständig

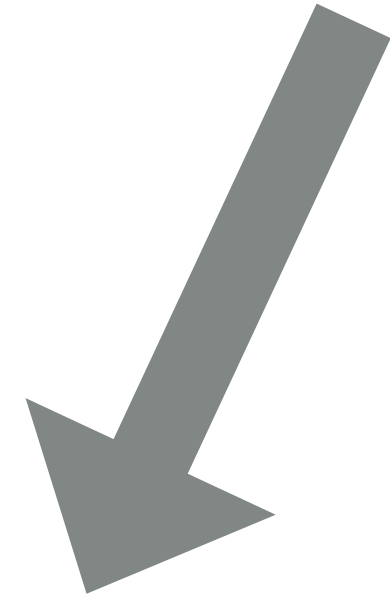
Spezifizieren



Testen

**Wenn man nur einen Hammer hat
sieht alles aus wie ein Nagel...**

Wozu testen wir?



Nach
Implementierung?

$$1 + 1 = 3 \quad \times$$

$$2 + 2 = 4 \quad \checkmark$$

The collage features several overlapping windows from different software applications:

- Accounting/ERP:** Windows showing financial data, invoices, and customer information. One window displays a list of items with prices in EUR, such as 199.00 EUR, 19.00 EUR, and 224.50 EUR.
- HR/Personnel:** A window titled 'Teilnahme: 201086 Mustermeier Daniel; 3: Definitiv' showing a list of participants with columns for Name, Vorname, Anrede, and Geb.-Datum.
- TableSelectionDemo:** A window displaying a table with columns: First Name, Last Name, Sport, # of Years, and Vegetarian. The table contains data for Kathy Smith, John Doe, Sue Black, and Jane White.
- Project Management:** A window showing a Gantt chart or project schedule with columns for 'Anfang' (Start) and 'Ende' (End) dates.
- Customer Data:** A window showing details for a customer named 'Fitz' with address 'Rückertstr. 5' and phone number '089-54 45 60 45'.
- Product/Service Details:** A window showing technical specifications for a material, including 'Querkontraktionszahl' (0.3), 'Längenausdehnungskoeffizient' (1.15E-5), and 'Zulässige Füge-temperatur Tzul' (600 °C).
- Other Windows:** Various smaller windows showing forms, lists, and data entry screens, including one with a watch image and another with a building photo.

TableSelectionDemo

First Name	Last Name	Sport	# of Years	Vegetarian
Kathy	Smith	Snowboarding	5	<input type="checkbox"/>
John	Doe	Rowing	3	<input checked="" type="checkbox"/>
Sue	Black	Knitting	2	<input type="checkbox"/>
Jane	White	Speed reading	20	<input checked="" type="checkbox"/>

Selection Mode

- Multiple Interval Selection
- Single Selection
- Single Interval Selection

Selection Options

- Row Selection
- Column Selection
- Cell Selection

TableSelectionDemo

First Name	Last Name	Sport	# of Years	Vegetarian
Kathy	Smith	Snowboarding	5	<input type="checkbox"/>
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Sue	Black	Knitting	2	<input type="checkbox"/>
Jane	White	Speed reading	20	<input checked="" type="checkbox"/>
...

Selection Mode

Multiple Interval Selection

Single Selection

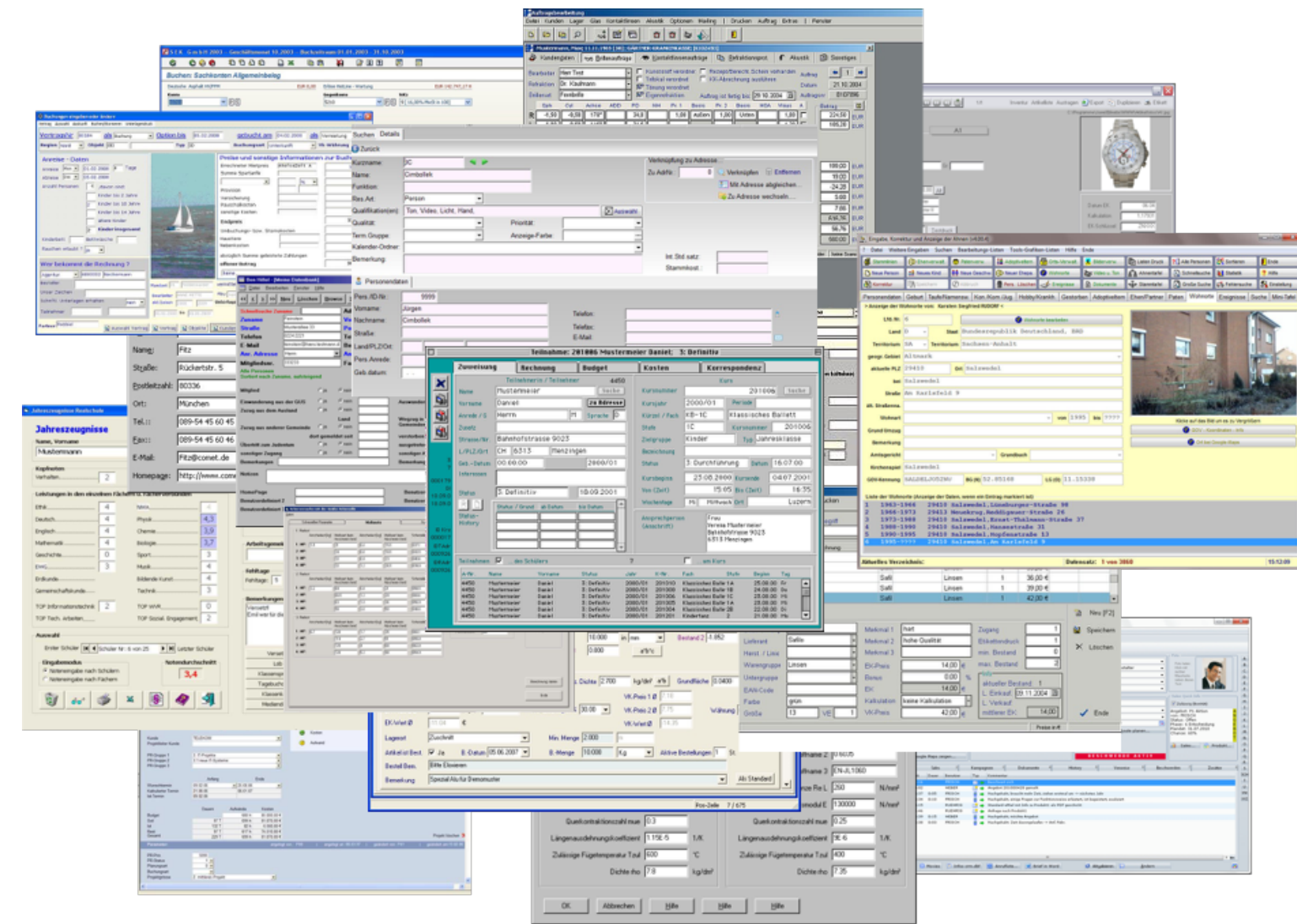
Single Interval Selection

Selection Options

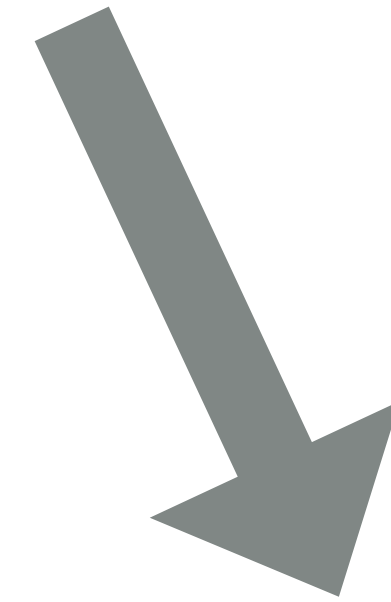
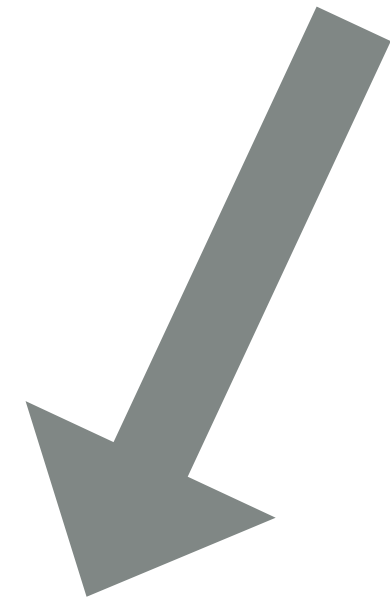
Row Selection

Column Selection

Cell Selection







Wozu testen wir?



Nach
Implementierung?

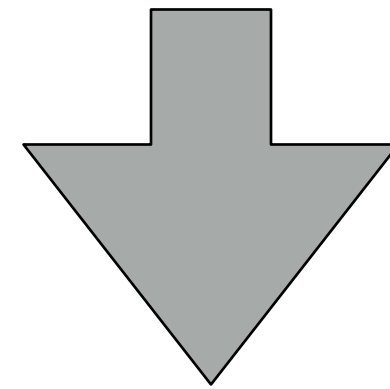
Nach
Änderung?

$1 + 1 = 3$ 
 $2 + 2 = 4$ 

$1 + 1 = 3$ 
 $1 + 1 = 5$ 

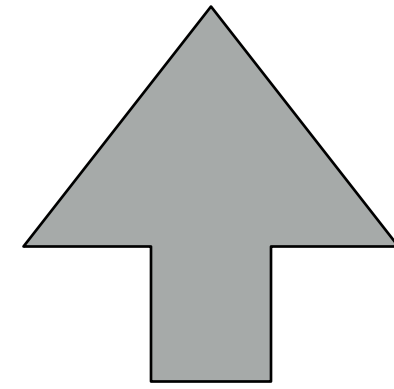


Spezifizieren



Testen

Spezifizieren



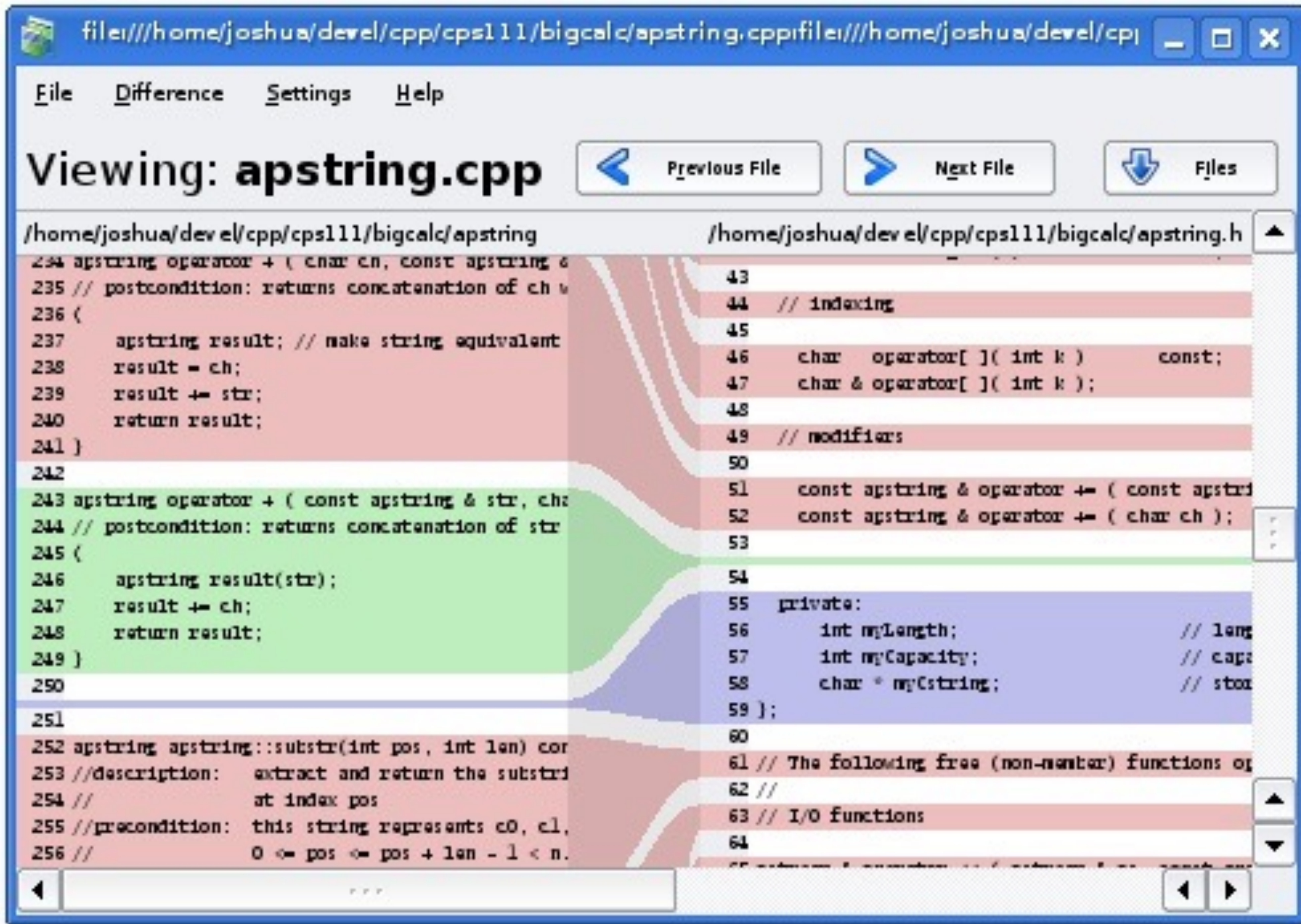
Testen

Regressionstest
≠
Test

Regressionstest
=
Versionskontrolle

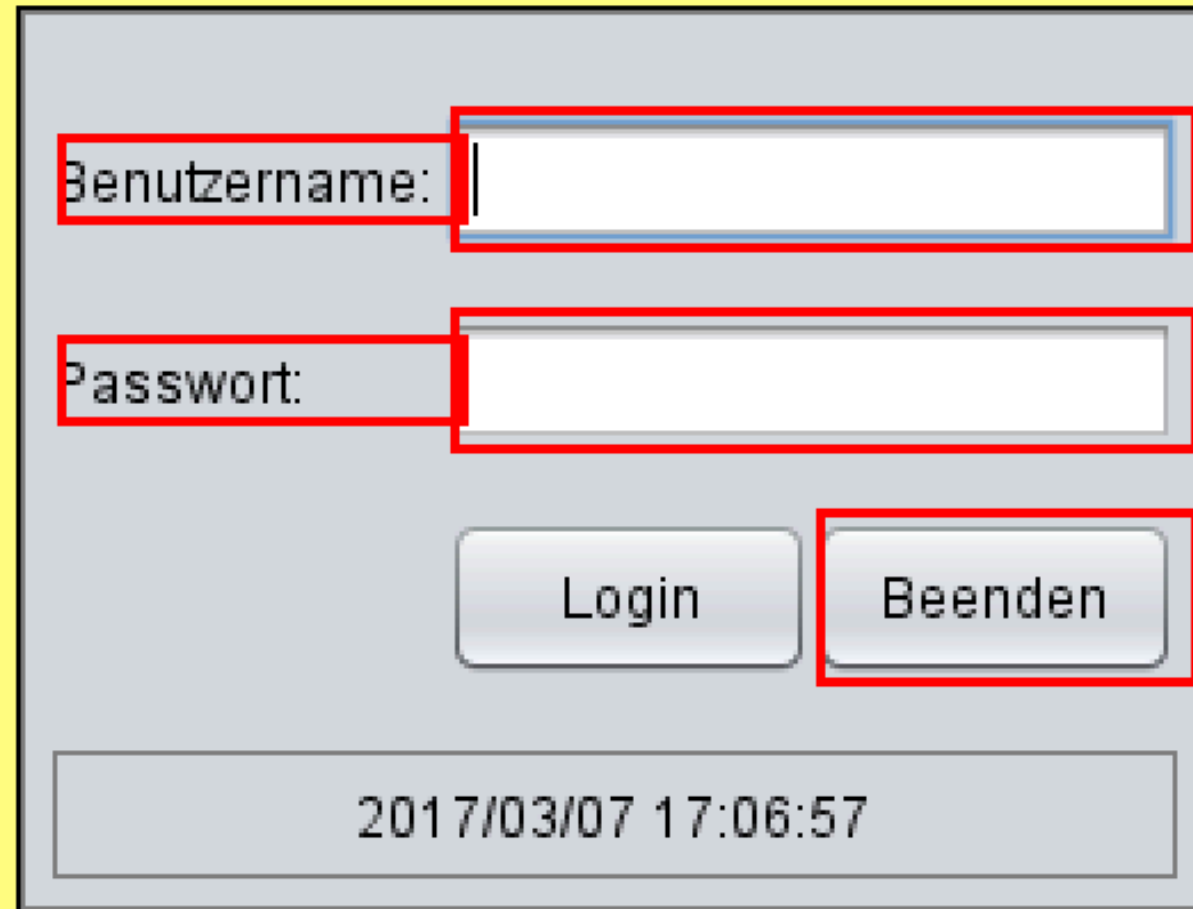
Wo hat sich der
Code *geändert*?

Wo hat sich das
Programm *geändert?*



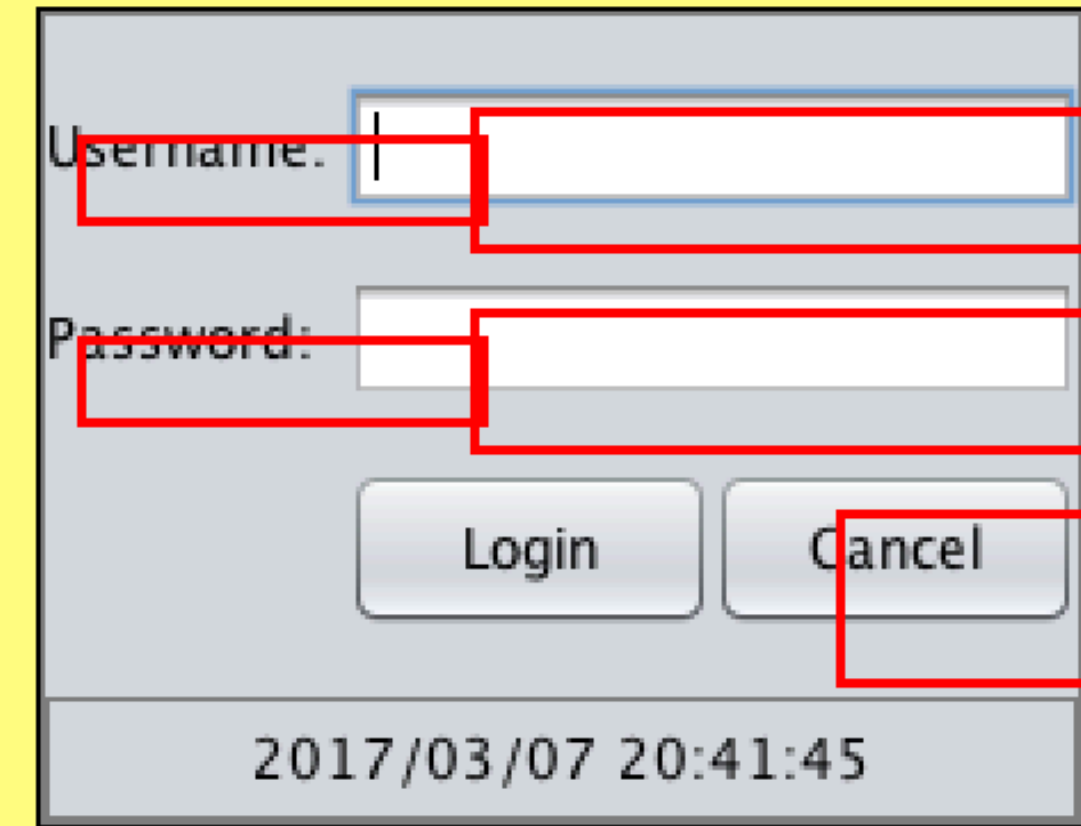
Start Sut

Expected



1/1

Actual



1/1

UI element	Attribute	Expected value	Actual value	<input type="checkbox"/> Accept all
JButton [Beenden]	text	Beenden	Cancel	<input type="checkbox"/>
JLabel [Benutzername:]	text	Benutzername:	Username:	<input type="checkbox"/>
JLabel [Benutzername:]	tooltip	Probieren Sie es mit "...	Try 'Max' or 'Martina'.	<input type="checkbox"/>
JLabel [Passwort:]	text	Passwort:	Password:	<input type="checkbox"/>
JLabel [Passwort:]	tooltip	Das Passwort lautet "...	The password is 'ReT...	<input type="checkbox"/>
JPasswordField Passw...	tooltip	Das Passwort lautet "...	The password is 'ReT...	<input type="checkbox"/>
JTextField Benutzerna	tooltip	Probieren Sie es mit "...	Try 'Max' or 'Martina'.	<input type="checkbox"/>

static

vs.

dynamic

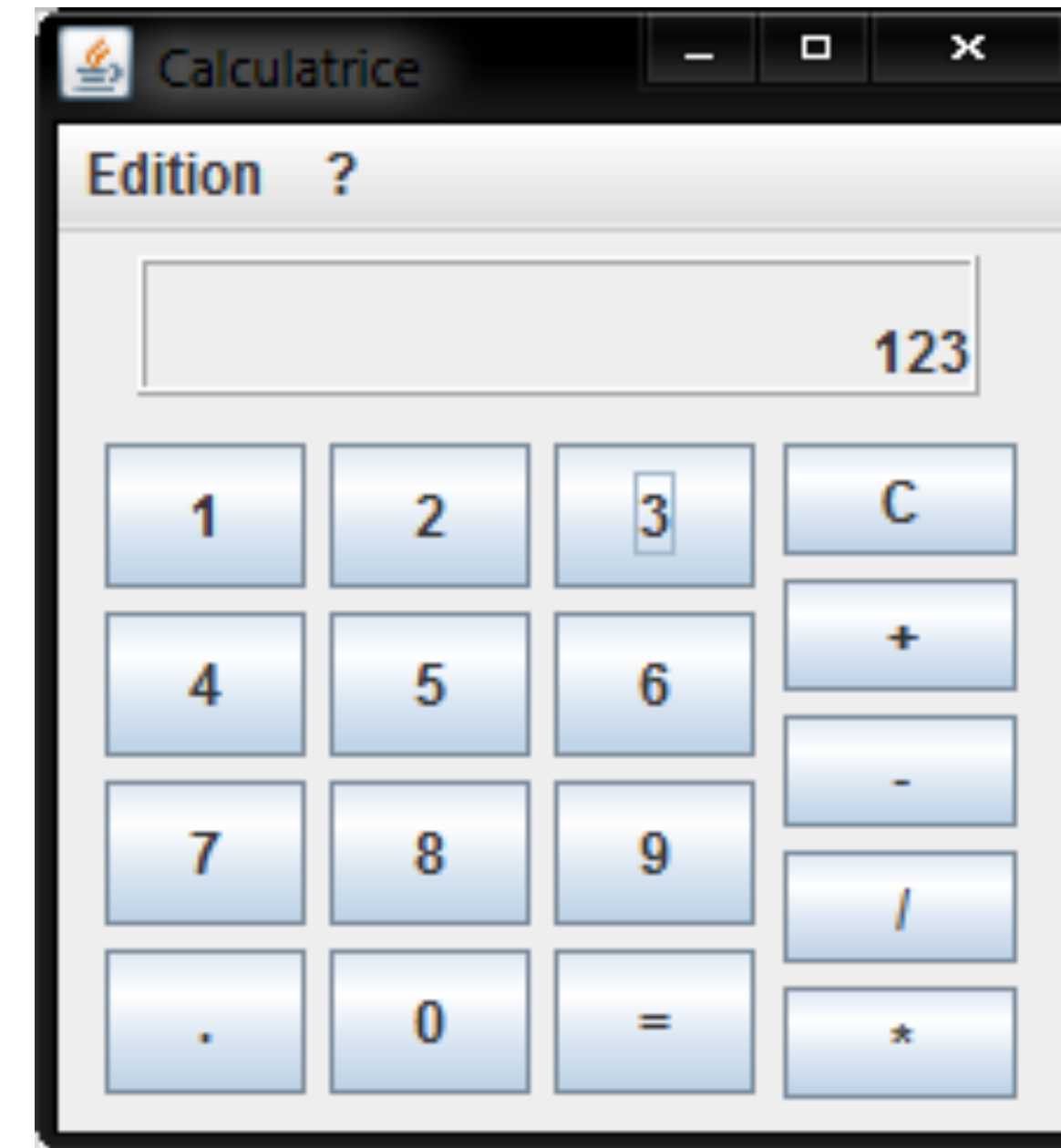
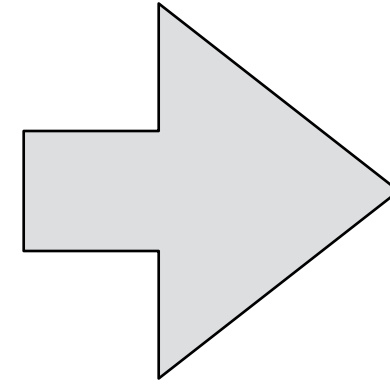

```
int getRandomNumber()  
{  
    return 4; // chosen by fair dice roll.  
              // guaranteed to be random.  
}
```

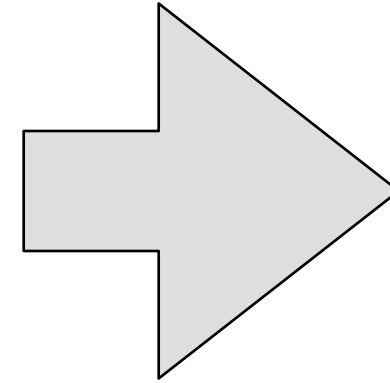
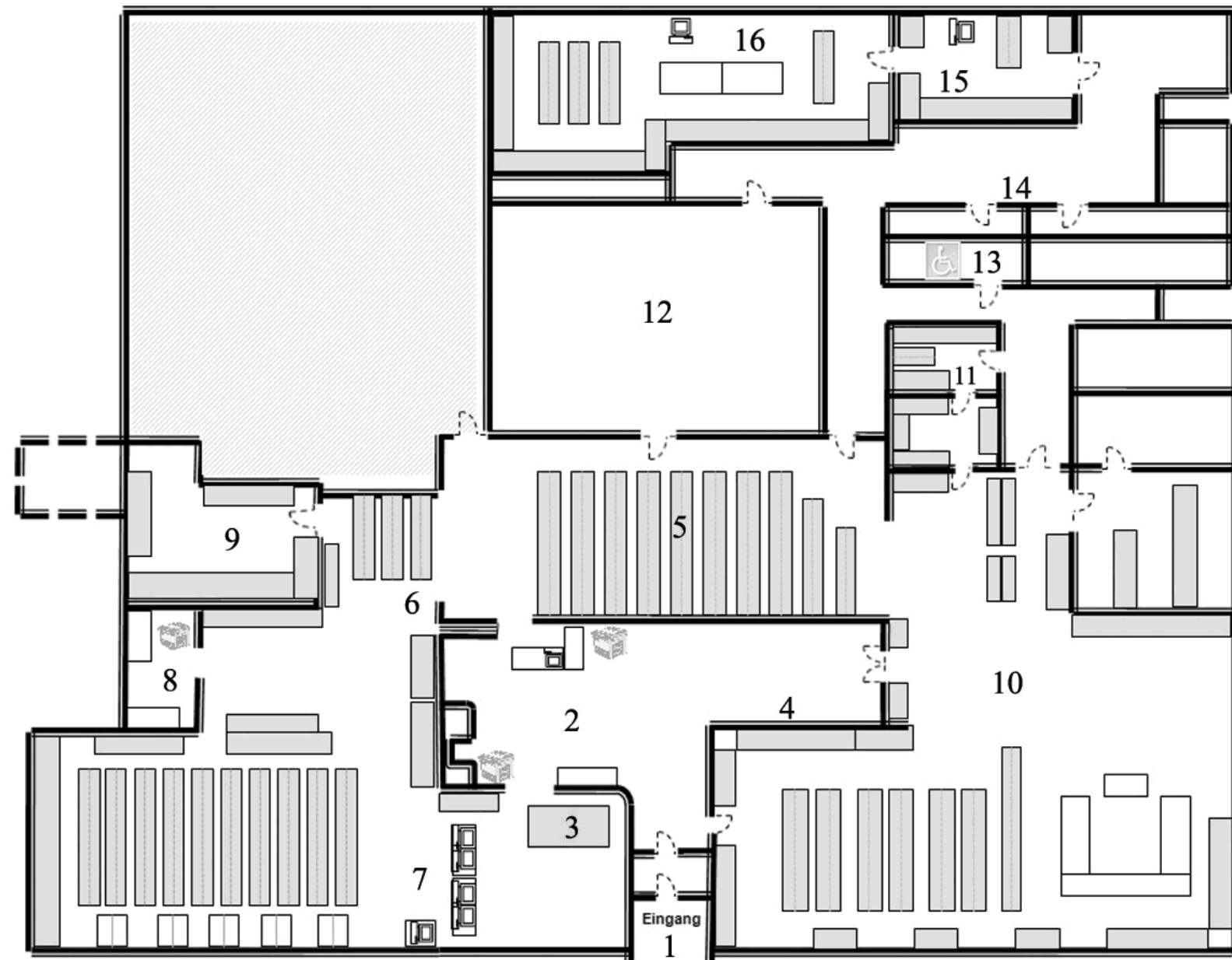

“ Beware of *bugs* in the above code;
I have only *proved* it correct,
not *tried* it.

Donald Knuth



```
function date_mysql2ger($t) {  
    list($year, $month, $day) = explode("-",  
    return sprintf("%02d.%02d.%04d", $day,  
    }  
function date_ger2mysql($datex) {  
    list($day, $month, $year) = explode(""  
    return sprintf("%04d-%02d-%02d", $ye  
    }  
function timestamp_mysql2ger($t) {  
    return sprintf("%02d.%02d.%04d",  
        substr($t, 6, 2),  
        substr($t, 4, 2),  
        substr($t, 0, 4)  
    }  
function date_mysql2ger($datex) {  
    list($year, $month, $day) = ex  
    return sprintf("%02d.%02d.%04d", $day,  
    }
```





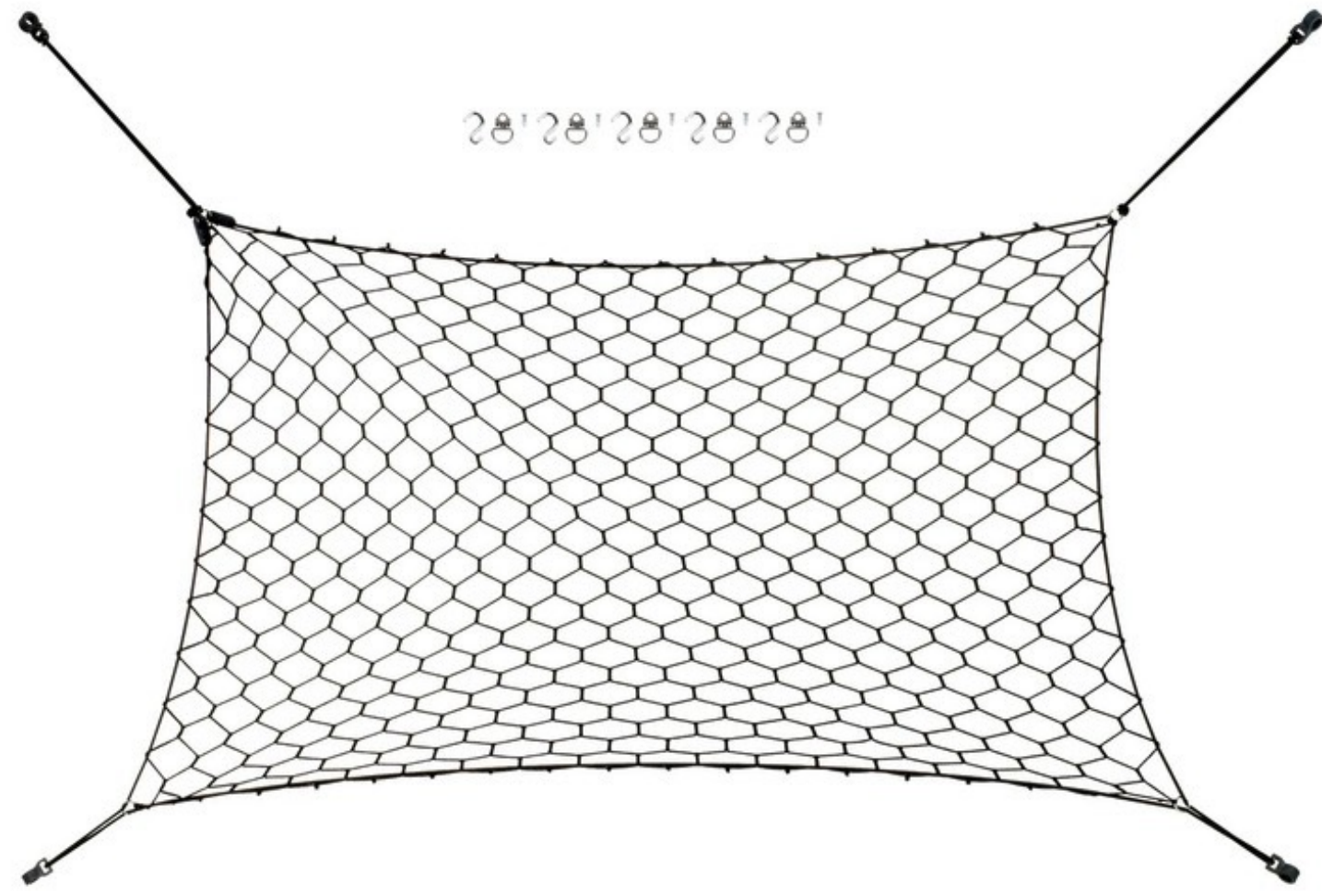






Wo hat sich der
Code *geändert*?

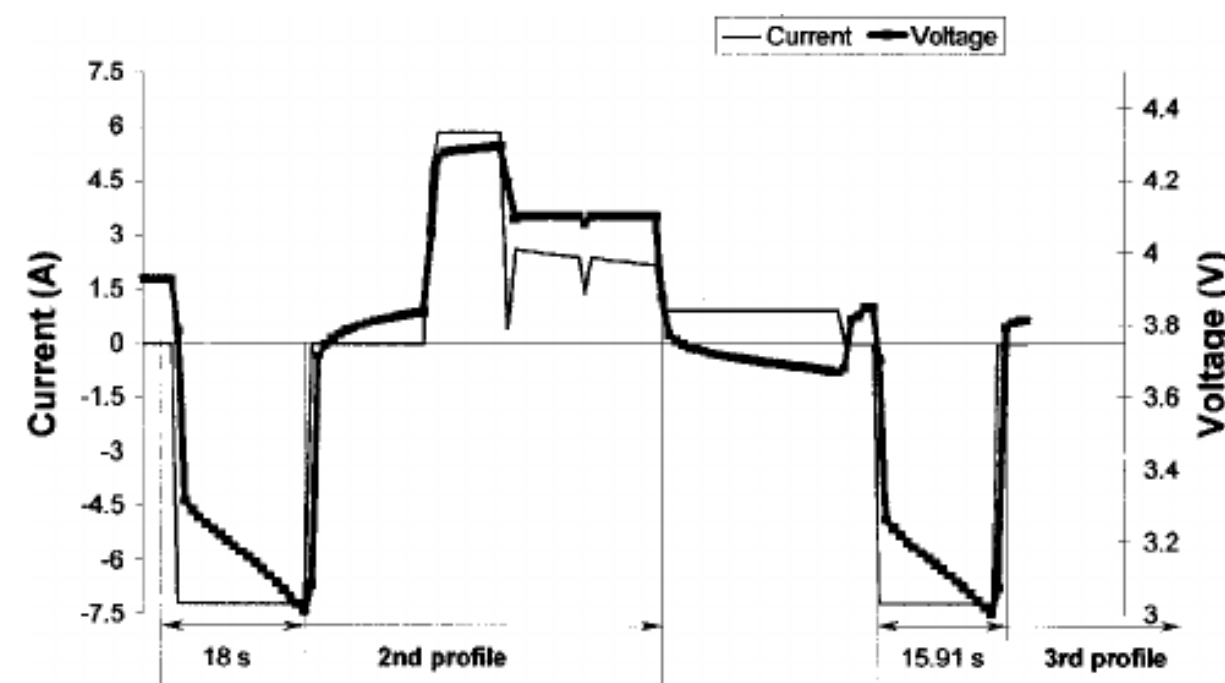
Die Lücke schließen: *automatische* Tests



Sicherheitsnetz



Golden Master



Characterization Test


```
[TestMethod]
public void TestPurchase()
{
    // Create a new receipt
    var r = new Receipt();
    // Add 1 candy bar at $.50
    r.AddItem(1, "Candy Bar", 0.50);
    // Add 2 sodas bar at $1
    r.AddItem(2, "Soda", 1.0);
    // verify the receipt
    Approvals.Verify(r.ToString());
}
```




Opine. Participe da rede.
Opine com seus amigos ou companhia
em restaurantes, bares ou lojas de peças.
Você pode ainda seguir as preferências
de outros usuários e votar nos melhores lugares
de São Paulo.



Comente. Interaja.
Comente nas nossas matérias, troque com
outros usuários e os profissionais da Abril.

Encontre amigos:
Conheça pessoas de todos os lugares
com as mais diversas opiniões.

automated-screenshot-diff

Staged files

 Unstaged files

-  retest-core-extensions/src/main/java/de/retest/TestContextImpl.java ...
-  ...src/main/java/de/retest/actions/ActionSequenceToActionStateSequenceConverter.java ...
-  ...st-core-extensions/src/main/java/de/retest/actions/ActionToActionStateConverter.java ...
-  retest-core-extensions/src/main/java/de/retest/actions/DebugAction.java ...
-  ...core-extensions/src/main/java/de/retest/actions/flow/ReplayActionSequenceFlow.java ...
-  retest-core-extensions/src/main/java/de/retest/execution/AbstractExecutor.java ...
-  retest-core-extensions/src/main/java/de/retest/execution/ChromosomeExecutor.java ...



 retest-core-extensions/src/main/java/de/retest/TestContextImpl.java ...

Hunk 1 : Lines 27-33

```

27 27 import de.retest.ui.Environment;
28 28 import de.retest.ui.IgnoredTypes;
29 29 import de.retest.ui.TargetNotFoundHandler;
30 30 - import de.retest.ui.actions.Action;
30 30 + import de.retest.ui.actions.UserAction;
31 31 import de.retest.ui.descriptors.ComponentDescriptor;
32 32 import de.retest.ui.descriptors.GroundState;
33 33 import de.retest.ui.descriptors.UniqueCompIdentCriteria;

```

Hunk 2 : Lines 145-156

```

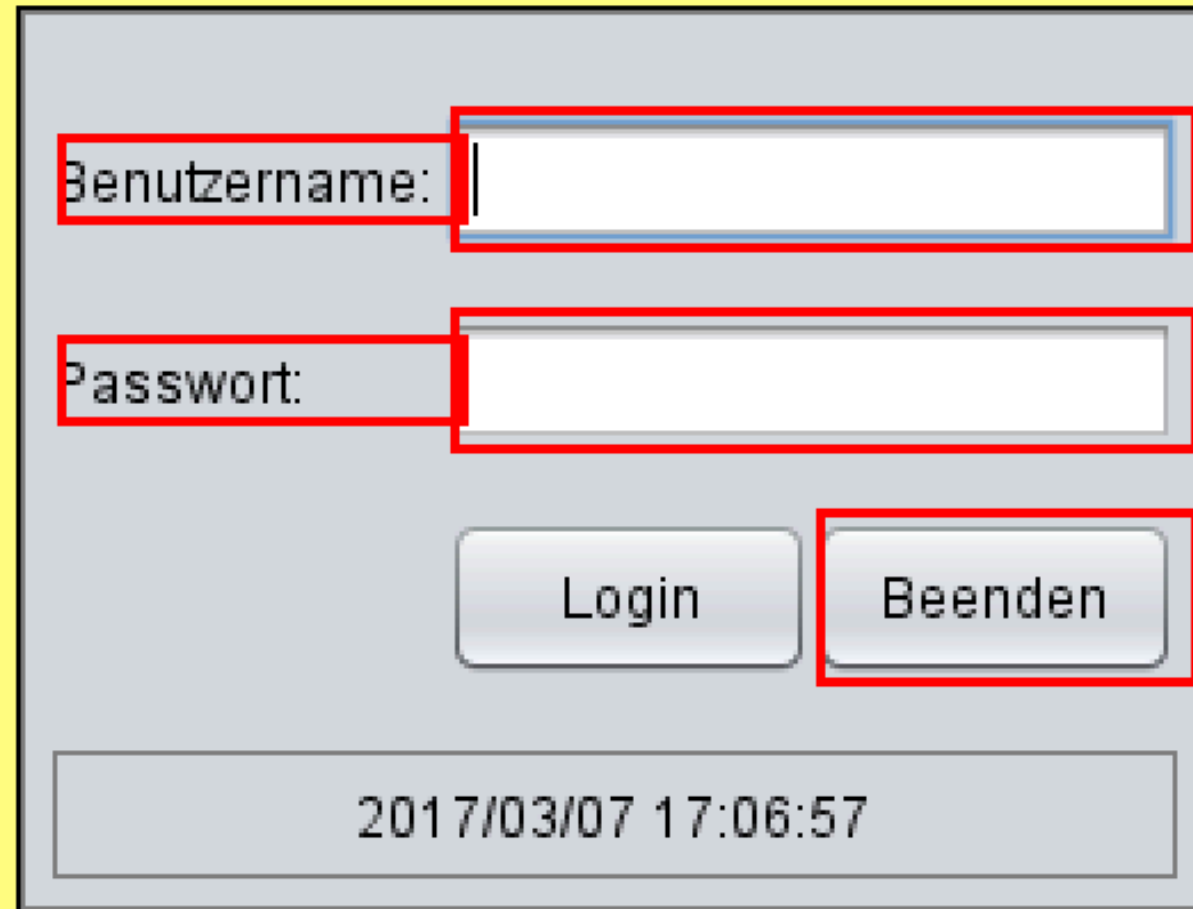
145 145 public TargetNotFoundHandler getTargetNotFoundHandler() {
146 146     return new TargetNotFoundHandler() {
147 147         @Override
148 148 - public boolean handle( final Action action ) {
148 148 + public boolean handle( final UserAction action ) {
149 149         return false;
150 150     }
151 151
152 152     @Override
153 153 - public boolean canIgnore( final Action action ) {

```


commit

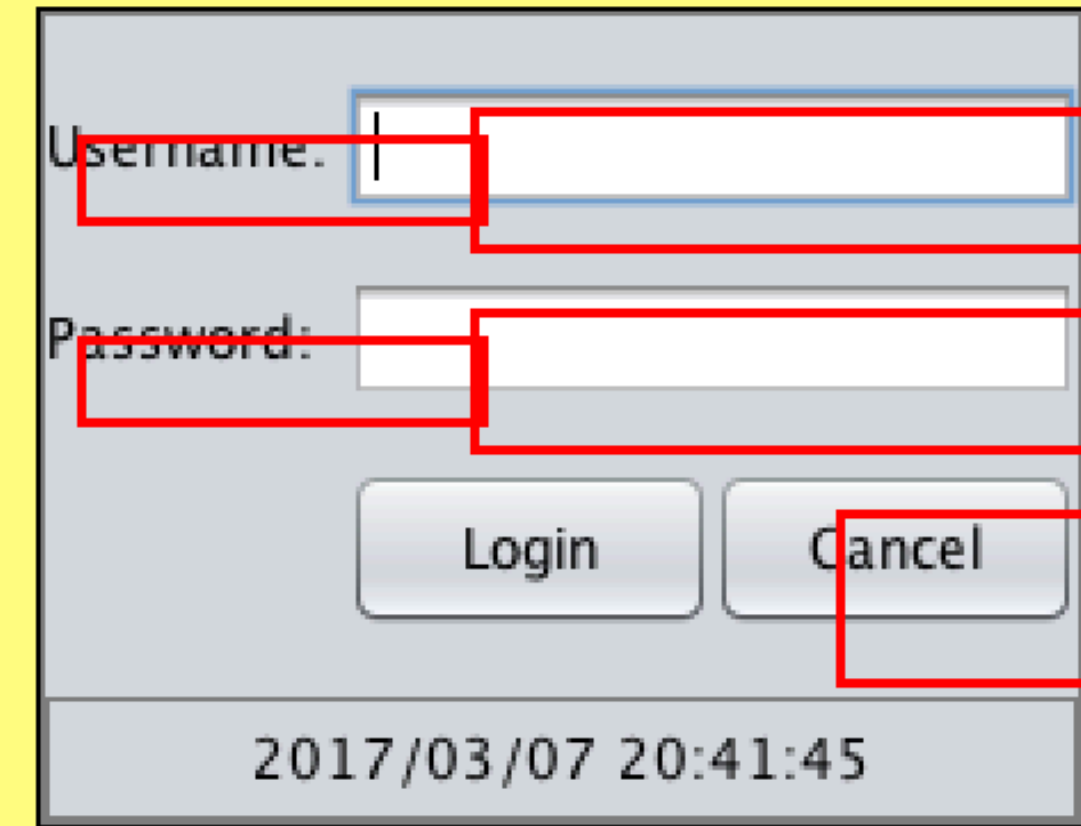
Start Sut

Expected



1/1

Actual

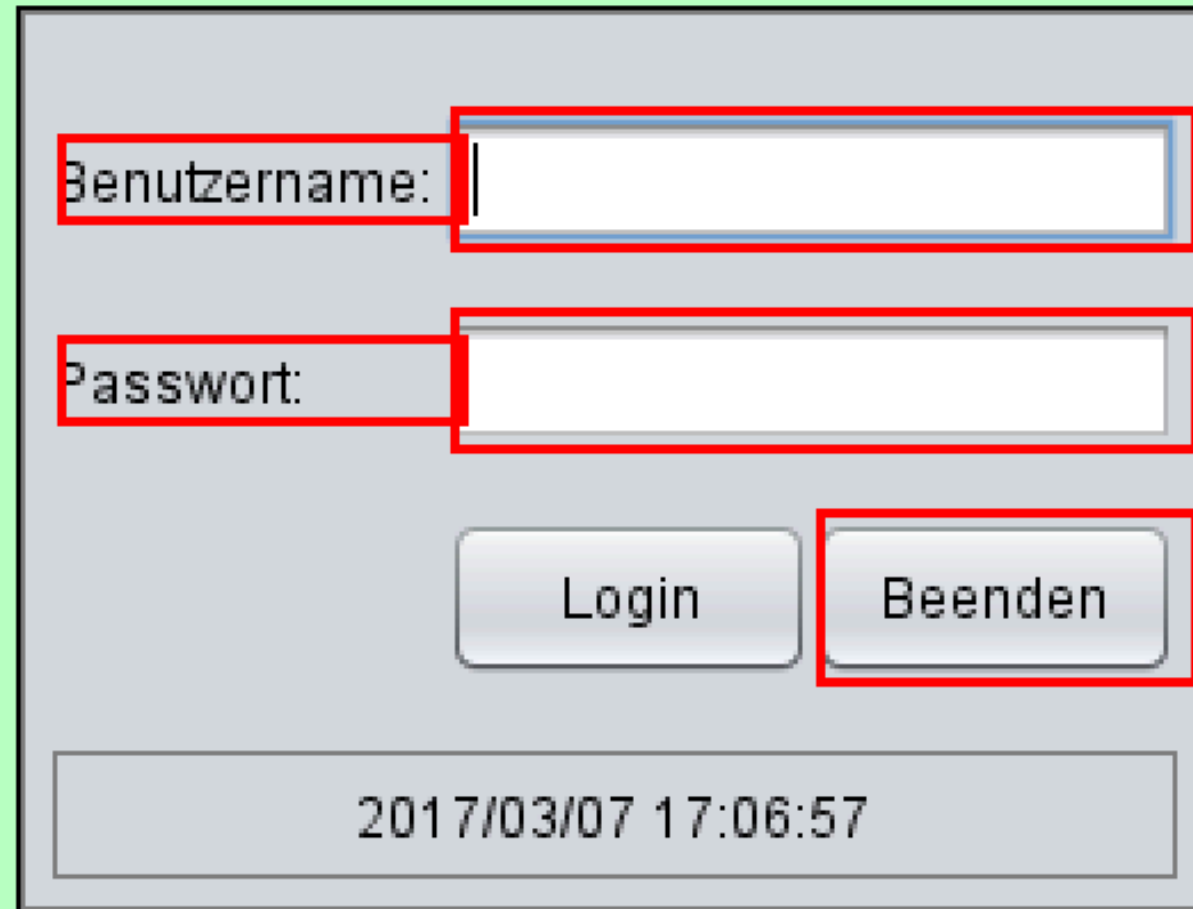


1/1

UI element	Attribute	Expected value	Actual value	<input type="checkbox"/> Accept all
JButton [Beenden]	text	Beenden	Cancel	<input type="checkbox"/>
JLabel [Benutzername:]	text	Benutzername:	Username:	<input type="checkbox"/>
JLabel [Benutzername:]	tooltip	Probieren Sie es mit "...	Try 'Max' or 'Martina'.	<input type="checkbox"/>
JLabel [Passwort:]	text	Passwort:	Password:	<input type="checkbox"/>
JLabel [Passwort:]	tooltip	Das Passwort lautet "...	The password is 'ReT...	<input type="checkbox"/>
JPasswordField Passw...	tooltip	Das Passwort lautet "...	The password is 'ReT...	<input type="checkbox"/>
JTextField Benutzerna	tooltip	Probieren Sie es mit "...	Try 'Max' or 'Martina'.	<input type="checkbox"/>

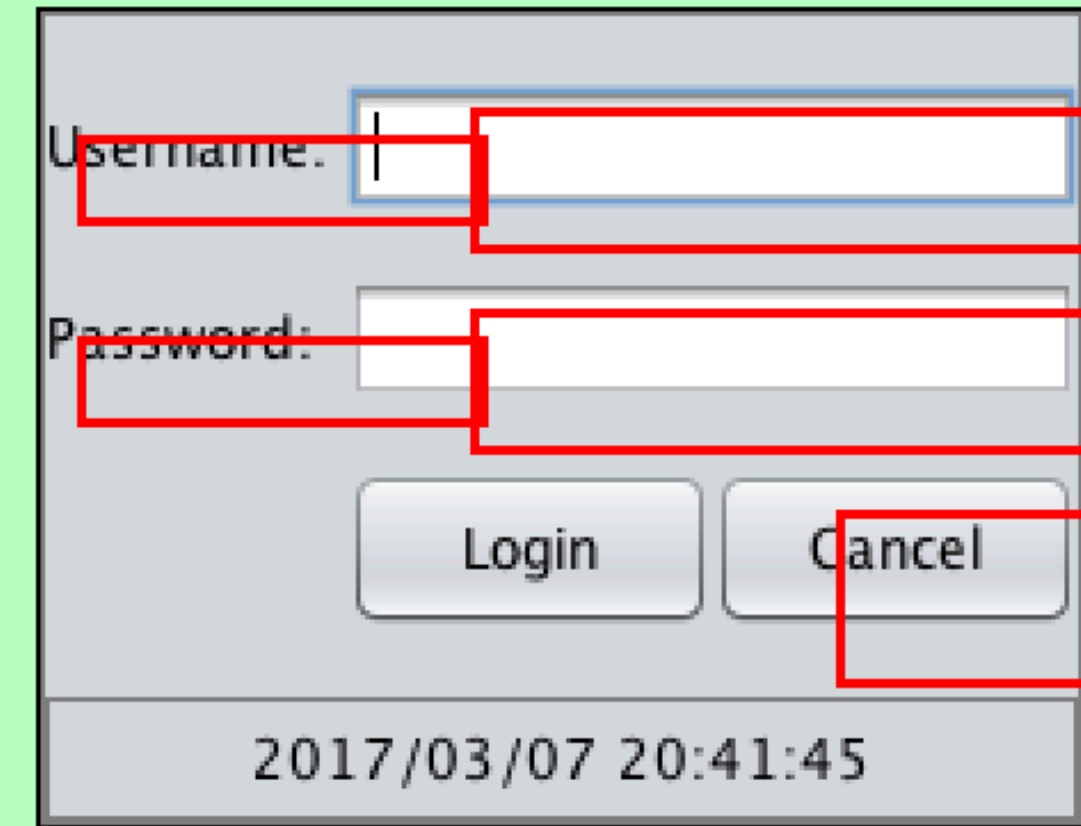
Start Sut

Expected



1/1

Actual



1/1

UI element	Attribute	Expected value	Actual value	<input checked="" type="checkbox"/> Accept all
JButton [Beenden]	text	Beenden	Cancel	<input checked="" type="checkbox"/>
JLabel [Benutzername:]	text	Benutzername:	Username:	<input checked="" type="checkbox"/>
JLabel [Benutzername:]	tooltip	Probieren Sie es mit "...	Try 'Max' or 'Martina'.	<input checked="" type="checkbox"/>
JLabel [Passwort:]	text	Passwort:	Password:	<input checked="" type="checkbox"/>
JLabel [Passwort:]	tooltip	Das Passwort lautet "...	The password is 'ReT...	<input checked="" type="checkbox"/>
JPasswordField Passw...	tooltip	Das Passwort lautet "...	The password is 'ReT...	<input checked="" type="checkbox"/>
JTextField Benutzerna	tooltip	Probieren Sie es mit "...	Try 'Max' or 'Martina'.	<input checked="" type="checkbox"/>

DIFFERENCE-TESTING

Golden Master

+ commit

+ ignore

= Difference Testing



Untitled (untitled suite) - Selenium IDE 2.9.0 *

Base URL

Fast Slow

Test Case
Untitled *

Command	Target	Value
open	/	
clickAndWait	link=Häufige Fragen	

Command: clickAndWait

Target: link=Häufige Fragen

Value:

link=Häufige Fragen	link
//a[contains(text(),'Häufige Fragen')]	xpath:link
//ul[@id='nav']/li[2]/ul/li[2]/a	xpath:idRelative
//a[@href='http://www.retest.de/fa...]	xpath:href
//li[2]/a	xpath:position

Runs: 0
Failures: 0

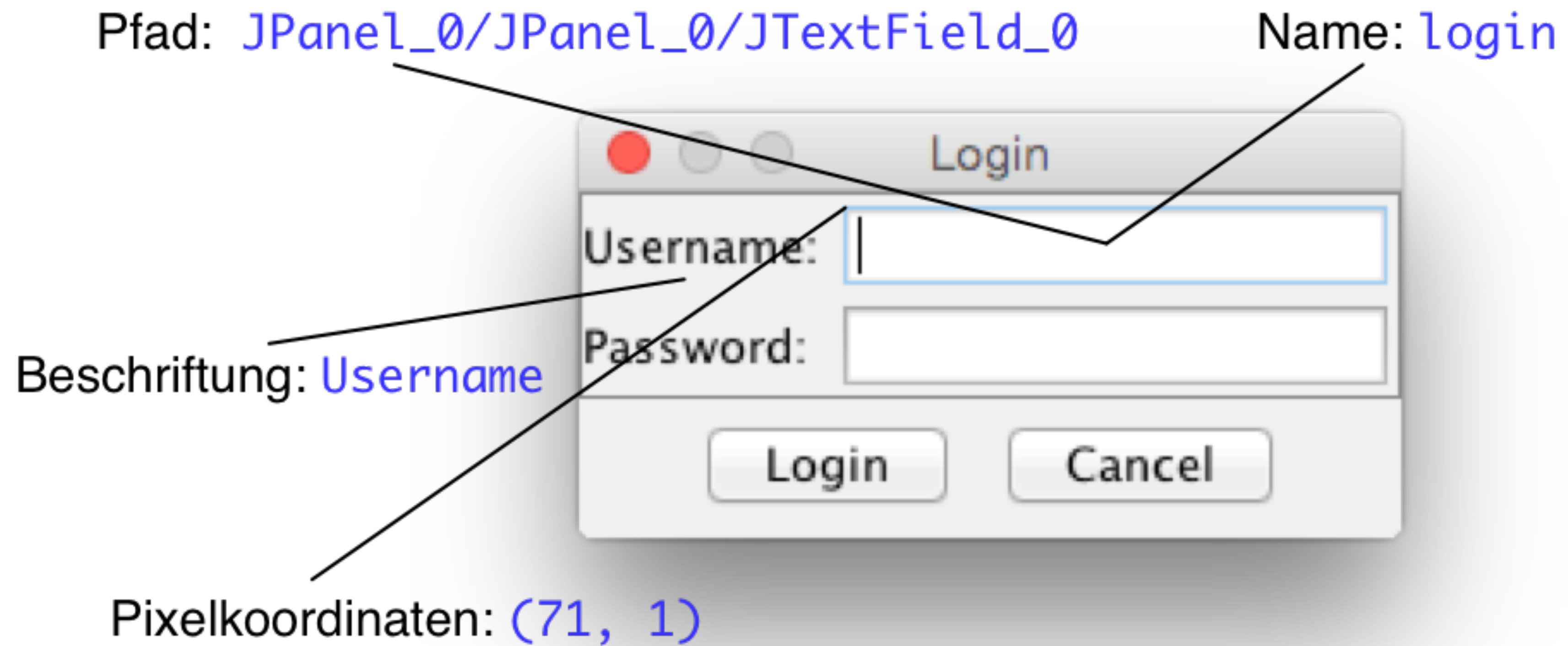
Log Reference UI-Element Rollup

clickAndWait(locator)
Generated from **click(locator)**

Arguments:

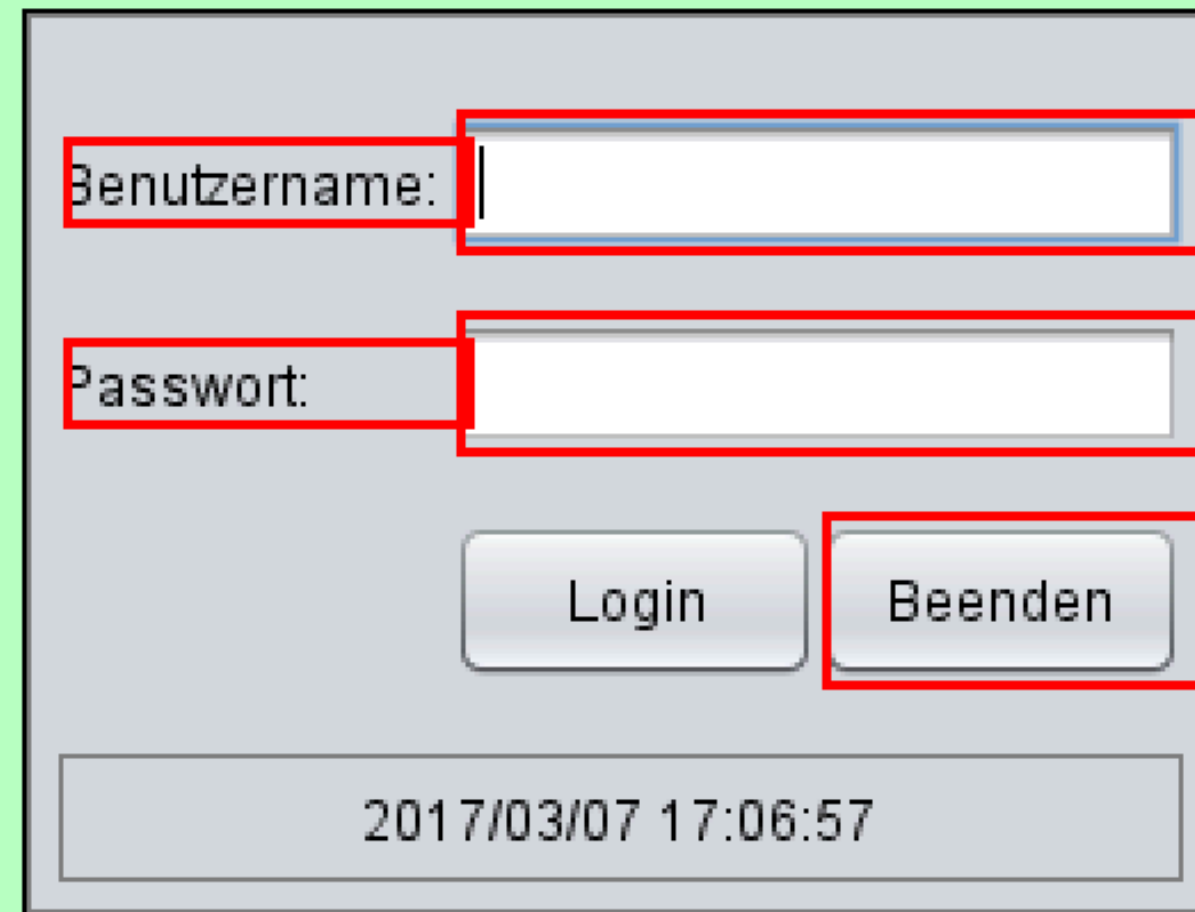
- locator - an element locator

Clicks on a link, button, checkbox or radio button. If the click action causes a new page to load (like a link usually does), call waitForPageToLoad.



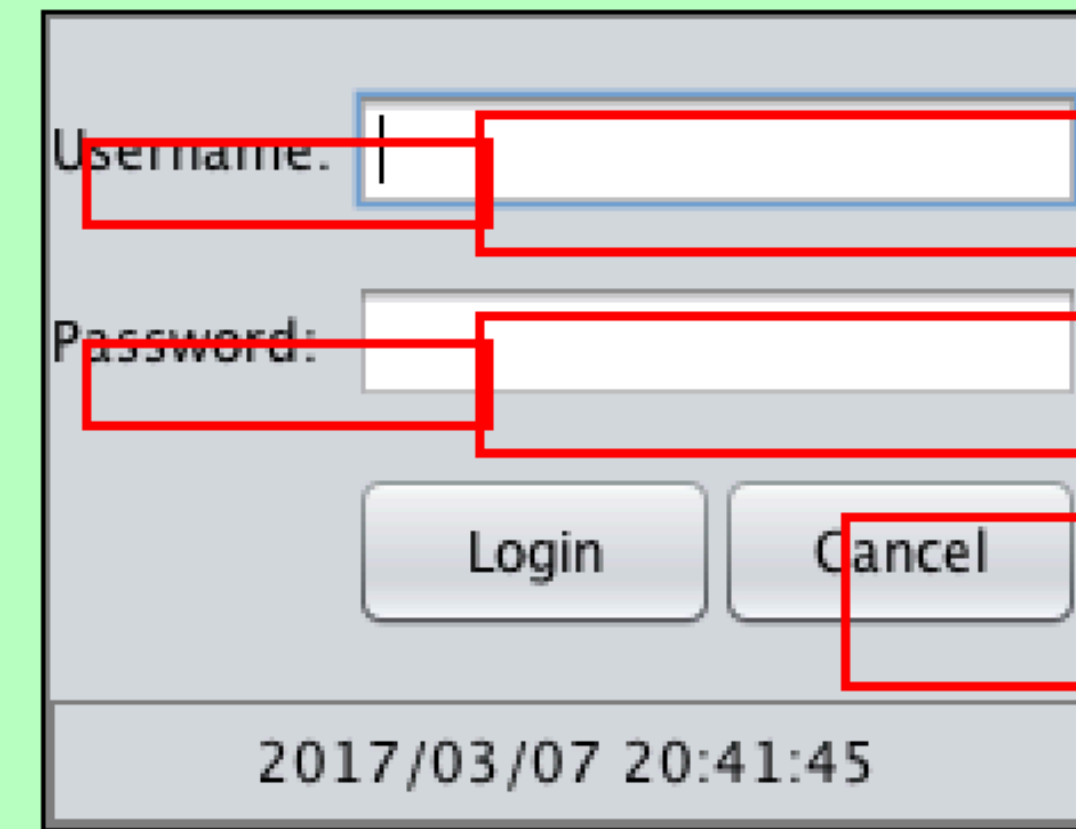
Start Sut

Expected



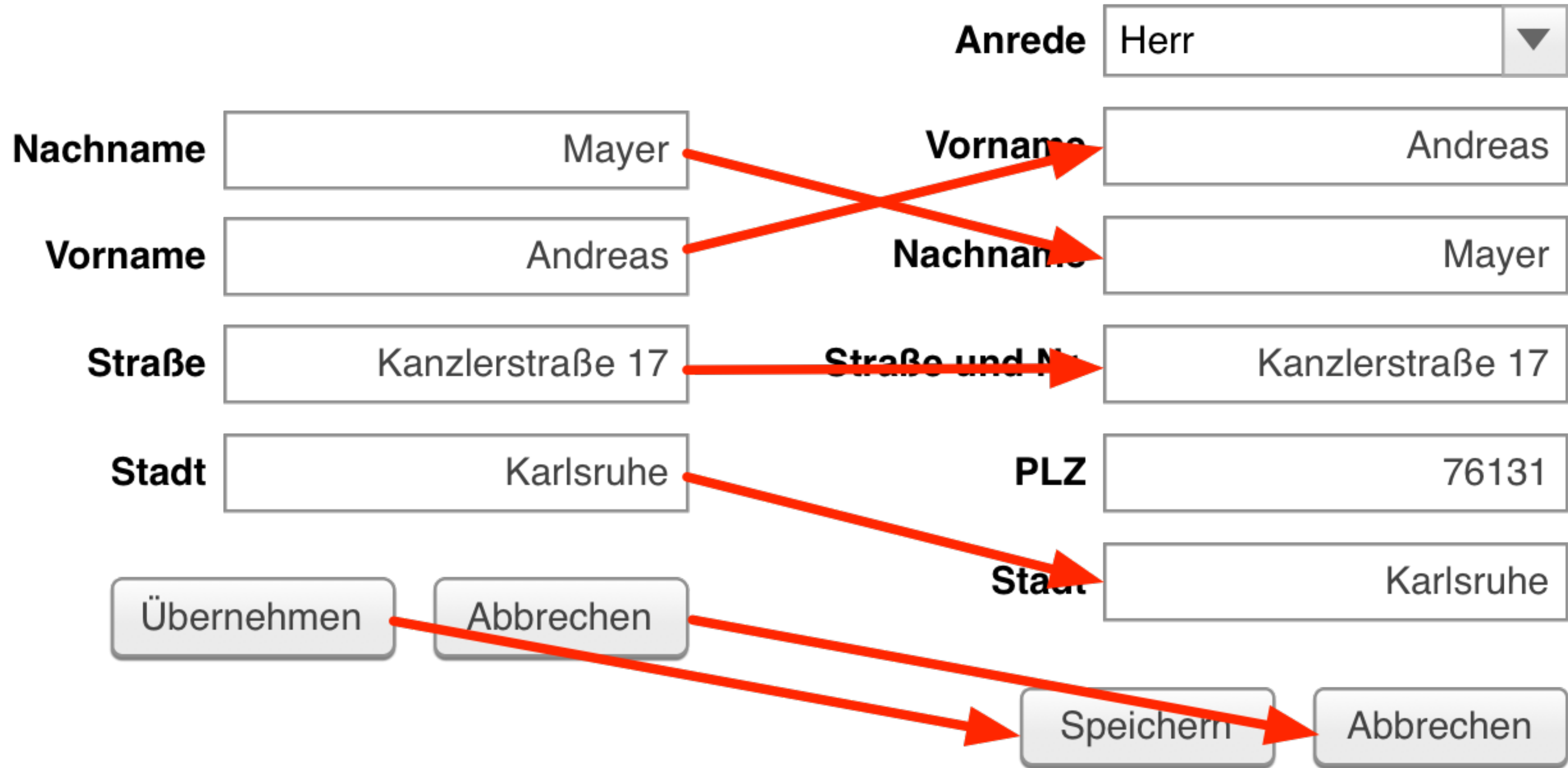
1/1

Actual



1/1

UI element	Attribute	Expected value	Actual value	<input checked="" type="checkbox"/> Accept all
JButton [Beenden]	text	Beenden	Cancel	<input checked="" type="checkbox"/>
JLabel [Benutzername:]	text	Benutzername:	Username:	<input checked="" type="checkbox"/>
JLabel [Benutzername:]	tooltip	Probieren Sie es mit "...	Try 'Max' or 'Martina'.	<input checked="" type="checkbox"/>
JLabel [Passwort:]	text	Passwort:	Password:	<input checked="" type="checkbox"/>
JLabel [Passwort:]	tooltip	Das Passwort lautet "...	The password is 'ReT...	<input checked="" type="checkbox"/>
JPasswordField Passw...	tooltip	Das Passwort lautet "...	The password is 'ReT...	<input checked="" type="checkbox"/>
JTextField Benutzerna	tooltip	Probieren Sie es mit "...	Try 'Max' or 'Martina'.	<input checked="" type="checkbox"/>



Software-Änderung als Grundparadigma

Einfache Erstellung

Einfache Pflege

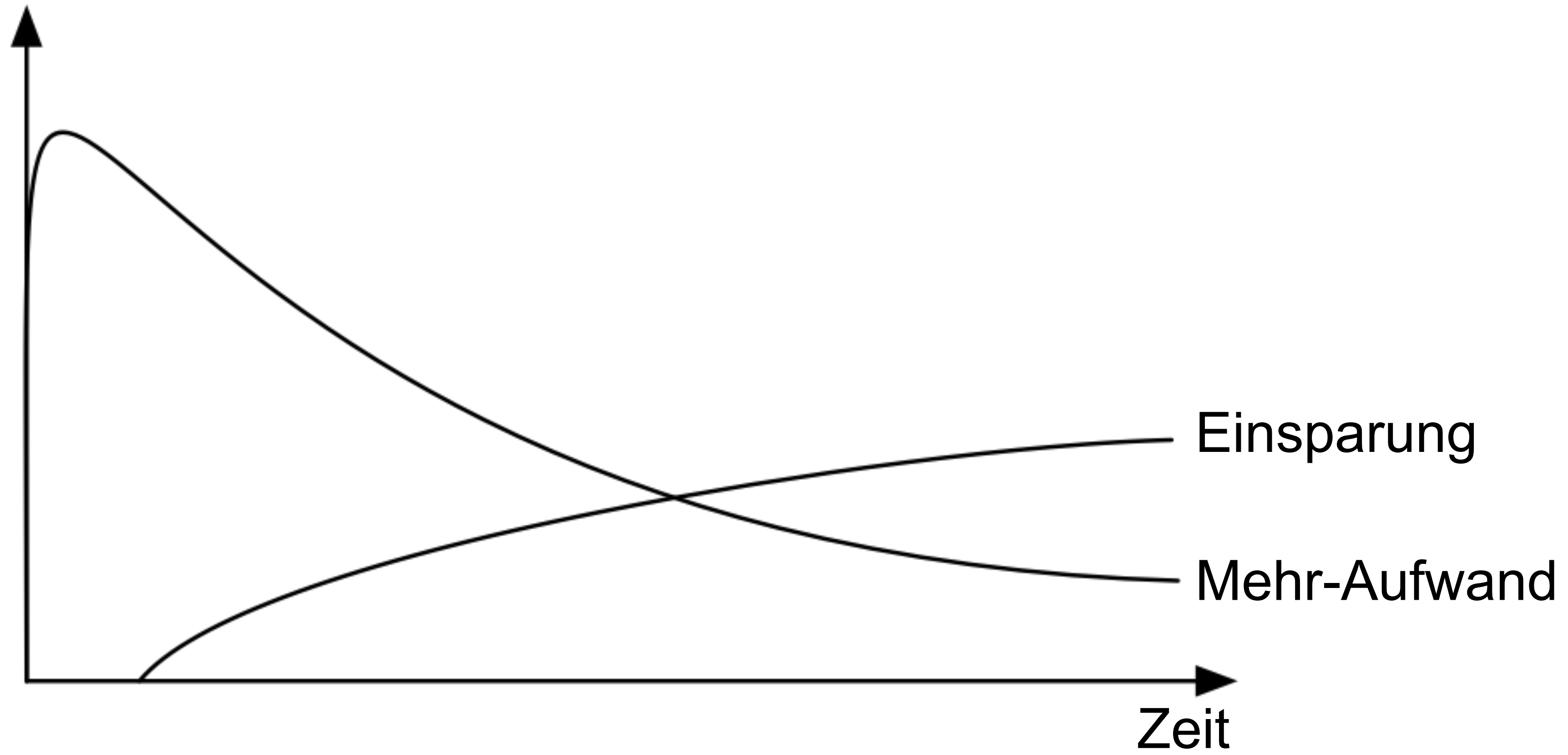
Golden Master

+ commit

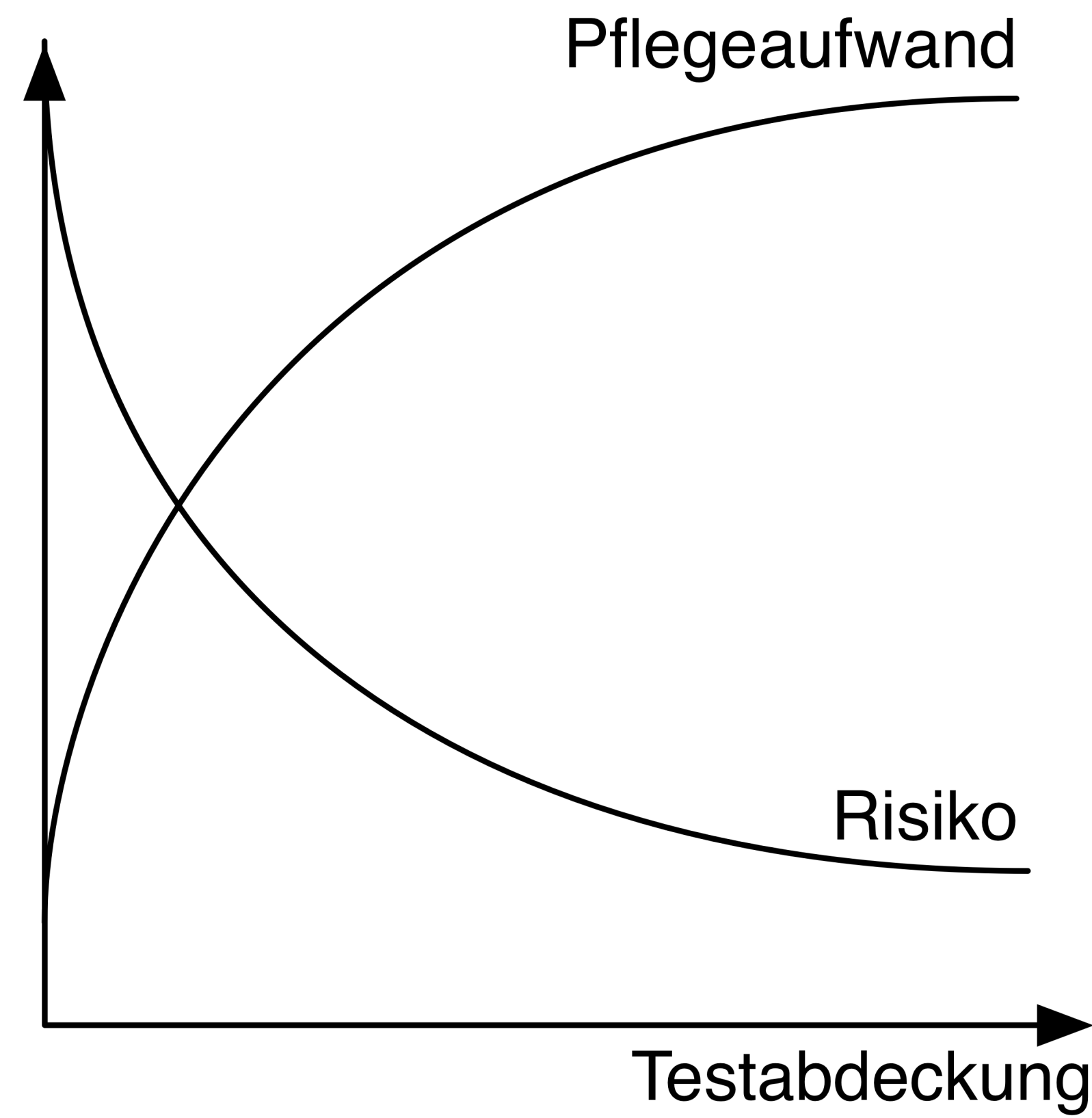
+ ignore

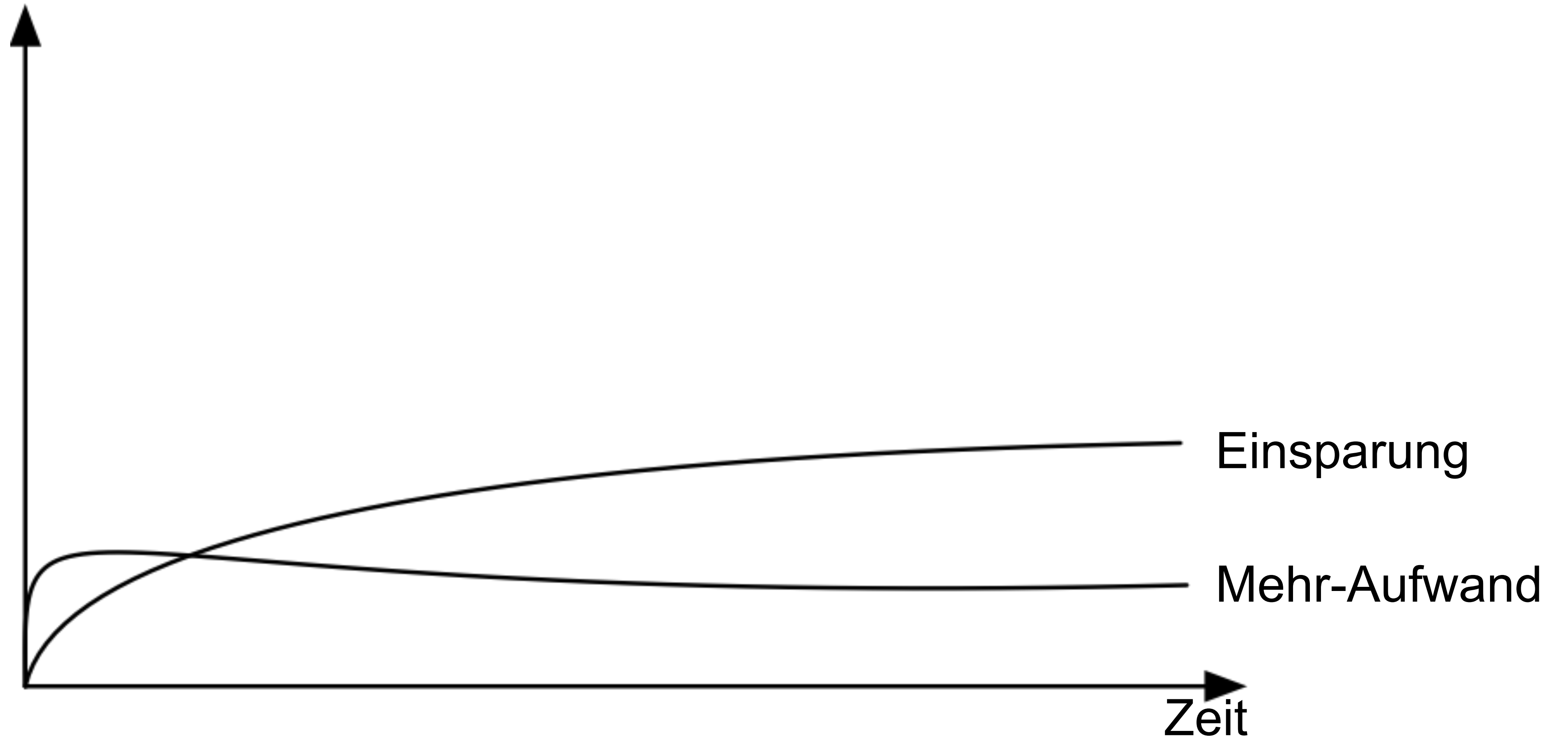
= Difference Testing





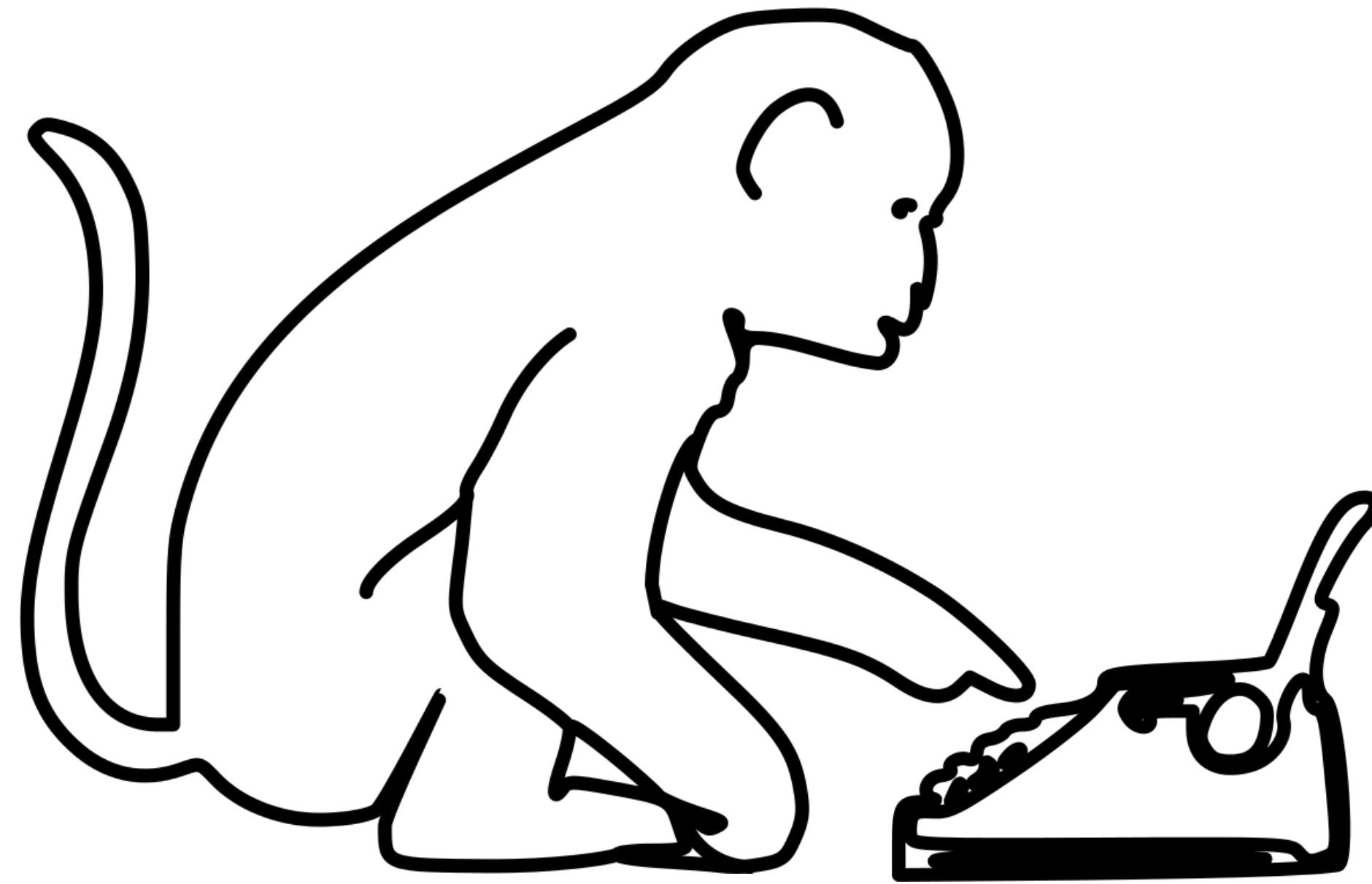
AUTOMATION







**Infinite-Monkey-Theorem:
Wenn eine Affe nur lange genug auf einer
Schreibmaschine tippt,
schreibt er irgendwann alle Werke von Shakespeare.**



Wir ersetzen die Schreibmaschine mit einem Computer...

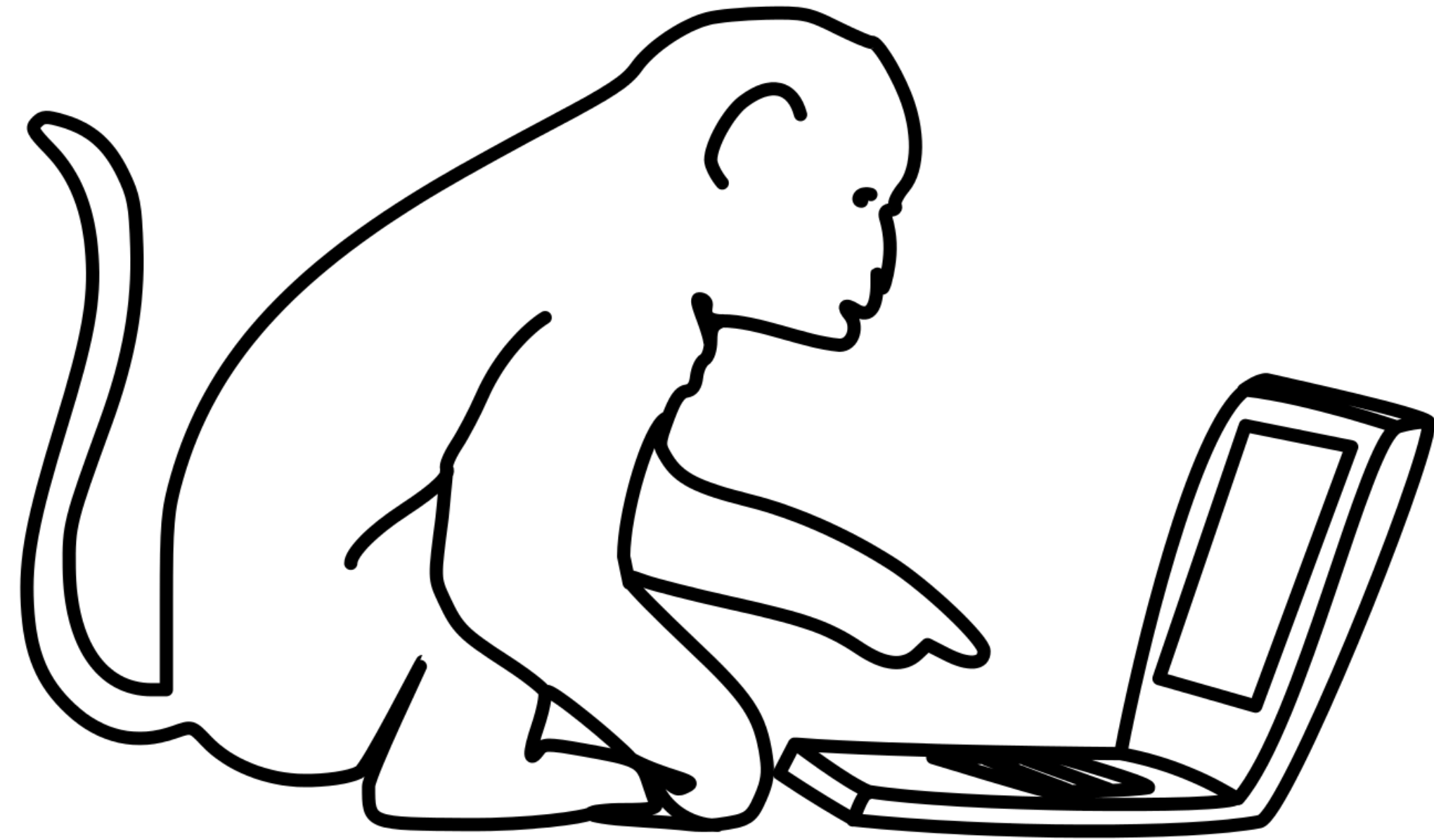


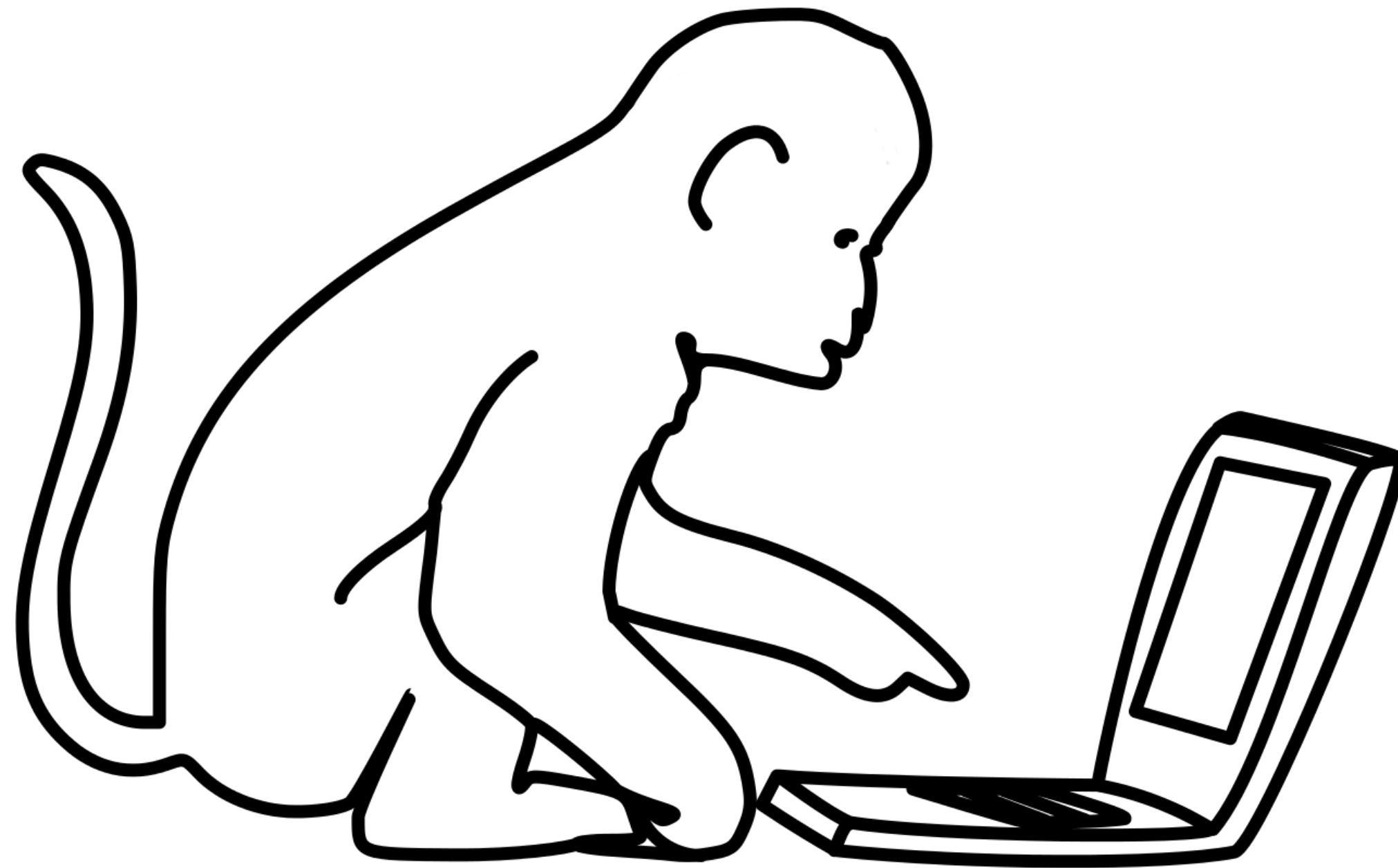
Infinite Monkey

```
1. public static void main(String... args) throws Exception {
2.     Robot robot = new Robot();
3.     while (true) {
4.         robot.mouseMove(random.nextInt(maxX), random.nextInt(maxY));
5.         robot.mousePress(InputEvent.BUTTON1_DOWN_MASK);
6.         robot.mouseRelease(InputEvent.BUTTON1_DOWN_MASK);
7.         robot.delay(200);
8.         for (char inputChar : randomString().toCharArray()) {
9.             robot.keyPress((int) inputChar);
10.            robot.keyRelease((int) inputChar);
11.            robot.delay(10);
12.        }
13.        robot.keyPress(KeyEvent.VK_ENTER);
14.        robot.keyRelease(KeyEvent.VK_ENTER);
15.    }
16. }
```

Infinite Monkey

DEMO





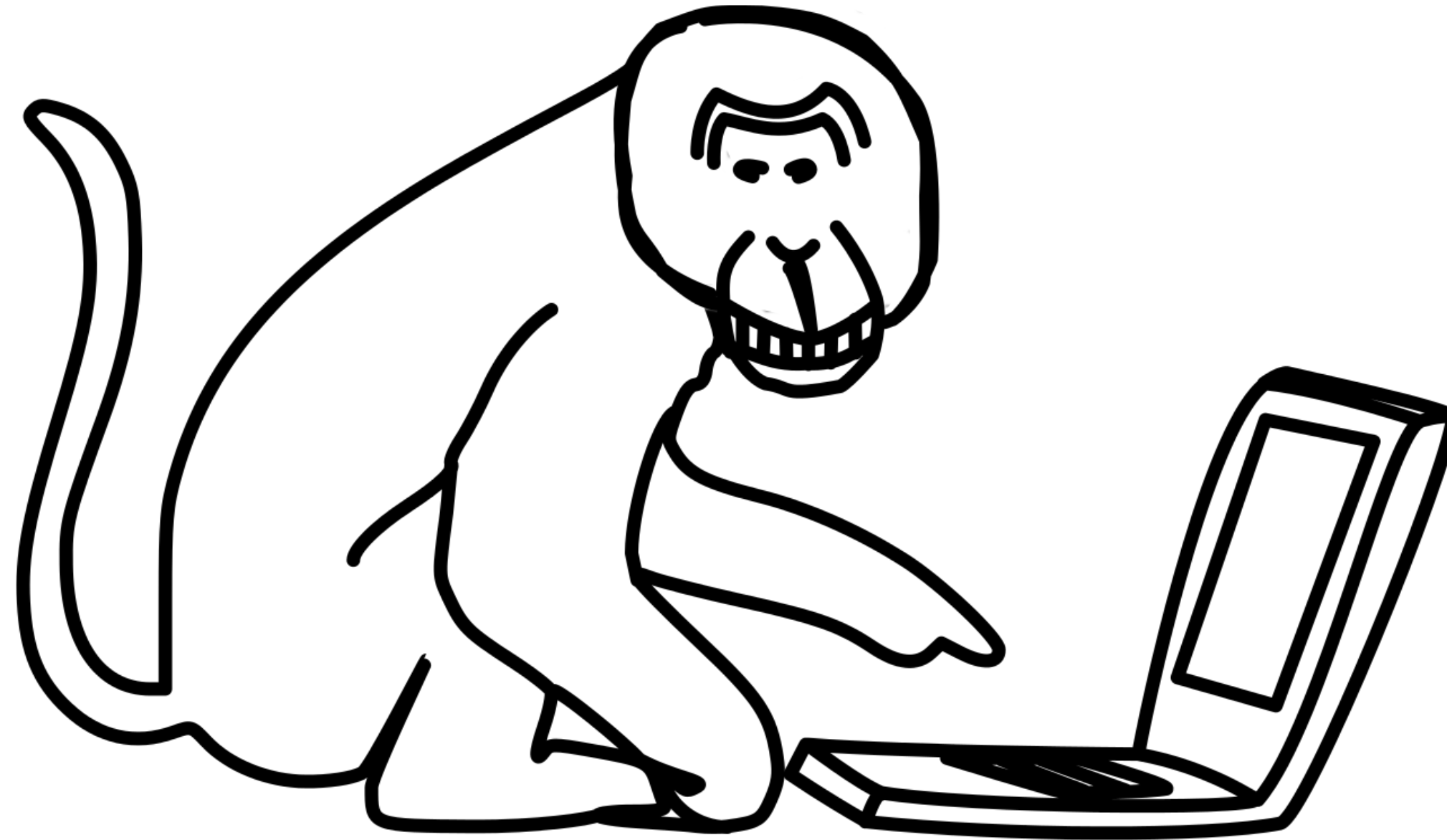
Intelligenter Affe

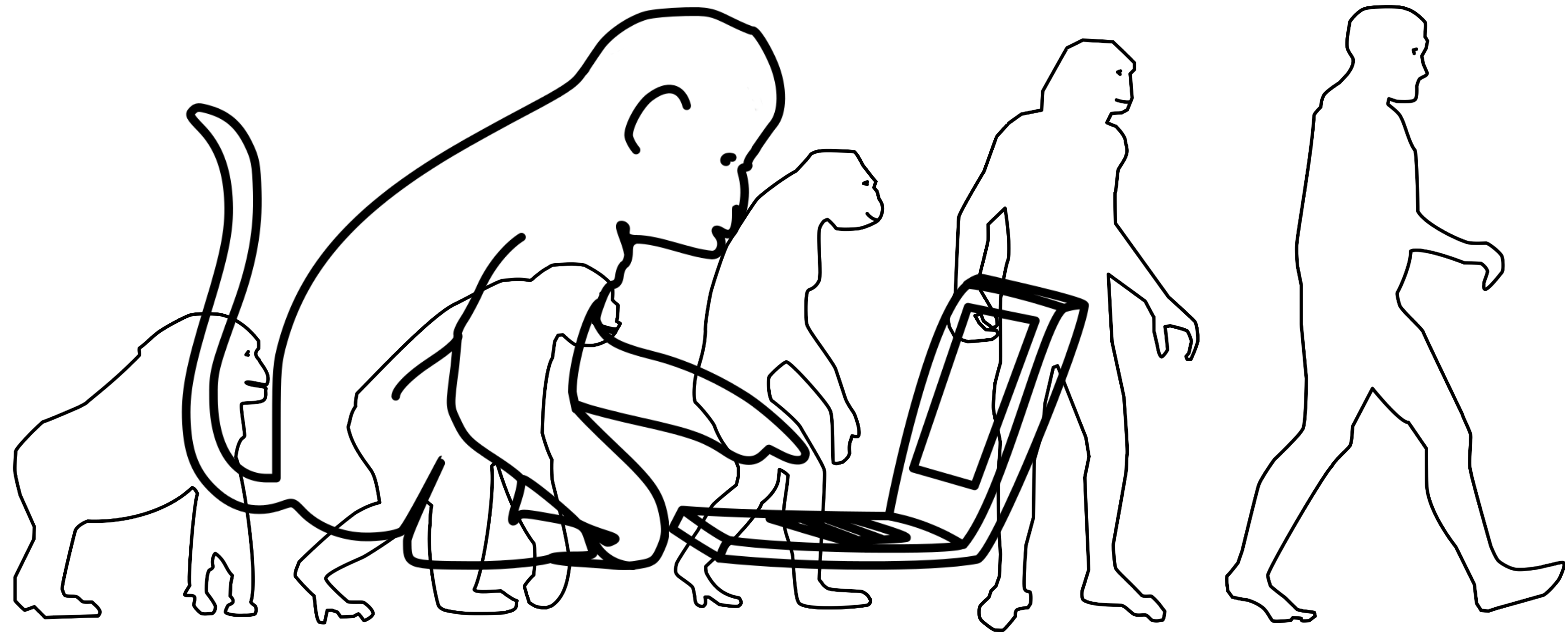
```
1. public static void main(String... args) throws Exception {
2.     WebDriver driver = new FirefoxDriver();
3.     driver.get("http://www.retest.de");
4.     while (true) {
5.         List<WebElement> links = driver.findElements(By.tagName("a"));
6.         links.get(random.nextInt(links.size())).click();
7.         Thread.sleep(500);
8.         List<WebElement> fields =
9.             driver.findElements(By.xpath("//input[@type='text']"));
10.        WebElement field = fields.get(random.nextInt(fields.size()));
11.        field.sendKeys(randomString());
12.        Thread.sleep(500);
13.    }
14. }
```

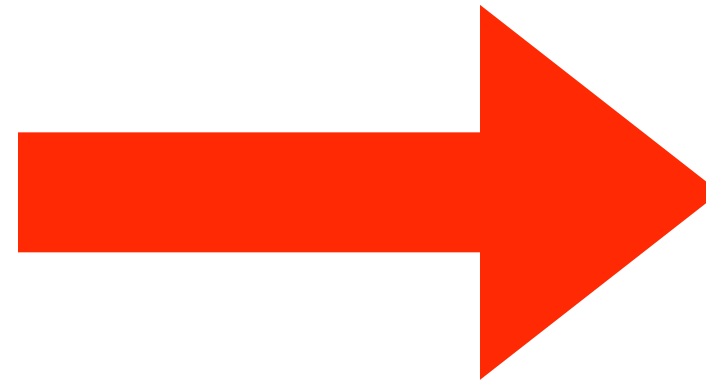
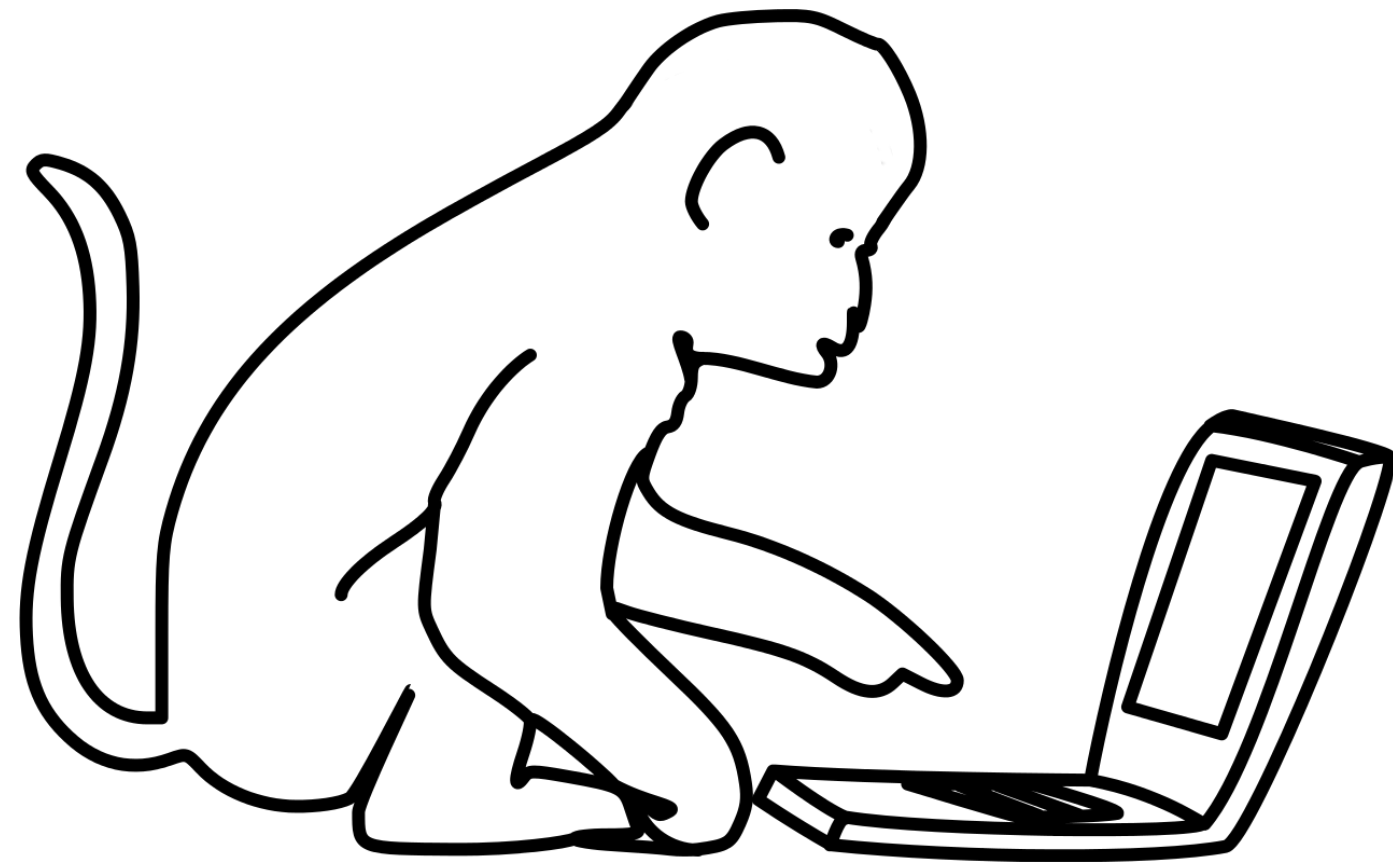
Intelligenter Affe

DEMO

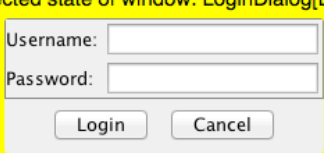
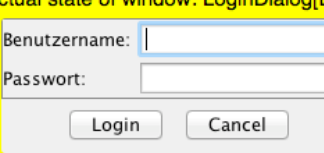
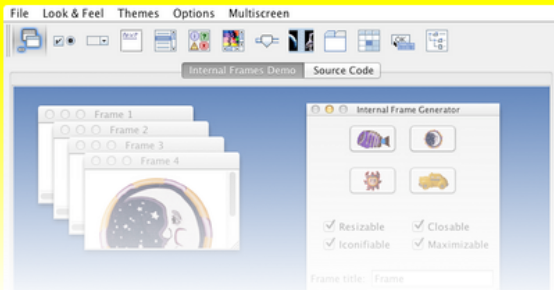
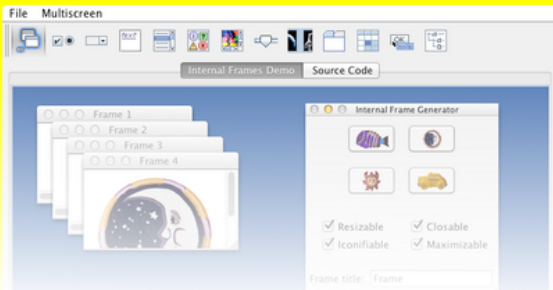
Intelligenter Affe







Individual Differences

	Expected state of window: LoginDialog(Login)	Actual state of window: LoginDialog(Login)		
Difference 0:			Tests: test0 test1 test2 test3 test4 test5 test6	
	Username: {Window/JRootPane_0/JLayeredPane_0/JPanel_0/JLabel_0 description=Username:}	Benutzername: {Window/JRootPane_0/JLayeredPane_0/JPanel_0/JLabel_0 description=Benutzername:}		
	Password: {Window/JRootPane_0/JLayeredPane_0/JPanel_0/JLabel_1 description=Password:}	Passwort: {Window/JRootPane_0/JLayeredPane_0/JPanel_0/JLabel_1 description=Passwort:}		
	Expected state of window: JFrame(SwingSet2)	Actual state of window: JFrame(SwingSet2)		
				

5 DINGE...

1. Regressionstests sind keine Tests
2. Welches Paradigma besser passt
3. Robuste automatische Tests mit wenig Aufwand
4. Welche Rolle KI dabei spielt
5. Was dann für Sie als Mensch noch zu tun bleibt

GitHub navigation bar with repository search, navigation links (Pull requests, Issues, Gist), and user profile.

Repository header for 'retest / retest' with interaction buttons: Unwatch (1), Star (0), Fork (0). Below are tabs for Code, Issues (0), Pull requests (0), Wiki, Pulse, Graphs, and Settings.

Next generation frontend regression testing tool <http://www.retest.de> — Edit

Repository statistics: 3 commits, 1 branch, 0 releases, 1 contributor.

Repository actions: Branch: master, New pull request, Create new file, Upload files, Find file, Clone or download.

roesslerj committed on GitHub Add some initial info		Latest commit d25df90 4 minutes ago
CONTRIBUTING.md	Create CONTRIBUTING.md	4 hours ago
README.md	Add some initial info	4 minutes ago

README.md

ReTest

is a next generation frontend regression testing tool that combines

Capture & Replay with Golden Master testing and a VCS-like approach to test maintenance.

More info can be found at <http://www.retest.de>



Mitte 2017

Interesse?

Unser Service ist momentan noch nicht für jeden Kunden verfügbar, aber wir arbeiten daran.

Wenn Sie Interesse haben, tragen Sie Ihre Email ein und wir melden uns sobald wie möglich bei Ihnen!

  A form consisting of a light grey input field with the placeholder text "E-Mail Adresse", a small red icon of a person with a checkmark, and a green button with the text "Anmelden".

Wir werden Ihre Email-Adresse nur verwenden um Sie zu kontaktieren, sobald unser Service für Sie verfügbar ist.

Wir werden Ihre Email-Adresse nicht weitergeben und nicht missbrauchen. **Versprochen!**

www.retest.de