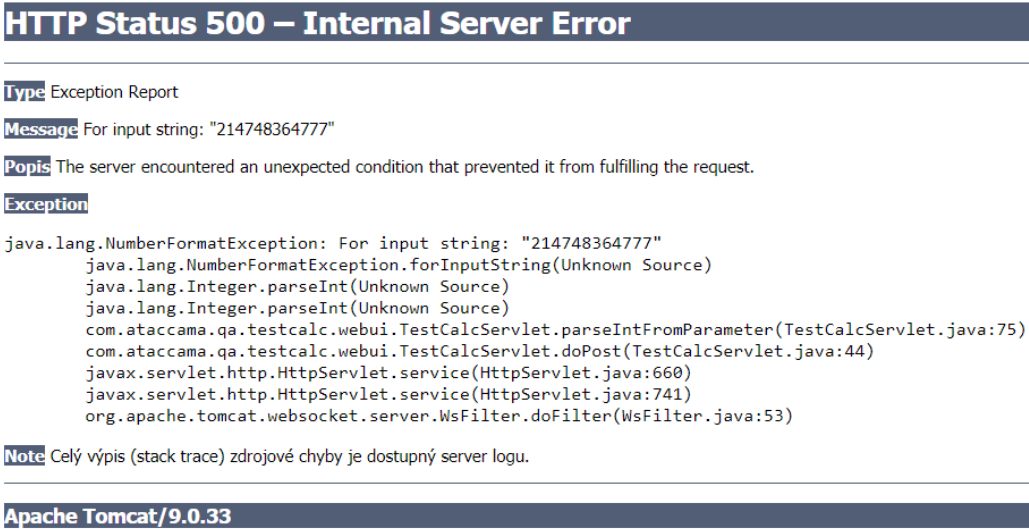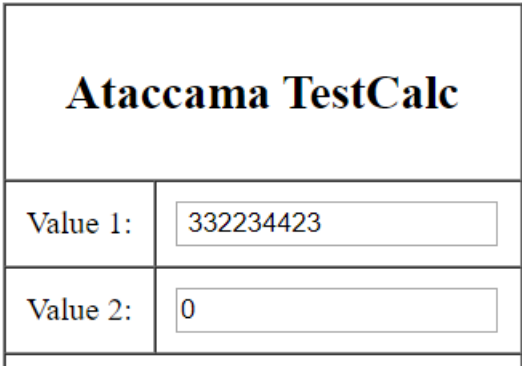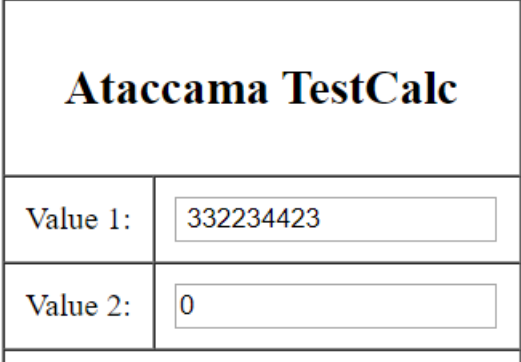|	
Defect ID:	**Issue 01**
Problem Title:	Invalid result while the computed value exceeds the integer limit (add, multiply)
Environment:	Chrome, Win10
Defect Type:	☐ Functionality
Priority:	☐ Medium
Severity:	☐ Medium

Steps to reproduce:	1. Value1 = 2.147.483.647 (Integer.MAX_VALUE)
	2. Value2 = 2.147.483.647 (Integer.MAX_VALUE)
	3. Select "addition"
	4. Click "Calculate"
	
	Actual result: -2
	Expected result: 4.294.967.294
	
	Note: This is not exactly a product bug. The problem caused by **Integer overflow**. This is because of two's complement, where the leftmost bit is used to signify if a number is positive (0) or negative (1). When you add max int by itself (equivalent of multiply by two), this happens:
	
	`  01111111111111111111111111`
	`+ 01111111111111111111111111`
	`_____`
	`  11111111111111111111111110`
	
	and 11111111111111111111111110 represents -2.
	
	Possible solutions:
	This is the *TestCalc.add()* method
	<pre>public static int add(int a, int b) {
	    int c = a + b + 1;
	    return c - 1;
	}</pre>We can change it return type and add cast to long numbers like this:
	<pre>public static long add(int a, int b) {
	    long c = (long)a + (long)b + 1;
	    return c - 1;
	}</pre>Another way – to throw an exception when the result is exceed the INT range.

Screenshot:	**Ataccama TestCalc** Value 1: `2147483647` Value 2: `2147483647` ◉ addition ○ subtraction ○ multiplication ○ division [Calculate] Result: `-2`

Defect ID:	Issue 02
Defect or Enhancement	☐ Defect (Default)
Problem Title:	Uninformative error message for Web UI in case of Integer overflow
Environment:	Chrome, Win10
Defect Type:	☐ Functionality
Priority:	☐ Low
Severity:	☐ Low
Steps to reproduce:	1. Open **WebUI** 2. Value1 = 2.147.483.648 (Integer.MAX_VALUE + 1) 3. Value2 – any valid value 4. Select "addition" 5. Click "Calculate" 6. Write the error code and message 7. Send a **POST** request with the same data (via Postman, etc) 8. Compare error messages for UI and Post **Actual result**: Message: For input string: "<value1>" **Expected result**: Message should contain information about Integer overflow. See the POST request example.

Screenshot:	**UI**
	
	HTTP Status 500 – Internal Server Error
	
	Type Exception Report
	
	Message For input string: "214748364777"
	
	Popis The server encountered an unexpected condition that prevented it from fulfilling the request.
	
	Exception
	
	`java.lang.NumberFormatException: For input string: "214748364777"`
	`        java.lang.NumberFormatException.forInputString(Unknown Source)`
	`        java.lang.Integer.parseInt(Unknown Source)`
	`        java.lang.Integer.parseInt(Unknown Source)`
	`        com.ataccama.qa.testcalc.webui.TestCalcServlet.parseIntFromParameter(TestCalcServlet.java:75)`
	`        com.ataccama.qa.testcalc.webui.TestCalcServlet.doPost(TestCalcServlet.java:44)`
	`        javax.servlet.http.HttpServlet.service(HttpServlet.java:660)`
	`        javax.servlet.http.HttpServlet.service(HttpServlet.java:741)`
	`        org.apache.tomcat.websocket.server.WsFilter.doFilter(WsFilter.java:53)`
	
	Note Celý výpis (stack trace) zdrojové chyby je dostupný server logu.
	
	Apache Tomcat/9.0.33
	
	POST
	Can not construct instance of java.lang.Integer from String value '214748364777': Overflow: numeric value (214748364777) out of range of Integer (-2147483648 - 2147483647)

Defect ID:	**Issue 03**
Defect or Enhancement	☐ Defect (Default)
Problem Title:	WebUI: no value length limit for Value1 and Value2 text boxes
Environment:	Chrome, Firefox, Win10
Defect Type:	☐ Functionality
Priority:	☐ Low
Severity:	☐ Low
Steps to reproduce:	1. Open **WebUI** 2. Value1 = enter a long value (e.g. 1111111111111111111111111111111) **Actual result**: There is no value length limit **Expected result**: there should be the length limit (equal to 32-bit integer limit)
Screenshot:	

Ataccama TestCalc

Value 1:	64777666666666666666
Value 2:	0

Defect ID:	**Issue 04**
Defect or Enhancement	☐ Defect (Default)
Problem Title:	There is no trim() method to filter values input with trailing spaces
Environment:	Chrome, Firefox, Win10
Defect Type:	☐ Functionality
Priority:	☐ Low
Severity:	☐ Low
Steps to reproduce:	1. Open **WebUI** 2. Value1 = enter a value with spaces at the beginning and at the end 3. Click **Calculate** **Actual result**: The exception is thrown **Expected result**: the exception can be avoided in case of trimming the spaces.
Screenshot:	

Ataccama TestCalc

Value 1: 332234423

Value 2: 0

HTTP Status 500 – Internal Server Error

Type Exception Report

Message For input string: " 332234423 "

Popis The server encountered an unexpected condition that prevented it from fulfilling the request.

Exception

```
java.lang.NumberFormatException: For input string: " 332234423 "
        java.lang.NumberFormatException.forInputString(Unknown Source)
        java.lang.Integer.parseInt(Unknown Source)
        java.lang.Integer.parseInt(Unknown Source)
        com.ataccama.qa.testcalc.webui.TestCalcServlet.parseIntFromParameter(TestCalcServlet.java:75)
        com.ataccama.qa.testcalc.webui.TestCalcServlet.doPost(TestCalcServlet.java:44)
        javax.servlet.http.HttpServlet.service(HttpServlet.java:660)
        javax.servlet.http.HttpServlet.service(HttpServlet.java:741)
        org.apache.tomcat.websocket.server.WsFilter.doFilter(WsFilter.java:53)
```

Note Celý výpis (stack trace) zdrojové chyby je dostupný server logu.

Defect ID:	Issue 05
Defect or Enhancement	☐ Enhancement
Problem Title:	Add exception handling to provide a message in case of invalid input
Environment:	Chrome, Firefox, Win10
Defect Type:	☐ Functionality
Priority:	☐ High
Severity:	☐ High
Steps to reproduce:	1. Enter invalid values (integer overflow values, strings, etc) 2. Click Calculate There is an exception thrown. **Suggestion**: it would be much more user-friendly if there was a clear message or warning instead of exception.

Screenshot:	**Ataccama TestCalc**
	
	Value 1: 332234423
	Value 2: 0
	
	HTTP Status 500 – Internal Server Error
	
	Type Exception Report
	
	Message For input string: " 332234423 "
	
	Popis The server encountered an unexpected condition that prevented it from fulfilling the request.
	
	Exception
	
	`java.lang.NumberFormatException: For input string: " 332234423 "`
	`        java.lang.NumberFormatException.forInputString(Unknown Source)`
	`        java.lang.Integer.parseInt(Unknown Source)`
	`        java.lang.Integer.parseInt(Unknown Source)`
	`        com.ataccama.qa.testcalc.webui.TestCalcServlet.parseIntFromParameter(TestCalcServlet.java:75)`
	`        com.ataccama.qa.testcalc.webui.TestCalcServlet.doPost(TestCalcServlet.java:44)`
	`        javax.servlet.http.HttpServlet.service(HttpServlet.java:660)`
	`        javax.servlet.http.HttpServlet.service(HttpServlet.java:741)`
	`        org.apache.tomcat.websocket.server.WsFilter.doFilter(WsFilter.java:53)`
	
	Note Celý výpis (stack trace) zdrojové chyby je dostupný server logu.

Template

Defect ID: (Required)	System generated
Author: (Required)	System generated
Defect or Enhancement: (Required)	☐ Defect (Default) ☐ Enhancement
Problem Title: (Required)	Short one-line description
Problem Description: (Required)	A precise problem description with screen shots, if possible
Current Environment: (Required)	E.g. Win95 / Oracle 4.0 NT
Defect Type: (Required)	☐ Functionality (Default) ☐ Architectural ☐ Connectivity ☐ Consistency ☐ Database Integrity ☐ Documentation ☐ GUI ☐ Installation ☐ Memory ☐ Performance ☐ Security and Controls ☐ Standards and Conventions ☐ Stress ☐ Usability
Priority: (Required)	☐ High (Default) ☐ Critical ☐ Medium ☐ Low
Severity: (Required)	☐ High (Default) ☐ Critical ☐ Medium ☐ Low
Status: (Required)	☐ Open (Default) ☐ Being Reviewed by Development ☐ Returned by Development ☐ Ready for Testing in the Next Build ☐ Closed (QA) ☐ Returned by (QA) ☐ Deferred to the Next Release
Status Description:	(Required when) Status = "Returned by Development," "Ready for Testing in the Next Build"