

MrBuggy 3 application specification

Table of contents

List of definitions	4
1 Introduction.....	6
2 Purpose of the application.....	6
3 Application versions	6
4 Environmental requirements.....	7
5 Functional requirements.....	7
5.1 Client part.....	8
5.2 Server part	9
6 Description of the user interface	10
6.1 Client part.....	10
6.2 Server part	11
7 Non-functional requirements	12
7.1 Performance requirements.....	12
7.2 Safety requirements	12
7.3 Reliability requirements.....	13
8 Application installation	13
9 Demo version of the client application.....	13
10 Criteria for evaluating defects.....	14

List of drawings

Figure 1 Diagram of the user interface of the client part	11
---	----

MrBuggy 3 application

Versions of the document:

Date	Version	Author	Comment
30.01.2015	0.1	Luke Galuszka	Document template
03.02.2015	0.2	Tomasz Blaszczyzyn, Luke Galuszka and Radoslav Smilgin	Description of environmental and functional requirements
05.02.2015	0.3	Tomasz Blaszczyzyn, Luke Galuszka and Radoslav Smilgin	Corrections after the first review. Description of modes of operation, application versions, non-functional requirements, installation, schedule.
10.02.2015	0.4	Tomasz Blaszczyzyn, Luke Galuszka and Radoslav Smilgin	Corrections after the second review. GUI of server part, reliability requirements, defect assessment methods, glossary of terms
18.02.2015	0.5	Tomasz Blaszczyzyn, Luke Galuszka and Radoslav Smilgin	Corrections after the third review
27.02.2015	0.6	Tomasz Blaszczyzyn, Luke Galuszka and Radoslav Smilgin	Improvements after the fourth review
03.03.2015	0.7	Tomasz Blaszczyzyn, Luke Galuszka and Radoslav Smilgin	Improvements after the fifth review
06.03.2015	1.0	Tomasz Blaszczyzyn, Luke Galuszka and Radoslav Smilgin	Minor language corrections. Final version of the document

List of definitions

- Championship - refers to the Polish Championship in Software Testing
- Client application - part of the application made available to participants to solve tasks during the Polish Software Testing Championships
- Server application - the part of the application responsible for collecting information transferred from the client part of the application
- Demo version of the client application - a version of the client application that will be made available to participants before the competition
- Final version of the client application - the version of the client application that will be made available to participants at the start of the first round of the Polish Software Testing Championships
- Public version - the version of the application that will be made available to all willing parties after the Championship is over.
- Team captain mode - application mode for a participant in the Championship in the team category with rights to report defects
- Team member mode - application mode for the participant of the Championship In the team category with rights limited to looking for defections
- Competitor mode - application mode for a participant in the Championship in the individual category with rights to report defects
- Task report - a report generated by the client application after a player/team has completed work on a given task
- Summary report - a report generated by the server application with a general classification
- Task - the part of the application where the defect sought by the participants is located
- Referee Commission - a group of people appointed by the Championship Organizer to supervise the Championships
- Review Committee - a review body that considers appeals against the decisions of the Referee Commission

MrBuggy 3 application

- Contractor - the organization that will be contracted to produce the MrBuggy 3 application
- Event log of a client or server application - a file generated by applications containing data on the operation of the application on the client and server side, respectively. Based on it, it is possible to trace the operation of the application.
- Application installer - a program that will install the MrBuggy 3 application in the target environment

1 Introduction

This document presents the specifications of the MrBuggy 2015 application. This application will be used during the first round of the Polish Software Testing Championship to determine the participants in the final round. For more information about the Championship itself, visit www.testingcup.pl.

2 Purpose of the application

The purpose of the application is to enable the first round of the Polish Testing Championship to be conducted and automatically checked for results Software and the selection of participants in the final round.

Due to its educational qualities, it will be made available to all those who are willing to participate after the Championship is over. This will give every testing enthusiast the opportunity to develop and test their testing skills.

The target group of the application's users consists of professional testers, software testing enthusiasts in Poland and all people who want to face testing tasks.

3 Application versions

Four versions of the client application are required:

- Demo version - will be sent to all participants before the Championship in order to run and familiarize themselves with the application and determine the correct operation of the application on a given participant's hardware configuration. There should be one test task in the application.
- final version - will be made available to participants at the start of the first round of the Polish Testing Championships

MrBuggy 3 application

Software. The tasks posted may not include the task from the demo version (described below).

- public version - will be made available to all willing for educational purposes after the Championship is completed

The demo, final and public versions differ only in the number of tasks. Other features of the application are the same.

4 Environmental requirements

The MrBuggy 3 application is expected to support the following operating systems:

- Client part:
 - Windows 7
 - Windows 8/8.1
- Server part:
 - Windows 7

The programming language and database used during the development of the application are not defined. Their selection is left to the Contractor of the order.

5 Functional requirements

The MrBuggy 3 application consists of two parts:

- client part - made available to participants
- server part - made available to the judging committee

Data from the client part is delivered to the server part in the form of a text file:

- In case of a working network connection - directly from the client application

MrBuggy 3 application

- In the absence of a network connection - using the export function from the client part and import in the server part. A description of this functionality will be presented later

5.1 Client part

This is an application that will be made available to all participants in the first round of the Polish Software Testing Championship. It is designed to:

- Enable users to look for one defect in each of the tasks created and report on them
- generate an event log of the client part

No less than 15 tasks (problems) are to be available in the application. There is to be exactly one defect in each sentence. These defects can belong to groups:

- functional defects
- safety defects
- usability defects

The application does not have a task generator. All tasks are to be implemented in the application.

The client application must operate in one of three modes:

- In the team category:
 - team captain mode
 - team member mode
- In the individual category:
 - player mode

The modes differ in their ability to report defects. In team member mode, this possibility is disabled. Mode selection is made when logging into the application. You cannot change the mode while it is running.

The application must not lose data if it is closed unexpectedly. The backup is to be created every time you click the

MrBuggy 3 application

in the "Found defect" button. It is supposed to take the format of a binary file, which will be loaded when the application is reopened.

If the network connection is lost, the user should still be able to perform all activities in the application.

The order of tasks displayed in the client part should be random.

5.2 Server part

This is an application that will be made available to the Judicial Commission. Its purpose is to:

- Collect task reports from players and teams
- Conduct an overall classification in two categories: individual and team
- Automatically assess the correctness of reported defects in task reports submitted by players/teams
- Allow the Judging Committee to manually change the number of points awarded for a task
- Display the overall classification on an external monitor
- Enable the generation of a summary report taking into account the following data:
 - Position in the general classification
 - Name of player or team
 - Number of points awarded for each task of a given competitor/team
 - Total points scored by a given player/team
- Record all activities (such as correctly received report, incorrectly received report, correctly evaluated report, etc.) in the event log of the server part
- On an ongoing basis, count the number of task reports received from participants

6 Description of the user interface

All messages, information and key names in the graphical interface must be in Polish.

6.1 Client part

The application window should be divided into two parts - the "Tasks" window and the "Side Menu" arranged on the right side.

The "Side Menu" includes:

- "Time" field - displays the time until the end of the round (format: hh:mm:ss; hour, minute, second, millisecond)
- The "Task No." field - gives the number of the task displayed in the "Tasks" window. Task numbering rules are described below.
- The "Problem Description" field - contains general information about the task displayed in the "Tasks" field, along with the number of points for that task
- The "Task list" field - allows you to navigate between tasks. Tasks without an answer, with an answer and currently displayed tasks must be marked with a different color.
- Navigation buttons - "Next" and "Previous" allow you to move to the current, next and previous task, respectively.
- The "Report defect" button - allows you to report the defect currently displayed in the "Tasks" window. Each time this button is clicked, a backup is created with the current state of the application (to preserve the user's progress in case of failure) and a defect report is sent to the server part of the application. This function is available
In all application modes.
- The "Finish" button - completes work on all tasks and sends answers for evaluation. This action cannot be undone. It can be performed only once. To avoid confusion, the user must confirm the desire to perform this action. After pressing the "Finish" button, all the data on the user and the test tasks solved by the user exported

MrBuggy 3 application

are into a binary file. This file can be imported into the server part in case of network connection problems.

- The "Tasks" window - It displays a task in which the user must find defects.

The application window should fit entirely on a monitor screen with a resolution of 1024x768 and be aesthetically pleasing.

The MrBuggy 3 icon must appear in the application window.

The diagram below does not reflect the final design and is only intended to position the most important elements of the window.

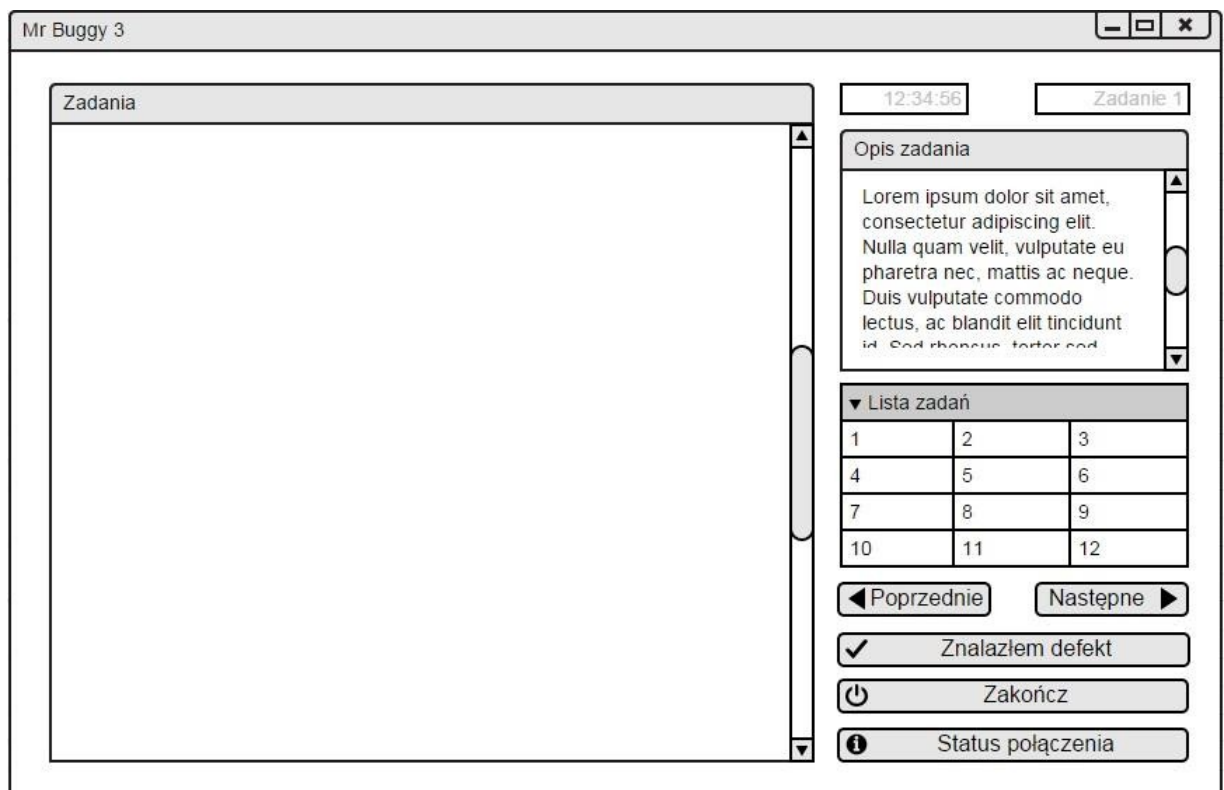


Figure 1 Diagram of the user interface of the client part

6.2 Server part

Access to the server part can be realized through the command line or the graphical user interface of the server part. Decision

on how to access the server part lies with the Software Contractor.

Nevertheless, all functions of the application must be accessible to users. The server application is to be developed using Java7.

7 Non-functional requirements

7.1 Performance requirements

- Interface response time must be less than 1 second
- The summary report is expected to take no longer than 15 seconds to generate.
- the size of the backup file of the client application must not exceed 2MB1
- The server application must be able to accept up to 50 user reports at any one time
- the client application, when launched, must not take up more than 100MB of the computer's operating memory
- Application performance calculated from the formula:

$$W = \frac{m \cdot f}{(\Delta t)^3} \cdot n.$$

Where:

W - application performance

m - the amount of operating memory in the computer
f - the operating frequency of the processor

n - number of processor threads

t - the average response time of the interface is to be greater than 10000.

7.2 Security requirements

- access to the server part of the application must be secured with a login and password
- logins must be individual for each user of the server part of the application
- The login must consist of 2 to 8 characters and contain at least one lowercase letter, one uppercase letter, one number and one special character
- login cannot contain whitespace characters or Polish dialect characters
- The password must consist of at least 20 characters and contain at least one lowercase letter, one uppercase letter, one number, one special character

MrBuggy 3 application

- the password must not contain white characters or Polish dialect characters
- passwords must be stored in an encrypted format
- a procedure for creating, restoring and unlocking an account must be implemented
- a procedure for changing the password must be implemented
- account must be blocked after entering the wrong password or part of it 3 times
- account tokens to be randomly generated
- the server part must have the ability to back up the summary report

7.3 Reliability requirements

- during the year, the average number of failures (understood as the number of unexpected shutdowns of applications requiring the use of backup) in one day must not be greater than 1
- switching between tasks must not be longer than 1 second

8 Application installation

No application installer is required. MrBuggy 3 is to be a portable application that is to be delivered as a "zip" archive. The unzipped archive must contain the executable file that runs the application and all necessary libraries and resources.

9 Demo version of the client application

Allows participants to try out and familiarize themselves with the client application before the Championship.

MrBuggy 3 application

Description of the tasks included in this version:

- The task window displays a calculator with the ability to perform only one type of operation - division. The defect consists in incorrectly dividing by zero. As a result of such an operation, zero is displayed on the screen.
- The task window will display two rectangles. A function will be created to check if the rectangles overlap (if there is a part of the common between them) and displaying this information. The defect is that in case one of the rectangles completely covers the other, an incorrect message is displayed that the rectangles do not overlap.

10 Criteria for evaluating defects

Defects in the application are rated by importance and are divided into 3 classes:

- trivial defects (1 to 2 points)
- normal defects (from 3 to 4 points)
- critical defects (from 4 to 6 points) In

addition, the application

assigns:

- -2 points for reporting a defect that is a properly functioning feature
- 0 points for not reporting a defect to the task.

The specific scoring for a given task will be assigned by the Judging Committee prior to the Championship (according to the concluded work schedule) and entered into the application by the Contractor of the order.