

1 *Anagrams* User Requirements Document

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4 **1 Introduction**

5 This document defines the user requirements for *Anagrams*.

6 *Anagrams* is a software product consisting of one single-user application.  
7 With *Anagrams* the user can play a word game, where a word must be  
8 guessed given an anagram of that word. The purpose of this game is to  
9 entertain the user, but also to exercise the user's brain.

10 **1.1 Definitions, acronyms and abbreviations**

11 **anagram** An anagram is a permutation of a *word*. It consists of the same  
12 bag of letters, but in a different order.

13 **game** A game consists of a sequence of anagrams to be guessed.

14 **guess** A word input by the user to solve the anagram.

15 **round** A round in the game involves one anagram and zero or more guesses  
16 by the user.

17 **word** Nonempty sequence of lower-case alphabetic characters.

18 **2 General Description**

19 *Anagrams* is a new, stand-alone product. In the future, it is expected to be  
20 replaced by a more advanced version.

21 **2.1 General capabilities**

22 *Anagrams* lets the user play multiple rounds of the anagram game. In a  
23 round, the user is offered an anagram of a random word from a list, and  
24 the user can repeatedly try to guess the word from which the anagram is  
25 derived. Each guess is evaluated as either correct or incorrect. No limits are  
26 imposed on the number of rounds, the number of guesses per round, and  
27 the time taken for making a guess. A game score is maintained: how many  
28 rounds were eventually correctly guessed and how many not.

## 29 2.2 General constraints

30 The list of words from which anagrams are offered to the user is built into  
31 the application. This way the software consists of a single file and does not  
32 need access to a file system or network for loading the word list. For the  
33 same reason, *Anagrams* does not maintain information across runs.

## 34 2.3 User characteristics

35 *Anagrams* will be used by general educated users, with an interest in lan-  
36 guage games. No extensive training is needed to learn how to use *Anagrams*.

## 37 2.4 Operational environment

38 *Anagrams* will run on a personal computer, and does not require access to  
39 the file system or the internet. It is operated by a single user, though users  
40 may take turns when guessing.

## 41 2.5 Assumptions and dependencies

42 We are not aware of any assumptions or dependencies.

# 43 3 Specific Requirements

44 The specific user requirements are labeled UR-xx.

45 Priorities are indicated by P-y, where y is 1, 2, or 3, with the following  
46 meanings:

47 P-1 This requirement has **highest priority** and must be delivered.

48 P-2 This requirement has **medium priority**, and may only be omitted  
49 when approved by the customer. This is only acceptable, if there are no  
50 requirements at priority P-3 whose omission would enable realization  
51 of the P-2 requirement.

52 P-3 This requirement has **lower priority**, and may be omitted if the de-  
53 veloper is unable deliver it. The developer is required to report this  
54 to the customer.

## 55 3.1 Capability requirements

### 56 3.1.1 Autonomous capabilities of *Anagrams*

57 **UR-10, P-1** *Anagrams* automatically starts a new game at startup.

58 **UR-11, P-1** When starting a round, *Anagrams* selects a word from a built-  
59 in word list, and presents an anagram of this word to the user for  
60 guessing.

- 61 **UR-12, P-1** The built-in word lists consists of at least 10 words.
- 62 **UR-13, P-2** *Anagrams* selects the word in UR-11 randomly.
- 63 **UR-14, P-3** *Anagrams* selects the anagram in UR-11 randomly.
- 64 **UR-15, P-1** *Anagrams* evaluates a guess from the user as either correct of  
65 incorrect.
- 66 **UR-16, P-2** *Anagrams* displays a game score consisting of (a) the number  
67 of rounds in which the user made at least one correct guess and (b) the  
68 number of rounds never guessed correctly (that is, given up).

### 69 **3.1.2 Capabilities triggered by the user**

- 70 **UR-20, P-1** At any time during a round, the user can make a guess, or  
71 give up the round and start a new round.
- 72 **UR-30, P-3** The user can request information about the product's version  
73 at any time, without affecting the state of the game.
- 74 **UR-40, P-1** The user can terminate the game at any time, in which case  
75 *Anagrams* is exited.

### 76 **3.2 Constraint requirements**

- 77 **UR-80, P-1** *Anagrams* has a graphical user interface, with text fields for  
78 inputting and outputting words, and buttons for game actions.
- 79 **UR-81, P-1** The user interface uses the English language.
- 80 **UR-82, P-1** The software user manual is written in English.
- 81 **UR-90, P-1** The software is written in Java.
- 82 **UR-91, P-1** The comments in the software are written in English.
- 83 **UR-92, P-1** The software adheres to the ESA Java Coding Standards [1].

## 84 **References**

- 85 [1] Board for Software Standardisation and Control (BSSC). *Java Coding*  
86 *Standards*. European Space Agency, 03 March 2005.  
87 <ftp://ftp.estec.esa.nl/pub/wm/wme/bssc/Java-Coding-Standards-20050303-releaseA.pdf>

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88 Written by Tom Verhoeff (SET) as an example for a software engineering  
89 project at Eindhoven University of Technology, based on the *AnagramGame*  
90 sample Java program provided with the NetBeans IDE.