SOFTWARE METRICS DOCUMENT
SOUTHSIDE BARBERSHOP

ΠΑΝΑΓΙΩΤΗΣ ΧΡΙΣΤΟΔΟΥΛΟΥ

ΑΝΔΡΕΑΣ ΧΡΙΣΤΟΥ

ΓΙΩΡΓΟΣ ΤΣΟΒΙΛΗΣ

ΡΑΦΑΗΛΙΑ ΑΝΤΩΝΙΟΥ

ΚΩΝΣΤΑΝΤΙΝΟΣ ΚΟΝΣΤΑΝΤΙΝΟΥ

VERSION: FINAL

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CONTENTS

1. PROCESS METRICS

1.1 Development Effort (per phase)

Phase	Estimated Effort (person-days)	Actual Effort (person-days)
Requirements Analysis	70	80
Specification	70	115
Design	150	261
Implementation and Integration	10	4
Testing	28	11

1.2 Development Duration (per phase)

Phase	Estimated Duration (calendar-days)	Actual Duration (calendar-days)
Requirements Analysis	14	18
Specification	25	30
Design	40	56
Implementation and Integration	10	2
Testing	21	14

1.3 Slippage

Phase	Effort Slippage (person-days)	Duration Slippage (calendar-days)
Requirements Analysis	70-80 = -10 days *10 days over*	14-18 = -4 days *4 days over*
Specification	70-115 = -45 days	25-30 = -5 days

	45 days over	*5 days over*
Design	150-261 = -111 days *111 days over*	56-40 = -16 days *16 days over*
Implementation and Integration	10-4 = 6 days *6 days sooner*	10-2 = 8 days *8 days sooner*
Testing	28-11 = 17 days *17 days sooner*	21-14 = 7 days *7 days sooner*

1.4 Number of Changes

1.4.1 Requirements Change

Υπήρξε μόνο μια αλλαγή κατά την διάρκεια του project:

Ο πελάτης μας είχε ζητήσει στο τέλος για να μπορεί να κάνει disable τα ραντεβού

1.4.2 Fault Corrections

Μερικά από τα προβλήματα που αντιμετωπίσαμε και λύσαμε κατά την διάρκεια του project:

- Είχαμε πρόβλημα με το Appointments όπου δεν μας εμφάνιζε τα timeslots της ημέρας
- Στο review, η σελίδα δεν γίνονταν updated

1.4.3 Exogenous Factors

Δεν υπήρξαν αλλαγές λόγω εξωτερικών παραγόντων

2. PERSON METRICS

2.1 Staff Profile

2.1.1 Number of People Involved

Development Phase	Number of People
Requirements Analysis	4
Requirements Specifications	5
System Design	5
Implementation and Integration	5
Testing	5

2.1.2 Experience and Knowledge

Experience and Knowledge	Very Low	Low	Average	High	Very High
Giorgos Tsovilis			**X**		
Antreas Christou	**X**				
Konstantinos Konstantinou			**X**		
Rafailia Antoniou	**X**				
Panagiotis Christodoulou	**X**				

2.1.3 Skills (per phase)

Skills Requirements Analysis	Very Low	Low	Average	High	Very High
Giorgos Tsovilis				**X**	
Antreas Christou				**X**	

Konstantinos Konstantinou				**X**	
Rafailia Antoniou				**X**	
Panagiotis Christodoulou				**X**	

Skills Requirements Specifications	**Very Low**	**Low**	**Average**	**High**	**Very High**
Giorgos Tsovilis			**X**		
Antreas Christou				**X**	
Konstantinos Konstantinou				**X**	
Rafailia Antoniou			**X**		
Panagiotis Christodoulou			**X**		

Skills System Design	**Very Low**	**Low**	**Average**	**High**	**Very High**
Giorgos Tsovilis				**X**	
Antreas Christou				**X**	
Konstantinos Konstantinou			**X**		
Rafailia Antoniou				**X**	
Panagiotis Christodoulou			**X**		

Skills Implementation and Integration	**Very Low**	**Low**	**Average**	**High**	**Very High**
Giorgos Tsovilis				**X**	
Antreas Christou				**X**	
Konstantinos Konstantinou				**X**	
Rafailia Antoniou				**X**	
Panagiotis Christodoulou				**X**	

Skills Testing	**Very Low**	**Low**	**Average**	**High**	**Very High**
Giorgos Tsovilis			**X**		

Antreas Christou			**X**		
Konstantinos Konstantinou			**X**		
Rafailia Antoniou			**X**		
Panagiotis Christodoulou			**X**		

2.1.4 Leadership

Leadership Requirements Analysis	**Very Low**	**Low**	**Average**	**High**	**Very High**
Giorgos Tsovilis				**X**	
Antreas Christou				**X**	
Konstantinos Konstantinou			**X**		
Rafailia Antoniou			**X**		
Panagiotis Christodoulou			**X**		
Leadership Requirements Specifications	**Very Low**	**Low**	**Average**	**High**	**Very High**
Giorgos Tsovilis				**X**	
Antreas Christou				**X**	
Konstantinos Konstantinou			**X**		
Rafailia Antoniou			**X**		
Panagiotis Christodoulou			**X**		

Leadership System Design	**Very Low**	**Low**	**Average**	**High**	**Very High**
Giorgos Tsovilis				**X**	
Antreas Christou				**X**	
Konstantinos Konstantinou			**X**		
Rafailia Antoniou			**X**		
Panagiotis Christodoulou			**X**		

Leadership Implementation and Integration	Very Low	Low	Average	High	Very High
Giorgos Tsovilis				**X**	
Antreas Christou				**X**	
Konstantinos Konstantinou			**X**		
Rafailia Antoniou			**X**		
Panagiotis Christodoulou			**X**		

Leadership Testing	Very Low	Low	Average	High	Very High
Giorgos Tsovilis				**X**	
Antreas Christou				**X**	
Konstantinos Konstantinou			**X**		
Rafailia Antoniou			**X**		
Panagiotis Christodoulou			**X**		

2.1.5 Team Cohesion (per phase)

Team Cohesion	Very Low	Low	Average	High	Very High
Requirements Analysis					**X**
Requirements Specifications				**X**	
System Design					**X**
Implementation and Integration			**X**		
Testing				**X**	

3. PRODUCT METRICS

3.1 System Attributes

3.1.1 Development Platform

The primary development platform of the system (as determined by the operating system used) is PC (Mac OS, Microsoft Windows, Linux)(x64-based PC)

3.1.2 Programming Language Type(s)

The language type used for the project is: 3GL and 4GL

3GL(javascript), 4GL(html,php), Application Generator (bootstrap;)

3.1.3 Primary Programming Language

The primary language used for the development: PHP

3.1.4 Business Area Domain

The type of business area addressed by the project is: retail and services

3.1.5 Application Type

The type of application addressed by the project is appointment scheduling and management software

3.1.6 System Type

The type of software addressed by the project is: Real-time System, Simple Software and a Web Application

3.1.7 Case Tool Maturity

Case Tool Maturity	Very Low	Low	Average	High	Very High
Chart.io		**X**			
Visual Studio Code					**x**
Xampp					**x**
Bootstrap studio				**x**	
Discord			**x**		
Github					**x**
Word		**x**			

3.1.8 Case Tool Usage

3.1.8.1 Case Tool 1

Chart.io	Very Low	Low	Average	High	Very High
Requirements Analysis					**X**
Requirements Specifications					**X**
System Design			**X**		
Implementation and Integration		**X**			
Testing		**X**			

Visual Studio Home	Very Low	Low	Average	High	Very High
Requirements Analysis	**X**				
Requirements Specifications	**X**				
System Design					**X**
Implementation and Integration					**X**
Testing				**X**	

Xampp	Very Low	Low	Average	High	Very High
Requirements Analysis	**X**				
Requirements Specifications	**X**				
System Design					**X**
Implementation and Integration					**X**
Testing			**X**	**X**	

Bootstrap	Very Low	Low	Average	High	Very High
Requirements Analysis				**X**	
Requirements Specifications				**X**	
System Design	**X**				
Implementation and Integration	**X**				
Testing	**X**				

Discord	Very Low	Low	Average	High	Very High
Requirements Analysis					**X**
Requirements Specifications					**X**
System Design					**X**
Implementation and Integration					**X**
Testing					**X**

Github	Very Low	Low	Average	High	Very High
Requirements Analysis					**X**
Requirements Specifications					**X**
System Design					**X**
Implementation and Integration					**X**
Testing					**X**

Word	Very Low	Low	Average	High	Very High
Requirements Analysis			**X**		
Requirements Specifications			**X**		
System Design			**X**		
Implementation and Integration			**X**		
Testing			**X**		

3.2 System Size and Structure

3.2.1 Function Points

3.2.2 Lines of Code

Statistic	Value	Percentage
Number of source code lines	81641	81.70%
Number of blank lines	11716	11.73%
Number of comment lines	6559	6.57%
Number of mixed lines (code and comments)		

3.2.3 Modules or Classes

Complexity	Very Low	Low	Average	High	Very High	Total
Number of Modules/Classes			**X**			
3GL Modules to Support 4GL			**X**			

3.2.4 E-R Entities

Complexity	Very Low	Low	Average	High	Very High	Total
Number of Entities	**X**					**1**

3.2.5 Database Tables

Complexity	Very Low	Low	Average	High	Very High	Total
Number of Tables			**X**			**14**

3.2.6 Functions or Methods

Complexity	Very Low	Low	Average	High	Very High	Total
Number of Functions/Methods			**X**			

3.2.7 Algorithms

Complexity	Very Low	Low	Average	High	Very High	Total
Number of Algorithms		**X**				

3.2.8 Data Structures

Complexity	Very Low	Low	Average	High	Very High	Total
Number of Data Structures						

3.2.9 Input Screens

Complexity	Very Low	Low	Average	High	Very High	Total
Number of Input Screens			**X**			**16**

3.2.10 Queries

Complexity	Very Low	Low	Average	High	Very High	Total
Number of Queries				**X**		**30**

3.2.11 Reports

Complexity	Very Low	Low	Average	High	Very High	Total
Number of Reports		**X**				

3.2.12 Document Pages (per phase)

Development Phase	Number of Pages
Requirements Analysis	34
Requirements Specifications	36
System Design	64
Implementation and Integration	
Testing	

3.3 Constraints

3.3.1 Required Software Quality

Ο χρήστης δεν μας έχει ζητήσει κάποιο συγκεκριμένο μετρό ποιότητας.

3.3.2 Interconnection with Existing Systems

Το σύστημά μας δεν θα αλληλοεπιδράσει με κανένα άλλο τρίτο λογισμικό. Θα έχει όλες τις λειτουργίες ενσωματωμένες και θα είναι ενιαίο

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5. APPENDICES

Table 1. General software characteristics and their factor decomposition as defined by ISO 9126.

General Characteristic	Factors	Definition
Functionality	Suitability	Attributes of software that bear on the presence and appropriateness of set of functions for specified tasks. (ISO 9126: 1991, A.2.1.1)
	Accuracy	Attributes of software that bear on the provision of right or agreed results or effects. (ISO 9126: 1991, A.2.1.2)
	Interoperability	Attributes of software that bear on its ability to interact with specified systems. (ISO 9126: 1991, A.2.1.3)
	Compliance	Attributes of software that make the software adhere to application related standards or conventions or regulations in laws and similar prescriptions. (ISO 9126: 1991, A.2.1.4)
	Security	Attributes of software that bear on its ability to prevent unauthorized access, whether accidental or deliberate, to programs and data. (ISO 9126: 1991, A.2.1.5)
System reliability	Maturity	Attributes of software that bear on the frequency of failure by faults in the software. (ISO 9126: 1991, A.2.2.1)
	Fault tolerance	Attributes of software that bear on its ability to maintain a specified level of performance in cases of software faults or of infringement of its specified interface. (ISO 9126: 1991, A.2.2.2)
	Crash frequency	The number of the system crashes per unit of time.
	Recoverability	Attributes of software that bear on the capability to reestablish its level of performance and recover the data directly affected in case of a failure and on the time and effort needed for it. (ISO 9126: 1991, A.2.2.3)
Usability	Understandability	Attributes of software that bear on the users' effort for recognizing the logical concept and its applicability. (ISO 9126: 1991, A.2.3.1)
	Learnability	Attributes of software that bear on the users' effort for learning its application (for example, operation control, input, output). (ISO 9126: 1991, A.2.3.2)
	Operability	Attributes of software that bear on the users' effort for operation and operation control. (ISO 9126: 1991, A.2.3.3)
Efficiency	Time behavior	Attributes of software that bear on response and processing times and Attributes of software that bear on response and processing times and
	Resource behavior	Attributes of software that bear on the amount of resources used and the duration of such use in performing its function. (ISO 9126: 1991, A.2.4.2)
Maintainability	Analysability	Attributes of software that bear on the effort needed for diagnosis of deficiencies or causes of failures, or for identification of parts to be modified. (ISO 9126: 1991, A.2.5.1)

General Characteristic	Factors	Definition
	Changeability	Attributes of software that bear on the effort needed for modification, fault removal or for environmental change. (ISO 9126: 1991, A.2.5.2)
	Stability	Attributes of software that bear on the risk of unexpected effect of modifications. (ISO 9126: 1991, A.2.5.3)
	Testability	Attributes of software that bear on the effort needed for validating the modified software. (ISO 9126: 1991, A.2.5.4)
Portability	Adaptability	Attributes of software that bear on the opportunity for its adaptation to different specified environments without applying other actions or means than those provided for this purpose for the software considered. (ISO 9126: 1991, A.2.6.1)
	Installability	Attributes of software that bear on the effort needed to install the software in a specified environment. (ISO 9126: 1991, A.2.6.2)