Abstract

The thesis discuss about the development of SiluwedClub Admin Site Web Application. SiluwedClub.com is a system as the project to extend the functionalities of the former existing website Siluwed.com. SiluwedClub.com provides an attractive Internet environment for Wedding Services especially make-up artist seekers and the clients in order to conduct direct connection with each other.

The widespread use of information technology has enabled companies to provide different services to the community. The large deployment of wireless networks and internet connections enables the people to access, work, and even life with it. Thus, SiluwedClub.com is looking ahead to the future and has embraced internet connection to support the system.

The research method used to develop the project is Rapid Application Development (RAD). The RAD method enables the user client to get involved in the user requirement process which is done iteratively along the development phase (the spiral model). The reason to use the method is because the users/clients are uncertain of the exact requirements and therefore user involvement is required comprehensively for this project higher feasibility.

The project result is the development of the SiluwedClub.com web application. In this thesis it will be focused on the administrator site. It is implemented using such technology to enhance the functionalities of the existing system, Siluwed.com. SiluwedClub.com gives a great contribution for the wedding service especially the freelance and amateur make-up artist to find their clients and vice-versa.

Keywords

Web Application, Website, Internet, connection, administrator site.
PREFACE

The development of SiluwedClub Web Application – Admin Site started when the owner of the company Studio Ilusi Wedding, Felix Suwarno requested to have a social networking system which is aimed for the inexperienced make-up artists and the other freelancers who wants to get more networks and connections in order to get clients. The company itself has launched a website for promoting its wedding services, Siluwed.com. The new system developed is to enhance the previous existing system to satisfy the customers with the improved features of the related company.

I would like to give highest gratitude to everyone that has contributed to the completion of this thesis. First, I would like to express my gratitude to God, as His guides, blessings, and protection throughout the development of this thesis. Second, to my beloved parents, who have always supported and prayed for my success for this thesis and the future.

I also wants to thank to the following people for their support and contribution along the development of this thesis:

- Bina Nusantara University as the main place for getting the knowledge within this past 4(four) years.
- Ir. Tri A. Budiono. M.I.T. as the Program Manager of Computer Science major for International Undergraduate Program.
- Mr. Fredro Harjanto, M.Sc. as the team thesis supervisor.
- All the lecturers for sharing their knowledge during my study.
• All the members of my thesis team: Pandu Budihardja, Suwardi Nursalim, Bertie Tanuwijaya, Ronald Rosanto, and Insan Kusuma who has already share their knowledge with me and helping me out during the thesis completion process.

• All the staffs of Bina Nusantara International University who have supported in any way during the thesis.

• My family and colleagues who have given their supports direct or indirectly.

• Many others that I cannot mentioned but have significantly help the process as well.

This thesis is presented as an academic project based paper as the performance of significant and acceptable research and scholarly work, for obtaining the Sarjana degree at Computer Science program, Education Level Strata-1. Also, the thesis is offering solution to the problem of Siluwed. This thesis is primarily dedicated to the author in completing her study in Bina Nusantara University as one of the prerequisites to graduate.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>TITLE PAGE</th>
<th>CERTIFICATE OF APPROVAL</th>
<th>STATEMENT OF BOARD EXAMINERS</th>
<th>ABSTRACT</th>
<th>PREFACE</th>
<th>TABLE OF CONTENTS</th>
<th>LIST OF FIGURES</th>
<th>LIST OF TABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>..........................................................</td>
<td>..........................................................</td>
<td>..........................................................</td>
<td>..........</td>
<td>........</td>
<td>..........................................................</td>
<td>......................</td>
<td>......................</td>
</tr>
</tbody>
</table>

## CHAPTER 1. INTRODUCTION

1. Background ............................................. 1
2. Scope .................................................... 3
3. Aim and Benefit ........................................ 4
4. Structures .............................................. 5

## CHAPTER 2. THEORETICAL FOUNDATION

1. Theoretical Foundation ................................ 7
   1.1. Internet ........................................... 7
      1.1.1. TCP/IP .................................. 9
      1.1.2. ISP ....................................... 9
      1.1.3. DNS ...................................... 10
      1.1.4. URL ..................................... 11
      1.1.5. Web Server ................................. 12
         1.1.5.1. Apache ................................ 14
      1.1.6. Web Hosting ................................ 14
      1.1.7. Web Browser ................................ 15
         1.1.7.1. Internet Explorer ................. 15
      1.1.8. Web Application ........................... 16
         1.1.8.1. Website ................................ 16
      1.1.9. e-Commerce ................................ 17
         1.1.9.1. History ................................ 18
      1.2. Open Source .................................... 20
      1.3. PHP – PHP: Hypertext Preprocessor .......... 20
      1.4. Software Framework ............................. 21
         1.4.1. Code Igniter .............................. 22
            1.4.1.1. MVC Architecture ............... 22
         1.4.2. OOP-Object Oriented Programming ....... 24
      1.5. Database ....................................... 25
         1.5.1. MySQL .................................. 26
         1.5.2. ERD ..................................... 27
      1.6. Use Case Diagram ............................... 29
      1.7. Data Flow Diagram ............................. 33
      1.8. Java Script ................................... 34
      1.9. phpBB ......................................... 34
   2.2. Theoretical Frameworks ......................... 35
      2.2.1. RAD – Rapid Application Development .... 35
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2.1.1. Advantages of RAD</td>
<td>35</td>
</tr>
<tr>
<td>2.2.1.2. Disadvantages of RAD</td>
<td>36</td>
</tr>
<tr>
<td>CHAPTER 3. PROBLEM ANALYSIS</td>
<td>38</td>
</tr>
<tr>
<td>3.1. Company Profile</td>
<td>38</td>
</tr>
<tr>
<td>3.2. Current Condition</td>
<td>39</td>
</tr>
<tr>
<td>3.3. Existing Problem</td>
<td>39</td>
</tr>
<tr>
<td>3.4. Alternative Solution</td>
<td>40</td>
</tr>
<tr>
<td>3.5. Software Design</td>
<td>40</td>
</tr>
<tr>
<td>3.6. Web Application Flowchart.</td>
<td>41</td>
</tr>
<tr>
<td>CHAPTER 4. DESIGN OF THE PROPOSED SYSTEM</td>
<td>42</td>
</tr>
<tr>
<td>4.1. Web Application Architecture</td>
<td>42</td>
</tr>
<tr>
<td>4.2. Policy and Procedure</td>
<td>43</td>
</tr>
<tr>
<td>4.3. Web Application functionalities</td>
<td>44</td>
</tr>
<tr>
<td>4.4. Use Case Diagram</td>
<td>47</td>
</tr>
<tr>
<td>4.5. Use Case Narrative</td>
<td>49</td>
</tr>
<tr>
<td>4.6. Data Flow Diagram</td>
<td>74</td>
</tr>
<tr>
<td>4.6.1. Context Diagram</td>
<td>74</td>
</tr>
<tr>
<td>4.6.2. Data Flow Diagram Level 1</td>
<td>74</td>
</tr>
<tr>
<td>4.6.3. Data Flow Diagram Level 2</td>
<td>77</td>
</tr>
<tr>
<td>4.6.3.1. Admin</td>
<td>77</td>
</tr>
<tr>
<td>4.6.3.2. Member/User</td>
<td>78</td>
</tr>
<tr>
<td>4.6.3.3. News</td>
<td>79</td>
</tr>
<tr>
<td>4.6.3.4. Events</td>
<td>79</td>
</tr>
<tr>
<td>4.6.3.5. Advertisement</td>
<td>80</td>
</tr>
<tr>
<td>4.7. System Flowchart</td>
<td>82</td>
</tr>
<tr>
<td>4.8. Web Application Class Diagram</td>
<td>86</td>
</tr>
<tr>
<td>4.9. Entity Relationship Diagram</td>
<td>88</td>
</tr>
<tr>
<td>4.10. Data Dictionary</td>
<td>89</td>
</tr>
<tr>
<td>4.11. User Interface Design Plan</td>
<td>91</td>
</tr>
<tr>
<td>CHAPTER 5. TESTING AND IMPLEMENTATION</td>
<td>95</td>
</tr>
<tr>
<td>5.1. System Specification</td>
<td>95</td>
</tr>
<tr>
<td>5.1.1. Hardware and Software Specification for Development</td>
<td>95</td>
</tr>
<tr>
<td>5.1.2. Hardware and Software Specification for Usage</td>
<td>96</td>
</tr>
<tr>
<td>5.2. Operational Procedure</td>
<td>96</td>
</tr>
<tr>
<td>5.3. System Implementation</td>
<td>98</td>
</tr>
<tr>
<td>5.4. Testing</td>
<td>99</td>
</tr>
<tr>
<td>5.4.1. Speed Test</td>
<td>107</td>
</tr>
<tr>
<td>CHAPTER 6. DISCUSSION</td>
<td>108</td>
</tr>
<tr>
<td>6.1. Discussion Summary</td>
<td>108</td>
</tr>
<tr>
<td>6.2. Results</td>
<td>109</td>
</tr>
<tr>
<td>6.3. Survey</td>
<td>110</td>
</tr>
<tr>
<td>CHAPTER 7. CONCLUSION AND RECOMMENDATION</td>
<td>113</td>
</tr>
<tr>
<td>7.1. Conclusion</td>
<td>113</td>
</tr>
<tr>
<td>7.2. Recommendation</td>
<td>115</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>116</td>
</tr>
<tr>
<td>APPENDIX</td>
<td>117</td>
</tr>
<tr>
<td>CURRICULUM VITAE</td>
<td>129</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

Figure 2.1. Illustration of how Web Server works………………………………………………13
Figure 2.2. Chart of Estimated U.S. Retail Commerce Sales Growth…………………………19
Figure 2.3. MVC Pattern………………………………………………………………………………23
Figure 2.4. An actor in a use case diagram…………………………………………………………30
Figure 2.5. Use cases in a use case diagram…………………………………………………………31
Figure 2.6. A Use case diagram depicting the system boundary of a clinic application..32
Figure 3.1. Organizational Chart of Studio Ilusi…………………………………………………39
Figure 3.2. Web Application Flowchart – Admin Site………………………………………………41
Figure 4.1. Administrator Subsystem Use-Case Diagram……………………………………47
Figure 4.2. Super Admin Subsystem Use-Case Diagram………………………………………48
Figure 4.3. Profile Subsystem Use-Case Diagram………………………………………………48
Figure 4.4. Forum Subsystem Use-Case Diagram………………………………………………49
Figure 4.5. SiluwedClub Web Application Context Diagram…………………………………74
Figure 4.6. Data Flow Diagram Level 1 – Manage Admin………………………………………74
Figure 4.7. Data Flow Diagram Level 1 – Manage Member(User)………………………………75
Figure 4.8. Data Flow Diagram Level 1 – Manage News………………………………………75
Figure 4.9. Data Flow Diagram Level 1 – Manage Events……………………………………76
Figure 4.10. Data Flow Diagram Level 1 – Manage Advertisement…………………………76
Figure 4.11. Data Flow Diagram Level 2 – Admin Login ………………………………………77
Figure 4.12. Data Flow Diagram Level 2 – Register New Admin………………………………77
Figure 4.13. Data Flow Diagram Level 2 – Admin(View List/Profile, Edit, Delete, Change Password)……………………………………………………………………………………………………77
Figure 4.14. Data Flow Diagram Level 2 – Register New Member……………………………78
Figure 4.15. Data Flow Diagram Level 2 – Member(View List/Profile, Edit, Delete, Approve, Reject)……………………………………………………………………………………………………78
Figure 4.16. Data Flow Diagram Level 2 – Add News……………………………………………79
Figure 4.17. Data Flow Diagram Level 2 – News(View List/Details, Edit, Delete, Approve, Reject)……………………………………………………………………………………………………79
Figure 4.18. Data Flow Diagram Level 2 – Add Events…………………………………………79
Figure 4.19. Data Flow Diagram Level 2 – Events(View List/Details, Edit, Delete, Approve, Reject)……………………………………………………………………………………………………80
Figure 4.20. Data Flow Diagram Level 2 – Add Advertisement……………………………80
Figure 4.21. Data Flow Diagram Level 2 – Ads(View List, Delete, Approve, Reject)…81
Figure 4.22. Siluwed Web Application System Flowchart – Admin…………………………82
Figure 4.23. Siluwed Web Application System Flowchart – User/Members……………………83
Figure 4.24. Siluwed Web Application System Flowchart – News/Events…………………84
Figure 4.25. Siluwed Web Application System Flowchart – Advertisement………………85
Figure 4.26. Class Diagram Controller……………………………………………………………86
Figure 4.27. Class Diagram Model………………………………………………………………87
Figure 4.28. SiluwedClub Entity Relationship Diagram………………………………………..88
Figure 4.29. SiluwedClub UI Design – Login…………………………………………………….91
Figure 4.30. SiluwedClub UI Design – Home……………………………………………………91
Figure 4.31. SiluwedClub UI Design – Admin Menu……………………………………………92
Figure 4.32. SiluwedClub UI Design – View Admin……………………………………………92
Figure 4.33. SiluwedClub UI Design – View Profile........................................93
Figure 4.34. SiluwedClub UI Design – Register Admin................................93
Figure 4.35. SiluwedClub UI Design – View User List..............................94
Figure 4.36. SiluwedClub UI Design – View Unapproved User List........94
LIST OF TABLES

Table 1.1. Team Job Division and Description ........................................... 3
Table 4.1. Admin Log-in Use-Case Narrative ............................................. 50
Table 4.2. Admin Change Password Use-Case Narrative ............................... 51
Table 4.3. View Profile Use-Case Narrative .............................................. 51
Table 4.4. Edit Profile Use-Case Narrative ............................................... 52
Table 4.5. View Admin List Use-Case Narrative ........................................ 53
Table 4.6. Delete Admin Use-Case Narrative ............................................. 54
Table 4.7. Edit Admin Use-Case Narrative ................................................. 55
Table 4.8. View Admin Profile Use-Case Narrative .................................... 56
Table 4.9. Register Admin Use-Case Narrative .......................................... 57
Table 4.10. View User List Use-Case Narrative .......................................... 58
Table 4.11. Edit User/News/Events Use-Case Narrative ............................... 59
Table 4.12. View User Profile Use-Case Narrative ...................................... 60
Table 4.13. Register User Use-Case Narrative ........................................... 61
Table 4.14. View Unapproved User List Use-Case Narrative .......................... 62
Table 4.15. View Unapproved User Profile Use-Case Narrative ...................... 62
Table 4.16. View News/Events List Use-Case Narrative ............................... 63
Table 4.17. Read News/Events Use-Case Narrative ..................................... 64
Table 4.18. Add News/Events Use-Case Narrative ...................................... 65
Table 4.19. View Unapproved News/Events List Use-Case Narrative ............... 66
Table 4.20. Read Unapproved News/Events Details Use-Case Narrative ........... 67
Table 4.21. View Advertisement List Use-Case Narrative ............................. 68
Table 4.22. Add Advertisement Use-Case Narrative ..................................... 69
Table 4.23. View Unapproved Advertisement List Use-Case Narrative ............. 70
Table 4.24. Approve Request Use-Case Narrative ....................................... 71
Table 4.25. Reject Request Use-Case Narrative .......................................... 72
Table 4.26. Delete User/News/Events/Advertisement Use-Case Narrative ........ 73
Table 4.27. View Web Statistics Use-Case Narrative .................................... 73
Table 4.28. Admin Table ........................................................................... 89
Table 4.29. Profile Table ........................................................................... 89
Table 4.30. News Table ............................................................................. 90
Table 4.31. Events Table ........................................................................... 90
Table 4.32. Ads Table .............................................................................. 90
Table 5.1. SiluwedClub Web Application Test Plan ..................................... 106
Table 5.2. SiluwedClub Admin Site – Speed Test ....................................... 107