

# Software Engineering Summer 2023

## Milestone 1

Art Villa

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### **History Table**

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## **1. Executive Summary**

Art Villa is a simple web application designed to provide an online social media network for people who want to display their artwork. Art Villa encourages public posting of artwork, thus users who register have their accounts public by default. Registered users can interact with each other's posts and purchase artwork from one another. Additionally art contests are held each month, where the winner can receive a monetary prize. Art Villa is a website that allows artists to have an engaging social media experience whilst showcasing and selling their artwork at the same time.

## **2. Use Cases**

### **1) Users**

#### **a) Casual Unregistered User (Bob)**

Bob liked to view artwork for inspiration for his projects. Bob can search through Art Villa and find posted artwork that he enjoys viewing.

#### **b) Casual Registered User (James)**

James loves to showcase his artwork and view artwork from other people online. James can register for an account, go to the posting page, post his artwork, and watch the interactions on his post. Additionally, James can view other users' posts and give a Like or Comment.

#### **c) Selling Registered User (Maria)**

Maria wants to showcase her artwork and raise some money for her career. Maria can register for an account, go to the posting page, set her artwork to be sold, post her artwork, wait for a buyer to purchase her item, then message the buyer on how they would want the item delivered, and then deliver it.

#### **d) Buying Registered User (Erica)**

Erica loves buying art for her art collections. Erica can register for an account, view a sellable art post, purchase it, then message the seller on how they would want the item to be delivered, and then receive it.

**e) Art Competitor Registered User (Patricia)**

Patricia is a very competitive artist and winning a public contest gives her a special thrill. She can register for an account, and if an art contest is open, go to a contest posting page, pay a contest fee, enter an artwork to be posted in the contest, wait for the contest results, and view the results of the contest and her contest post.

**f) Dispute Reporting Registered User (Ocelia)**

Ocelia sees another user is harassing her, engaging in underhanded/fraudulent practices, or is posting inappropriate content, she can contact the site admins to mention her dispute. The site admins would investigate the matter, possibly inquire more from Ocelia about the situation, and ultimately resolve the issue.

**2) Admins**

**a) Contest Creator Admin (Regina)**

Regina's role in the company is to create art contests. Regina's account is created as a super user within the system. Regina can log in, go to the contest creating page, create a post with a picture and description, and post it.

**b) Contest Judge Admin (Wesley)**

Wesley's role in the company is to manage art contests. Wesley's account is created as a super user within the system. Wesley can log in, go to the contest viewing page, view the latest contest, view the posts of each entered artwork, and select a winner.

**c) Dispute Admin (Randall)**

Randall sees a contact message from a registered user about a dispute. Randall's account is created as a super user within the system. Randall can log in, inquire more about the dispute, investigate all parties of the dispute, and resolve the dispute by a warning, correction, and/or termination.

**d) Maintenance Admin (George)**

George has been tasked to maintain the website to make sure functions are working as they should. George's account is created as a super user within the system. Assuming the following are abiding by moral and compliance standards, George can view the numbers and tables in the database for any anomalies as well as view all monetary and non-monetary transactions (without seeing personal information such as passwords or credit cards). If George identifies an error, he can help implement a plan to fix it.

### **3. Data Structures and Entities**

**Account** - An account associated with a registered user.

**Admin** - A user who has been registered internally as an admin. A sub-entity of registered user.

**Chat** - A list of messages between two registered users.

**Comment** - A message in response to a post or another comment.

**Contact Us Message List** - A list of all contact us messages.

**Contact Us Message** - A private message sent from one registered user to the contact us message list. A sub-structure of message.

**Contest** - A competition of various contest posts where a winner is determined.

**Contest Award** - An award given to the winner of a contents.

**Contest Post** - A post to be entered in a contest.

**Contest Transaction** - A transaction involving entering or winning a contest. A sub-structure of transaction.

**Direct Message** - A message from one registered user to another. A sub-structure of message.

**Like** - An object indicating positivity towards a post.

**Message** - A private message from one registered user.

**Post** - A public or semi public piece of content showcasing a message or artwork.

**Post Transaction** - A transaction involving a sellable post. A sub-structure of transaction.

**Registered User** - A user entering the website who has been registered.

**Transaction** - A paid transaction between two registered users.

**Unregistered User** - A user entering the website who is not registered.

## **4. Functional Requirements**

### **Account**

1. Accounts shall be able to be viewed by an Unregistered User.
2. Accounts shall be able to be viewed by a Registered User.
3. Accounts shall be able to be viewed by an Admin.
4. Accounts shall have an associated Registered User.
5. Accounts shall have a username.
6. Accounts shall have an email.
7. Accounts shall have a password.
8. Accounts shall have a bio.
9. Accounts shall have a profile picture.
10. Accounts shall be able to have an email modified.
11. Accounts shall be able to have a password modified.
12. Accounts shall be able to have a profile picture modified.
13. Accounts shall be able to have a bio modified.
14. Accounts shall be able to have a profile picture modified.
15. Accounts shall show the Register User's most recent posts.

### **Admin**

16. Admins shall be able to edit their account.
17. Admins shall be able to view a post.
18. Admins shall be able to view a contest post.
19. Admins shall be able to Like a post.



20. Admins shall be able to Comment on a post.
21. Admins shall be able to create a post.
22. Admins shall be able to edit a post.
23. Admins shall be able to delete a comment on their post.
24. Admins shall be able to direct message another registered user.
25. Admins shall be able send a contact us message.
26. Admins shall be able to view all chats with other registered users.
27. Admins shall be able to view a chat with another registered user.
28. Admins shall be able to publish a contest post.
29. Admins shall be able to sell artwork from their own post.
30. Admins shall be able to buy artwork from a registered user's post.
31. Admins shall be able to create a contest.
32. Admins shall be able to modify a contest.
33. Admins shall be able to delete a comment on a post.
34. Admins shall be able to delete a post.
35. Admins shall be able to terminate an account.
36. Admins shall be able to view data tables.
37. Admins shall be able to view transactions.

## **Chat**

38. Chats shall be able to be viewed by an associated Registered User.
39. Chats shall be able to be viewed by an Admin.
40. Chats shall be able to appended by direct messages.

41. Chats shall be able to be created a Registered User.

42. Chats shall be able to be created an Admin.

### **Comment**

43. Comments shall be able to be viewed by an Unregistered User.

44. Comments shall be able to be viewed by a Registered User.

45. Comments shall be able to be viewed by an Admin.

46. Comments shall be able to be deleted by their post's Registered User.

47. Comments shall be able to be deleted by an Admin.

48. Comments shall be able to created by a Registered User.

49. Comments shall be able to created by an Admin.

### **Contact Us Message List**

50. Contact Us Message List shall be able to be created by a Registered User.

51. Contact Us Message List shall be able to be created by an Admin.

52. Contact Us Message List shall be able to be viewed by an Admin.

### **Contact Us Message**

53. Contact Us Messages shall be able to be created by a Registered User.

54. Contact Us Messages shall be able to be created by a Registered User.

55. Contact Us Messages shall be able to be viewed by an Admin.

### **Contest**

- 56. Contests shall be able to be created by an Admin.
- 57. Contests shall be able to be viewed by an Unregistered User.
- 58. Contests shall be able to be viewed by a Registered User.
- 59. Contests shall be able to be viewed by an Admin.
- 60. Contests shall be able to be appended by contest posts.
- 61. Contests shall be able to be ended by an Admin.

### **Contest Award**

- 62. Contest awards shall be able to be created by an Admin.
- 63. Contest awards shall be able to be viewed by an Admin.
- 64. Contest awards shall be able to be viewed by an associated Registered User.

### **Contest Post**

- 65. Contest posts can be created by a Registered User.
- 66. Contest posts shall be able to be created by an Admin.
- 67. Contest posts shall be able to be viewed by an Admin.
- 68. Contest posts shall be able to be awarded by an Admin.
- 69. Contest posts shall be able to be liked by an Admin.
- 70. Contest posts shall be able to be commented by an Admin.
- 71. Contest posts shall be able to be deleted by an Admin.

### **Contest Transaction**

- 72. Contest transactions shall be able to be created by an Admin.

73. Contest transactions shall be able to be viewed by an Admin.

74. Contest transactions shall be able to be viewed by an associated Registered User.

### **Direct Message**

75. Direct messages shall be able to be created by a Registered User.

76. Direct messages shall be able to be created by an Admin.

77. Direct messages shall be able to be viewed by an associated Registered User.

78. Direct messages shall be able to be viewed by an Admin.

### **Like**

79. Likes shall be able to be created by a Registered User.

80. Likes shall be able to be viewed by an Unregistered User.

81. Likes shall be able to be viewed by an Registered User.

82. Likes shall be able to be viewed by an Admin.

### **Message**

83. Messages shall be able to be created by a Registered User.

84. Messages shall be able to be viewed by an Admin.

### **Post**

85. Posts shall be able to be created by a Registered User.

86. Posts shall be able to be created by an Admin.

- 87. Posts shall be able to be viewed by an Unregistered User.
- 88. Posts shall be able to be viewed by a Registered User.
- 89. Posts shall be able to be viewed by an Admin.
- 90. Posts shall be able to be edited by an associated Registered User.
- 91. Posts shall be able to have a comment deleted by an associated Registered User.
- 92. Posts shall be able to have a comment deleted by an Admin.
- 93. Posts shall be able to be liked by a Registered User.
- 94. Posts shall be able to be liked by an Admin.
- 95. Posts shall be able to be commented on by a Registered User.
- 96. Posts shall be able to be commented on by an Admin.
- 97. Posts shall be able to be deleted by an associated Registered User.
- 98. Posts shall be able to be deleted by an Admin.

### **Post Transaction**

- 99. Post transactions shall be able to be created by a Registered User.
- 100. Post transactions shall be able to be viewed by an Associated Registered User.
- 101. Post transactions shall be able to be viewed by an Admin.

### **Registered User**

- 102. Registered users shall be able to create posts.
- 103. Registered users shall be able to like posts.
- 104. Registered users shall be able to comment on posts.
- 105. Registered users shall be able to create contest posts.

- 106. Registered users shall be able to buy artwork from sellable posts.
- 107. Registered users shall be able to direct message other users.
- 108. Registered users shall be able to contact us message admins.
- 109. Registered users shall be able to view posts.
- 110. Registered users shall be able to view contest posts.
- 111. Registered users shall be able to view contest results..
- 112. Registered users shall be able to view the number of likes on posts.
- 113. Registered users shall be able to view the comments on posts.
- 114. Registered users shall be able to view a Register Users' account page.
- 115. Registered users shall be able to edit posts.
- 116. Registered users shall be able to edit their account.
- 117. Registered users shall be able to sell artwork from a post.
- 118. Registered users shall be able to unlike posts.
- 119. Registered users shall be able to delete their comment on a post.
- 120. Registered users shall be able to delete their account.

### **Transaction**

- 121. Transactions shall be able to be created by a Registered User.
- 122. Transactions shall be able to be created by an Admin.
- 123. Transactions shall be able to be viewed by an associated Registered User.
- 124. Transactions shall be able to be viewed by an Admin.

### **Unregistered User**

- 125. Unregistered users shall be able to view posts.
- 126. Unregistered users shall be able to view contest posts.
- 127. Unregistered users shall be able to view the number of likes on a post.
- 128. Unregistered users shall be able to view the comments on a post.
- 129. Unregistered users shall be able to view contest results.

## **5. Non-Functional Requirements**

### **Performance**

1. Results from user actions shall be handled within a certain speed (1ms).

### **Coding Standards**

2. Code shall be easily readable and understandable.
3. Code shall be neat and well-formatted
4. Code shall have a consistent format for maintenance.
5. Code shall invoke code reuse when appropriate.
6. Commenting on obvious things shall be avoided.

### **Look and Feel**

7. User interface shall have an engaging and pleasing look.
8. User interface shall be consistent throughout each section.
9. User interface shall look professional and functional.
10. Results from user actions shall be smooth without delay.



## **6. Technological Stack**

**Server Host:** AWS

**Operating System:** Ubuntu

**Database:** MySQL

**Web Server:** NGINX

**Server Side Language:** Express

**Additional Technologies:**

**Web Framework:** React

**IDE:** VS Code

**Database Design Tool:** MySQL Workbench

## **7. Final Note**

On a final note, this is only the first iteration of the documentation for Art Villa. The above may be subject to change.