

# T1A3 – Terminal Application Horse Stable Management App

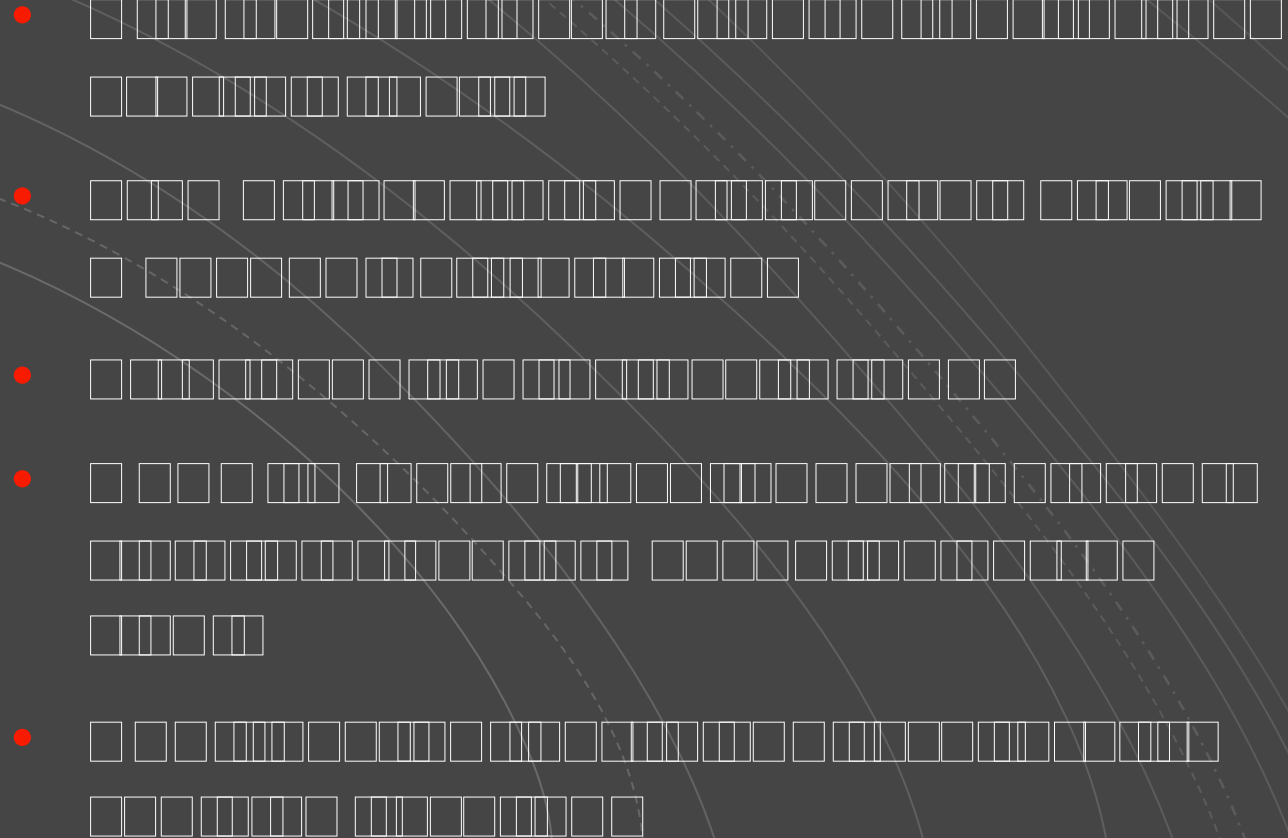
# Purpose

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# Feature 1: Main Menu

src > main.py > ...

```
1  import os
2  import horse_manager
3  import race_logs_manager
4
5  # Main menu for application
6  def main():
7      os.system('clear') # Clears console when called
8      while True:
9          print("-- Horse Stable Management App --")
10         print("1. Add horse")
11         print("2. Remove horse")
12         print("3. Update horse details")
13         print("4. View horse details")
14         print("5. Add race results")
15         print("6. View race logs")
16         print("7. Exit app")
17
18         choice = input("Choose an option: ")
19
20         if choice == '1':
21             horse_manager.add_horse()
22         elif choice == '2':
23             horse_manager.remove_horse()
24         elif choice == '3':
25             horse_manager.update_horse_details()
26         elif choice == '4':
27             horse_manager.view_all_horses()
28         elif choice == '5':
29             race_logs_manager.add_race_log()
30         elif choice == '6':
31             race_logs_manager.view_race_logs()
32         elif choice.lower() == '7':
33             print("Goodbye!")
34             exit()
35         else:
36             print("Invalid choice, please try again!")
37
38 if __name__ == "__main__":
39     main()
```



# Feature 2: Add a horse


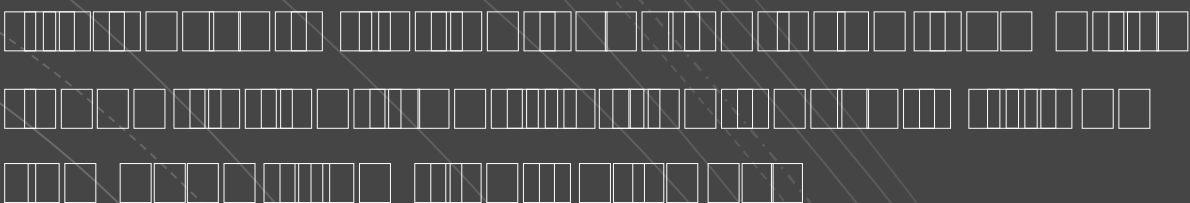

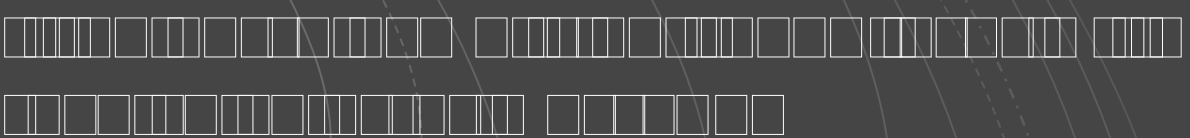
src > horse\_manager.py > ...

```
1 import json
2 from utility import input_int
3 from validator import validate_horse
4
5 # Add new horse to the database
6 def add_horse():
7     name = input("Enter horse name: ")
8     age = input_int("Enter horse age: ")
9     health = input("Enter horse health status: ")
10    diet = input("Enter horse diet: ")
11    new_horse = {"Name": name, "Age": age, "Health": health, "Diet": diet}
12
13    # Validate the data entry from the user to ensure that it matches
14    # against the specified schema, else return error message
15    if validate_horse(new_horse):
16        with open('data.json', 'r+') as file:
17            data = json.load(file)
18            data['horses'].append(new_horse)
19            file.seek(0)
20            file.truncate()
21            json.dump(data, file)
22    else:
23        print("Invalid horse data")
```



# Feature 3: Remove a horse

```
# Remove a horse from the database after checking the database
# for a matching horse name, else return error message
def remove_horse():
    horse_name = input("Enter the name of the horse to remove: ")
    with open('data.json', 'r+') as file:
        data = json.load(file)
        horses = data['horses']
        for horse in horses:
            if horse['Name'] == horse_name:
                horses.remove(horse)
                file.seek(0)
                file.truncate()
                json.dump(data, file)
                print(f"Horse {horse_name} removed successfully!")
                return
    print(f"No horse found with the name {horse_name}.")
```

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## Feature 4: Update horse details

```
# Provide option to update horse details in the database
# which will overwrite existing information if match found
def update_horse_details():
    horse_name = input("Enter the name of the horse to update: ")
    with open('data.json', 'r+') as file:
        data = json.load(file)
        horses = data['horses']
        for horse in horses:
            if horse['Name'] == horse_name:
                print("Enter new details (or press Enter to skip updating):")
                name = input(f"Name (current: {horse['Name']}): ")
                age = input_int(f"Age (current: {horse['Age']}): ")
                health = input(f"Health (current: {horse['Health']}): ")
                diet = input(f"Diet (current: {horse['Diet']}): ")

                if name: horse['Name'] = name
                if age: horse['Age'] = int(age)
                if health: horse['Health'] = health
                if diet: horse['Diet'] = diet

                file.seek(0)
                file.truncate()
                json.dump(data, file)
                print(f"Horse {horse_name} details updated successfully!")
            return
    print(f"No horse found with the name {horse_name}.")
```

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# Feature 5: View horse details

```
# Option for user to view all horses stored in the database
def view_all_horses():
    with open('data.json', 'r') as file:
        data = json.load(file)
        for horse in data['horses']:
            print(horse)
```

- |    |        |     |        |       |               |            |            |        |
|----|--------|-----|--------|-------|---------------|------------|------------|--------|
| id | name   | age | gender | color | breed         | owner      | location   | status |
| 1  | Archer | 5   | Male   | Bay   | Thoroughbred  | John Doe   | California | Active |
| 2  | Blaze  | 3   | Female | Black | Quarter Horse | Jane Smith | Texas      | Active |
- |    |          |     |        |       |             |             |          |         |
|----|----------|-----|--------|-------|-------------|-------------|----------|---------|
| id | name     | age | gender | color | breed       | owner       | location | status  |
| 3  | Champion | 7   | Male   | White | Paint Horse | Bob Johnson | Oklahoma | Retired |
| 4  | Dancer   | 4   | Female | Gray  | Andalusian  | Alice Brown | Spain    | Active  |
- |    |        |     |        |       |               |               |          |        |
|----|--------|-----|--------|-------|---------------|---------------|----------|--------|
| id | name   | age | gender | color | breed         | owner         | location | status |
| 5  | Empire | 6   | Male   | Red   | Shetland Pony | Charlie Davis | Scotland | Active |
| 6  | Fusion | 2   | Female | Blue  | Mini Horse    | Diana Evans   | Florida  | Active |



# Feature 6: Add race results

src >  race\_logs\_manager.py > ...

```
1 import json
2 from utility import input_date
3 from validator import validate_race_log
4
5 # Allow user to add race results which will be stored in json file
6 def add_race_log():
7     horse_name = input("Enter horse name: ")
8     race_date_obj = input_date("Enter race date (DD-MM-YYYY): ") # Returns a datetime.date object
9     race_date = race_date_obj.strftime('%d-%m-%Y') # Converts the datetime.date object to a string
10    race_result = input("Enter race result: ")
11
12    new_log = {"HorseName": horse_name, "RaceDate": race_date, "RaceResult": race_result}
13
14    # Validate the data entry from the user to ensure that it matches
15    # against the specified schema, else return error message
16    if validate_race_log(new_log):
17        with open('data.json', 'r+') as file:
18            data = json.load(file)
19            data['race_logs'].append(new_log)
20            file.seek(0)
21            file.truncate()
22            json.dump(data, file)
23    else:
24        print("Invalid race log")
```

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# Feature 7: View race logs

```
# Display race logs to user from the json file database
def view_race_logs():
    with open('data.json', 'r') as file:
        data = json.load(file)
        for log in data['race_logs']:
            print(log)
```





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| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
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| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
- |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
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| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

# Development/ Implementation

- ▼ For project management I utilised the Trello's online platform. I created a workspace to input all the tasks that I needed to do to complete the assignment. Tasks were placed in either the To-Do, doing, next up, or end tasks section and was updated regularly. Under the define features section of the trello board I worked through each feature by creating a checklist of tasks required to be completed to have the feature implemented. Once all features were completed, I was able to move the status of feature implementation into the 'Done' section of the Trello board.

# Challenges



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# Favorite parts



- A horizontal sequence of 18 small white squares.
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# Ethical Issues



Thank you