

User Manual: Art Dealer Game

An Interactive Educational Game for K-8 Students

Prepared by: [Group: -2]

Project Repository: <https://github.com/AjayGopavarapu/THE-ART-DEALER-GAME.git>

Version: 1.0

TABLE OF CONTENTS

Introduction.....	3
Installation and Setup.....	3
Game Rules and Gameplay Instructions	4
Testing the Game	10
Troubleshooting and FAQs	10
Credits and Acknowledgments	11
Credits and Acknowledgments	11
Conclusion	11

Introduction

The **Art Dealer Game** is an engaging educational tool designed to help K-8 students improve their computational thinking, logical reasoning, and mathematics skills. This game simulates an art dealer's world where students play the role of gallery owners who must identify patterns from a deck of cards, representing paintings that the dealer is interested in purchasing. The game is thoughtfully designed to cater to three different levels—K-2, Grades 3-5, and Grades 6-8—ensuring that students of varying age groups and learning stages are appropriately challenged.

For younger students (K-2), the game introduces simple patterns like recognizing colors or card ranks, promoting early problem-solving and observational skills. As students advance to Grades 3-5, the game increases in complexity, introducing mathematical concepts such as prime numbers and sums, helping children strengthen their number sense. By Grades 6-8, the game becomes even more challenging, incorporating complex card patterns inspired by combinations used in poker, such as a Full House or cards that add up to prime numbers. This progression ensures that students are consistently building on their foundational skills in an intuitive and fun manner.

The game offers both single-player and multiplayer modes, encouraging individual critical thinking as well as collaborative problem-solving in a team environment. The Art Dealer Game is designed not only to make learning enjoyable but also to promote a strong grasp of important mathematical and computational concepts. With clear instructions and an easy-to-use interface, the game is accessible to students and teachers alike, providing an engaging learning experience through gameplay.

Installation and Setup

Follow these steps to download and run the **Art Dealer Game** on your computer.

1. Download the Game

- a. Visit the repository link provided by your instructor (e.g., on GitHub).
- b. Click on the green button labeled "Code" and select "Download ZIP."

- c. Save the ZIP file to a location on your computer, such as the desktop or a folder of your choice.

2. Extract the ZIP File

- a. Once the ZIP file is downloaded, right-click on the file and choose "Extract All."
- b. Choose the destination folder where you want the game files to be extracted. After extraction, you will see a new folder containing the game files.

3. Install Python (If not already installed)

- a. The game requires Python to run. If you don't have Python installed, follow these steps:
 - i. Go to [Python's official website](#) and download the latest version of Python.
 - ii. Run the installer and make sure to check the box labeled "Add Python to PATH."
 - iii. Follow the on-screen instructions to complete the installation.

4. Run the Game

- a. Open the folder where you extracted the game files.
- b. Find the file named final.py.
- c. Double-click the file to start the game. If the game doesn't start, right-click the file and select "Open With" -> "Python."

5. How to Play

- a. Upon launching the game, you will be prompted to select a grade level.
- b. After selecting the grade level, follow the on-screen instructions to choose cards or guess patterns. The game will guide you step by step, whether you are in single-player or multiplayer mode.

Game Rules and Gameplay Instructions

Objective:

The Art Dealer Game is designed to help students learn computational thinking and pattern recognition through a fun and interactive card-based game. The aim is to identify specific patterns that the "art dealer" (the game software) is interested in, based on a set of cards presented to the player.

Grade Levels and Difficulty:

There are three levels of the game, each designed for different age groups with increasing complexity:

K-2: Simple patterns like all red cards, all black cards, or all hearts.

Grades 3-5: More advanced patterns, including prime numbers, cards that add up to a certain value, or combinations like an Ace and a Black Jack.

Grades 6-8: Complex patterns that resemble poker hands, like a Full House, or patterns where cards add up to a prime number.

Step-by-Step Instructions:

Step 1: Start the Game

Once you've downloaded the game from the repository (refer to Installation and Setup), open the program by double-clicking on the .py file.

Step 2: Select Grade Level

After starting the game, the first prompt will ask you to select a grade level by typing the corresponding number for:

1 for K-2

2 for Grades 3-5

3 for Grades 6-8

Simply type the number based on the age group of the student, and the game will automatically adjust to the appropriate difficulty level.

Step 3: Select Game Mode

You will then be asked to choose between two game modes:

1 for Single-Player

2 for Multiplayer

In Single-Player mode, you will play against the dealer (the game software). In Multiplayer mode, one player selects a pattern for the other player to guess.

Step 4: Card Selection Process

The game will now present you with a set of cards, which will vary based on the grade level. The number of cards and the pattern complexity will depend on the grade level selected.

For each turn:

The cards will be displayed in a list format, showing both the number/face (e.g., 4, K, A) and the suit (e.g., Spades, Hearts).

Example of how cards will appear on the screen: ['8 Clubs', '5 Diamonds', '10 Hearts', '7 Clubs', 'A Hearts']

To select a card:

Type the card number followed by its suit. For example, to select "8 of Clubs," type 8 Clubs.

The game will confirm your selection and update the remaining available cards. Continue until you have selected all the required cards for that round.

Step 5: Guess the Pattern

In Single-Player mode, after selecting the cards, the game will prompt you to guess the pattern from a list of possible patterns.

In Multiplayer mode, Player 2 will be asked to guess the pattern based on the cards laid out by Player 1.

Step 6: Pattern Clues (Optional)

For each grade, the game provides clues to help the player understand the pattern. For example:

In K-2, clues might say "Are all the cards red?" or "Are all the cards hearts?"

In Grades 3-5, you might be asked, "Do the numbers add up to a prime number?" or "Do you see an Ace and a Jack of Spades?"

In Grades 6-8, the clue might say, "Are all cards the same suit?" or "Do you have a Full House (three of one card, two of another)?"

Step 7: Game Feedback

Correct Guess: If your guess matches the dealer's pattern, celebratory balloons and flowers will appear on the screen, indicating that you've won the round.

Example of a correct guess: “Correct! You matched the pattern: All Cards Are Spades



Incorrect Guess: If your guess is wrong, the game will provide feedback with sad emojis and display the correct pattern.

Example of an incorrect guess: “Sorry, the correct pattern was Cards Adding to a Prime Number. Better luck next time! 😞 😞 😞”

Step 8: Play Again

Once the game round ends, you’ll be prompted with the option to play again:

Enter y to restart the game from Step 2, or n to exit the game.

The game will continue in a loop until the player chooses to exit.

Sample k-2 grade game output: -

```

=====
      ♥ ART DEALER GAME ♦
=====
      ♦ Welcome to the Art Dealer Game! ♦
Get ready to guess which paintings the dealer is interested in!
=====
♦ ♥ ♦ ♦

Select the grade level:
1. K-2
2. Grades 3-5
3. Grades 6-8
Enter the corresponding number for the grade level: 1
Starting game at level: K-2
Welcome to the K-2 Art Dealer Game!
The dealer is looking for a pattern. Try to guess it!
Guess #1: Choose a pattern from ['All Red Cards', 'All Black Cards', 'All Hearts', 'All Queens'] or type 'quit' to exit: All
1 Red Cards
Incorrect guess.
Guess #2: Choose a pattern from ['All Red Cards', 'All Black Cards', 'All Hearts', 'All Queens'] or type 'quit' to exit: All
1 black cards
Incorrect guess.
Guess #3: Choose a pattern from ['All Red Cards', 'All Black Cards', 'All Hearts', 'All Queens'] or type 'quit' to exit: All
1 queens

Congratulations! You guessed correctly!
🎈🎈🎈🎈🌸🌸🌸
Balloons and flowers everywhere! You are the winner!
🎈🎈🎈🎈🌸🌸🌸

Do you want to play again? (y/n): 

```

Sample 3 - 5 grade game output: -

```

Do you want to play again? (y/n): y
Select the grade level:
1. K-2
2. Grades 3-5
3. Grades 6-8
Enter the corresponding number for the grade level: 2
Starting game at level: Grades 3-5
Welcome to the Grades 3-5 Art Dealer Game!
The dealer is looking for a pattern. Try to guess it!
Your cards to choose from: ['A Spades', '5 Diamonds', '2 Hearts', 'K Clubs']
Select card #1 from ['A Spades', '5 Diamonds', '2 Hearts', 'K Clubs'] (e.g., '4 Spades'): A Spades
Select card #2 from ['5 Diamonds', '2 Hearts', 'K Clubs'] (e.g., '4 Spades'): 5 Diamonds
Select card #3 from ['2 Hearts', 'K Clubs'] (e.g., '4 Spades'): K Clubs
Sorry, your selected cards do not match the prime number pattern.

Sorry, that's the wrong guess!
🚫🚫🚫 Better luck next time! 🚫🚫🚫

```

Sample 6-8 grade game output(Single): -

Single Player Mode

```

Select the grade level:
1. K-2
2. Grades 3-5
3. Grades 6-8
Enter the corresponding number for the grade level: 3
Starting game at level: Grades 6-8
Welcome to the Grades 6-8 Art Dealer Game!
Select game mode:
1. Single-Player
2. Multiplayer
Enter 1 or 2: 1
The dealer is looking for a pattern. Try to guess it!
Your cards to choose from: ['8 Clubs', '5 Diamonds', '10 Hearts', '7 Clubs', 'A Hearts']
Select card #1 from ['8 Clubs', '5 Diamonds', '10 Hearts', '7 Clubs', 'A Hearts'] (e.g., '4 Spades'): 8 Clubs
Select card #2 from ['5 Diamonds', '10 Hearts', '7 Clubs', 'A Hearts'] (e.g., '4 Spades'): 5 Diamonds
Select card #3 from ['10 Hearts', '7 Clubs', 'A Hearts'] (e.g., '4 Spades'): 7 Clubs
Select card #4 from ['10 Hearts', 'A Hearts'] (e.g., '4 Spades'): A hearts
Select card #5 from ['10 Hearts'] (e.g., '4 Spades'): 10 Hearst
Invalid selection. Please enter the card as 'Number Suit' (e.g., '4 Spades').
Select card #5 from ['10 Hearts'] (e.g., '4 Spades'): 10 Hearts
Sorry, your selected cards are not all Spades.

Sorry, that's the wrong guess!
😞😞😞 Better luck next time! 😞😞😞

```

Sample 6-8 grade game output(Multi): -

Multi player Mode

```

Enter the corresponding number for the grade level: 3
Starting game at level: Grades 6-8
Welcome to the Grades 6-8 Art Dealer Game!
Select game mode:
1. Single-Player
2. Multiplayer
Enter 1 or 2: 2

Player 1: Choose a pattern for Player 2 to guess from the following list:
1. A Full House
2. All Cards Are Spades
3. Cards Adding to a Prime Number
Enter the number corresponding to your chosen pattern: 2
Player 2: It's your turn to guess the pattern!

The dealer is looking for a pattern. Try to guess it!
Player 1: Please lay out 5 cards for Player 2 to choose from.
Enter card #1 number/face (A, 2-10, J, Q, K): A
Enter card #1 suit (Spades, Hearts, Clubs, Diamonds): Spades
Enter card #2 number/face (A, 2-10, J, Q, K): 3
Enter card #2 suit (Spades, Hearts, Clubs, Diamonds): Spades
Enter card #3 number/face (A, 2-10, J, Q, K): Q
Enter card #3 suit (Spades, Hearts, Clubs, Diamonds): spades
Enter card #4 number/face (A, 2-10, J, Q, K): j
Enter card #4 suit (Spades, Hearts, Clubs, Diamonds): Spades
Enter card #5 number/face (A, 2-10, J, Q, K): 2
Enter card #5 suit (Spades, Hearts, Clubs, Diamonds): Spades
Player 2: Your cards to choose from: ['A Spades', '3 Spades', 'Q Spades', 'J Spades', '2 Spades']
Select card #1 from ['A Spades', '3 Spades', 'Q Spades', 'J Spades', '2 Spades'] (e.g., '4 Spades'): A Spades
Select card #2 from ['3 Spades', 'Q Spades', 'J Spades', '2 Spades'] (e.g., '4 Spades'): Q Spades
Select card #3 from ['3 Spades', 'J Spades', '2 Spades'] (e.g., '4 Spades'): J Spades
Select card #4 from ['3 Spades', '2 Spades'] (e.g., '4 Spades'): 3 spades
Select card #5 from ['2 Spades'] (e.g., '4 Spades'): 2 spades

Congratulations! You guessed correctly!
🎈🎈🎈🎈🎈 🌸🌸🌸
Balloons and flowers everywhere! You are the winner!
🎈🎈🎈🎈🎈 🌸🌸🌸

```

Testing the Game

To ensure that the Art Dealer Game is running correctly, follow these steps:

1. **Start the Game:** After opening the game file, follow the prompts to choose a grade level and game mode.
2. **Single-Player Mode:** Run through a few game rounds by selecting cards and guessing patterns. Ensure that the program responds correctly to correct and incorrect guesses.
3. **Multiplayer Mode:** Test the multiplayer option by having two users interact. Player 1 chooses the pattern, and Player 2 tries to guess it. Check for smooth gameplay and interaction.
4. **Pattern Feedback:** After each guess, check if the system provides the correct feedback, whether it's a win or a loss. Look for the balloons and flowers for correct guesses, and sad emojis for incorrect guesses.

If everything runs smoothly, your game has been successfully set up and is working perfectly!

Troubleshooting and FAQs

Q1: The game is not starting when I double-click the file. What should I do?

- Ensure that you have Python installed on your computer. You can download it from python.org.
- Make sure the game file is saved in a location where you have permission to run it (e.g., your Downloads or Documents folder).

Q2: The game crashes when selecting a card. How do I fix this?

- Make sure you're typing the card in the format shown in the example (e.g., 4 Spades), with the number/face followed by the suit.

Q3: How do I reset the game?

- After each game, you will be prompted with the option to play again. Simply type y to restart or n to exit the game.

Q4: Can I play this game on a different operating system?

- Yes! This game works on any system that supports Python, including Windows, macOS, and Linux.

Q5: How do I play in Multiplayer mode?

- Select the multiplayer option after choosing a grade level. Player 1 will choose a pattern, and Player 2 will try to guess the pattern based on the cards Player 1 presents.

Credits and Acknowledgments

If this is a project involving group members or guidance from a teacher, it's always a good idea to include a **Credits and Acknowledgments** section. This can also highlight the tools, libraries, or resources that were used in building the game.

Credits and Acknowledgments

- **Development Team:** (Ajay gopavarapu, Vasundhara Kommana, Varun , Sai , Pravallika Reddy)
- **Instructor:** Dr. for guidance and support throughout the project.
- **Tools Used:** Python, standard libraries for random number generation, and card symbols.
- **Special Thanks:** To all who provided feedback and helped test the game.

Conclusion

We hope you enjoy playing and learning with the Art Dealer Game! This game is a fun and interactive way to sharpen your pattern recognition skills while enjoying the world of art and

computation. Whether you're a teacher guiding young students through computational thinking or a student exploring patterns, this game is designed to engage and challenge you.

Thank you for playing!