

Trianta Ena, a *Greek* variation Game to 31

I. The Game

The objective of the game is to accumulate a hand of cards that equals 31 (Trianta ena!) or a hand that has a card value greater than that of the Dealers without exceeding 31.

II. The Players

This is a game with *multiple* players:

- The Dealer, referred to as the Banker: distributes cards and pays out the winners from amount of money held in the Bank.
- The Players (usually no more than seven or nine) : human players who face the dealer. If the player loses they pay the Banker the amount equal to their bet. The banks accumulates the winnings.

III. The Rules

There are a few variations to this game. These are the rules as played by my family:

Each player begins with the same amount of money; the player who is the Banker, must begin with three times the amount of the Players. In other words, if the players begins with \$100.00 each, the Banker must have \$300.00.

Trianta Ena consists of *continious* rounds of play with the same original deck(s), reshuffled as needed.

Each round the Player may bet any amount of currency up to the total amount they have. If the Player wins, they keep their bet and receive an equal amount of their bet from the Banker. Otherwise the Player gives the entirety of the bet to the Banker.

To start each round, the Dealer deals one card to each player. The card that the Players are dealt is kept face down and known only to each Player. The first card the Dealer is dealt is kept face up and known to all the Players and the Dealer. After each player receives their first card, they place their bet or choose to fold without betting. Once all bets have been made, each player with a standing bet receives two more cards face up. After each player has three cards (one down, two up), each Player in turn may take one of the following actions:

- *Hit* : The Players continue to receive another card
- *Stand* : The Player ends and maintains the value of the current hand

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If the player chooses to take another card and their hand is bust, that player must pay the banker the total amount of their bet. Play continues with the next player.

Once all the Players *stand or have gone bust*, the dealer reveals their face down card to the Players, and continues to take a hit until the hand value of the Banker reaches or exceeds 27.

This concludes a round, and the game continues so long as players have money and choose not to cash out.

IV. The Cards

The game is played using two standard 52 card decks. Each card has a face value, King, Queen, and Jack have a face value of 10; the Ace can have a face value of 1 or 11. If the hand consists of one Ace, the player can choose to count it as a 1 or an 11. If the hand consists of more than one Ace, only one Ace can count as 1. All others have a value of 11.

The cards are reshuffled once all the cards have been used up.

V. The Winner

There can be multiple winners in each round. In general, the winner of a round is any Player who has a hand value **higher** than that of the Dealer without having gone bust. In the case of a tie, the Dealer wins.

A special case includes natural Trianta Ena versus the hand value of a 31. A natural Trianta Ena is defined as a hand having a value of 31 (i.e. an Ace and two face cards). While a value of 31 can be any amount of cards (e.g. a 9, 2, and a face card). *Natural Trianta Ena always triumphs over a value of 31.* A natural 31 of the Banker results in the Banker winning the bets from all players.

VI. Rotating the Banker

At the end of each round, the player with the largest total cash amount exceeding that of the Banker, is given the option to become the Banker. If they choose to accept, the Player becomes the Banker and current Banker becomes a Player. If they decline the player with the next greatest amount is given the same option, etc.

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VII. The Assignment

Assume you need to extend your Blackjack *design* to now also implement the game of Trianta Ena. *Evaluate* your current Blackjack design on its ability to be extended to allow for this variant to be implemented.

VIII. Deliverables

1. **Object Design Specification of your current implementation of Blackjack.** Show all the classes you have currently implemented and *explain the purpose and benefit gained from that class*. You do not need to provide UML diagrams for each class, but an object diagram of your design structure is necessary.
2. **Object Design Specification of extended implementation.** This specification should highlight all the changes that need to be made to your original object model for you to implement this variation of the Card game. These changes should be specific, identify any new classes you might need to create, any classes that you would remove, and any modifications you would make to your existing classes.
3. **Evaluate and review your original object design.** Does it allow for the Trianta Ena variant to be implemented? If so, explain the benefits of your original design. If not, what changes would be required to your original design? Furthermore, would these changes have made your original implementation of Blackjack easier/better?