

Capstone Project: Blackjack

Blackjack Game in Python

This project implements a simplified version of the popular card game **Blackjack**. The game allows a single user to play against a computer dealer using Python. The program simulates card drawing, score calculation, and game rules, providing an interactive command-line experience.

Features

- A **deck of cards** is simulated with numbers from 1 (Ace) to 10, with face cards also represented as 10.
 - Implements **Blackjack scoring** rules:
 - Aces can count as 1 or 11.
 - A score of exactly 21 with the first two cards is a Blackjack.
 - Provides **automated dealer behavior**:
 - Dealer draws cards until their score is at least 17.
 - Handles game-winning conditions:
 - Win, lose, or draw, based on the player's and dealer's scores.
 - Automatic wins for Blackjack.
 - **Interactive gameplay**:
 - Player decides whether to draw another card or pass.
 - The game runs in a loop until the player chooses to stop.
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How to Run

1. **Clone the Repository**
2. **Ensure Python is Installed:** This project requires Python 3.x. You can download it [here](#).
3. **Run the Script:**

```
bash
Copy code
python Capstone_Blackjack.py
```

4. **Play the Game:**
 - Follow the on-screen instructions to play.
 - Decide whether to draw another card or pass.
 - Try to beat the computer dealer by scoring closer to 21 without going over!

Code Overview

Key Functions

1. **deal_card():**
 - Returns a random card from the deck.
 - Simulates the process of drawing a card.
 2. **calculate_score(cards):**
 - Calculates the score for a given hand of cards.
 - Handles special conditions like Blackjack and Ace adjustment.
 3. **compare(u_score, c_score):**
 - Compares the scores of the user and dealer.
 - Determines the outcome: win, lose, or draw.
 4. **play_game():**
 - Manages the entire game flow, including user interactions and dealer actions.
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Flow of the Game

- The user starts with two cards, as does the dealer.
- The user can draw additional cards until they pass or exceed 21.
- The dealer continues drawing cards until their score is at least 17.
- The game determines the winner based on Blackjack rules.