



# Matrusri Engineering College

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Word Guessing Game		
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## Abstract

This Python program implements a word-guessing game designed to entertain and educate players about various technical terms. The game randomly selects a word from a predefined dictionary containing ten words related to technology and programming, each accompanied by three progressive hints. Players must guess the word letter by letter, with the current state of the word displayed after each attempt. The goal is to uncover the entire word within six attempts while leveraging the hints provided for guidance.

At the beginning of the game, players are greeted with a welcome message explaining the rules and the number of attempts they have. The first hint is presented immediately, setting the context for the word to be guessed. As the game progresses, players input one letter at a time. The program validates the input to ensure it is a single alphabetic character and checks if the letter has already been guessed. If the guess is correct, the letter is revealed in its respective positions in the word. Incorrect guesses reduce the remaining attempts by one, and subsequent hints are revealed in order to assist the player. This gradual unveiling of hints ensures an engaging learning experience while maintaining a fair challenge.

The game is interactive and responsive, offering immediate feedback on each guess. If a player guesses all letters correctly before exhausting their attempts, a congratulatory message is displayed, highlighting their success. Conversely, if the player runs out of attempts, the game ends with a message revealing the correct word. This balance of challenge and support fosters an enjoyable and educational experience for players of varying skill levels.

Key features of the program include a well-structured dictionary of words with hints, dynamic word display that updates as letters are correctly guessed, and a robust input validation mechanism to handle common user errors. The inclusion of hints adds a layer of strategy, as players must decide whether to rely on them or focus on guessing. The game also ensures that previously guessed letters are not penalized, enhancing user experience by preventing redundancy.

Overall, this word-guessing game serves as both a fun pastime and an educational tool, introducing players to important technical vocabulary in a playful context. It demonstrates the effective use of Python's core programming constructs, such as dictionaries, loops, conditionals, and string manipulation. With its simple yet engaging mechanics and thoughtful design, the game is well-suited for beginners looking to practice Python programming concepts or individuals seeking an entertaining way to learn new technical terms. The program's extensibility allows developers to easily add more words and hints, making it a flexible platform for various themes or topics.

## **Project Code:**

```
import random

def word_guessing_game():      # Word list with hints for 10 words
words_with_hints = {
    "python": ["It's a popular programming language.",
               "It's named after a comedy group, not a snake.",
               "It's used a lot in data science and web development."],
    "developer": ["A person who creates software.",
                  "They write and debug code.",
                  "They might work on websites, apps, or even games."],

    "keyboard": ["A device you use to type letters and numbers.",
                  "It has keys like letters, numbers, and symbols.",
                  "You use it to interact with computers and phones."],

    "software": ["Programs and applications that run on computers.",
                  "It's the opposite of hardware.",
                  "Examples include apps, games, and operating systems."],

    "computer": ["A device that helps you perform tasks and solve problems.",
                  "It can do things like run programs and store data.",
                  "It has both hardware (physical parts) and software (programs)."],
```

```

"internet": ["A global network that connects computers worldwide.",
            "You use it to browse websites, send emails, and chat.",
            "It allows you to communicate and share information easily."],

"algorithm": ["A set of instructions to solve a problem.",
             "It's used in computer science to perform tasks efficiently.",
             "Examples are sorting things or searching for specific data."],

"database": ["A system used to store and manage large amounts of data.",
            "It helps you retrieve, add, and update information easily.",
            "Examples include MySQL, MongoDB, and SQL Server."],

"website": ["A collection of web pages you can visit on the internet.",
            "It can contain text, images, and videos.",
            "Websites are built using HTML, CSS, and JavaScript."],

"coding": ["The act of writing instructions for a computer to follow.",
           "It's done using programming languages like Python, Java, or JavaScript.",
           "It's essential for building software applications."]
}

```

```

        # Randomly select a word and its hints
word_to_guess, hints = random.choice(list(words_with_hints.items()))
guessed_letters = []          # Track guessed letters
attempts = 6                  # Number of attempts
hint_counter = 0              # To track which hint we are on

        # Print a welcoming message
print(" 🎮 Word Guessing Game! 🎮 ")
print(f"You have {attempts} attempts to guess it. Good luck!")
print("\nHere's your first hint:")
print(f"Hint 1: {hints[hint_counter]}")      # Show the first hint
hint_counter += 1

        # Game loop
while attempts > 0:
        # Show the current progress of the word
display_word = "".join([letter if letter in guessed_letters else "_" for letter in word_to_guess])
print(f"\nCurrent word: {display_word}")

```

```

        # Check if the word is fully guessed
if "_" not in display_word:
    print("🎉 Congratulations! You Passed!! 🎉")
    break

        # Ask the player for a guess
guess = input("Enter a letter: ").lower()

        # Input validation
if len(guess) != 1 or not guess.isalpha():
    print("Please Enter only a single letter.")
    continue

        # Check if the letter has already been guessed
if guess in guessed_letters:
    print("Try another letter.")
elif guess in word_to_guess:
    guessed_letters.append(guess)          # Add to guessed letters
    print(f"Nice! {guess} is in the word.")
else:
    attempts -= 1                        # Deduct one attempt for a wrong guess
    print(f"{guess} is incorrect. You have {attempts} attempts left.")

        # Show the next hint if there are any remaining
if hint_counter < len(hints):
    print(f"Hint {hint_counter + 1}: {hints[hint_counter]}")
    hint_counter += 1

        # If attempts run out, the game is over
if attempts == 0:
    print(f"\nGame Over! 😞 The word was: '{word_to_guess}'.")
    break

```

Call the function to start the game

```
word_guessing_game()
```

x----- Code ends-----x

## Output:

### Output on success:

```
apple@Sanjays-MacBook-Pro Word guessing game % /usr/bin/python3 "/Users/apple/Documents/VSCoDe/Word guessing game/game.py"
🎉 Word Guessing Game! 🎉
You have 6 attempts to guess it. Good luck!

Here's your first hint:
Hint 1: A global network that connects computers worldwide.

Current word: _____
Enter a letter: i
Nice! i is in the word.

Current word: i_____
Enter a letter: a
a is incorrect. You have 5 attempts left.
Hint 2: You use it to browse websites, send emails, and chat.

Current word: i_____
Enter a letter: n
Nice! n is in the word.

Current word: in__n__
Enter a letter: t
Nice! t is in the word.

Current word: int__n_t
Enter a letter: e
Nice! e is in the word.

Current word: inte_net
Enter a letter: r
Nice! r is in the word.

Current word: internet
🎉 Congratulations! You Passed!! 🎉
```

### Output on Failure:

```
apple@Sanjays-MacBook-Pro Word guessing game % /usr/bin/python3 "/Users/apple/Documents/VSCoDe/Word guessing game/game.py"
🎉 Word Guessing Game! 🎉
You have 6 attempts to guess it. Good luck!

Here's your first hint:
Hint 1: The act of writing instructions for a computer to follow.

Current word: _____
Enter a letter: d
Nice! d is in the word.

Current word: __d__
Enter a letter: f
f is incorrect. You have 5 attempts left.
Hint 2: It's done using programming languages like Python, Java, or JavaScript.

Current word: __d__
Enter a letter: v
v is incorrect. You have 4 attempts left.
Hint 3: It's essential for building software applications.

Current word: __d__
Enter a letter: b
b is incorrect. You have 3 attempts left.

Current word: __d__
Enter a letter: n
Nice! n is in the word.

Current word: __d_n_
Enter a letter: m
m is incorrect. You have 2 attempts left.

Current word: __d_n_
Enter a letter: n
Try another letter.

Current word: __d_n_
Enter a letter: j
j is incorrect. You have 1 attempts left.

Current word: __d_n_
Enter a letter: h
h is incorrect. You have 0 attempts left.

Game Over! 😞 The word was: 'coding'.
```