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import random
HANGMAN_PICS = [ '''
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words = {'Colors':'red orange yellow green blue indigo violet white black brown'.split(),
'Shapes':'square triangle rectangle circle ellipse rhombus trapazoid chevron pentagon hexagon
septagon octagon'.split(),
'Fruits':'apple orange lemon lime pear watermelon grape grapefruit cherry banana cantalope
mango strawberry tomato'.split(),
'Animals':'bat bear beaver cat cougar crab deer dog donkey duck eagle fish frog goat leech
lion lizard monkey moose mouse otter owl panda python rabbit rat shark sheep skunk squid tiger
turkey turtle weasel whale wolf wombat zebra'.split()}

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def getRandomWord(wordDict):
    # This function returns a random string from the passed dictionary of lists of strings,
    and the key also.
    # First, randomly select a key from the dictionary:
    wordKey = random.choice(list(wordDict.keys()))

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# Second, randomly select a word from the key's list in the dictionary:
wordIndex = random.randint(0, len(wordDict[wordKey]) - 1)

return [wordDict[wordKey][wordIndex], wordKey]

def displayBoard(missedLetters, correctLetters, secretWord):
    print(HANGMAN_PICS[len(missedLetters)])
    print()

    print('Missed letters:', end=' ')
    for letter in missedLetters:
        print(letter, end=' ')
    print()

    blanks = '_' * len(secretWord)

    for i in range(len(secretWord)): # replace blanks with correctly guessed letters
        if secretWord[i] in correctLetters:
            blanks = blanks[:i] + secretWord[i] + blanks[i+1:]

    for letter in blanks: # show the secret word with spaces in between each letter
        print(letter, end=' ')
    print()

def getGuess(alreadyGuessed):
    # Returns the letter the player entered. This function makes sure the player entered a
    # single letter, and not something else.
    while True:
        print('Guess a letter.')
        guess = input()
        guess = guess.lower()
        if len(guess) != 1:
            print('Please enter a single letter.')
        elif guess in alreadyGuessed:
            print('You have already guessed that letter. Choose again.')
        elif guess not in 'abcdefghijklmnopqrstuvwxyz':
            print('Please enter a LETTER.')
        else:
            return guess

def playAgain():
    # This function returns True if the player wants to play again, otherwise it returns
    # False.
    print('Do you want to play again? (yes or no)')
    return input().lower().startswith('y')

print('H A N G M A N')

difficulty = 'X'
while difficulty not in 'EMH':
    print('Enter difficulty: E - Easy, M - Medium, H - Hard')
    difficulty = input().upper()
if difficulty == 'M':
    del HANGMAN_PICS[8]
    del HANGMAN_PICS[7]
if difficulty == 'H':
    del HANGMAN_PICS[8]
    del HANGMAN_PICS[7]
    del HANGMAN_PICS[5]
    del HANGMAN_PICS[3]

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missedLetters = ''
correctLetters = ''
secretWord, secretSet = getRandomWord(words)
gameIsDone = False

while True:
    print('The secret word is in the set: ' + secretSet)
    displayBoard(missedLetters, correctLetters, secretWord)

    # Let the player type in a letter.
    guess = getGuess(missedLetters + correctLetters)

    if guess in secretWord:
        correctLetters = correctLetters + guess

        # Check if the player has won
        foundAllLetters = True
        for i in range(len(secretWord)):
            if secretWord[i] not in correctLetters:
                foundAllLetters = False
                break
        if foundAllLetters:
            print('Yes! The secret word is "' + secretWord + '"! You have won!')
            gameIsDone = True
    else:
        missedLetters = missedLetters + guess

        # Check if player has guessed too many times and lost.
        if len(missedLetters) == len(HANGMAN_PICS) - 1:
            displayBoard(missedLetters, correctLetters, secretWord)
            print('You have run out of guesses!\nAfter ' + str(len(missedLetters)) + ' missed
guesses and ' + str(len(correctLetters)) + ' correct guesses, the word was "' + secretWord +
'")
            gameIsDone = True

    # Ask the player if they want to play again (but only if the game is done).
    if gameIsDone:
        if playAgain():
            missedLetters = ''
            correctLetters = ''
            gameIsDone = False
            secretWord, secretSet = getRandomWord(words)
        else:
            break

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