

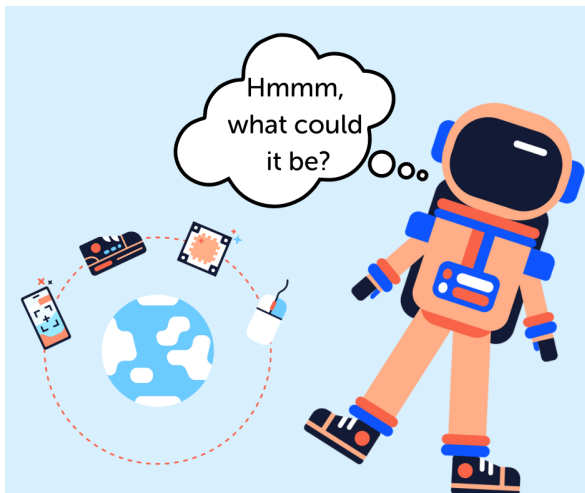
GUESS THE INVENTION

Write a program for a word guessing game using the names of inventions created for space.



INTRODUCTION

Write a program for a game, similar to hang man, where the user suggests letters to guess a word that is an invention created for space.



What you will learn

- Getting user **input**
- **Printing text** to screen
- **while loops**

What you will need

HARDWARE

A computer

SOFTWARE

[Raspberry Pi Editor](#) [\(online\)](#)

or

Mu [\(download\)](#)
DOWNLOADS

To download Mu follow the instructions [on this page](#)

Additional notes for educators

Check out our blog post for this project with tips, curriculum, and supporting material at [medium.com/@codeclubau](#)

Check out the code along video on our [YouTube](#) channel.

Create a new program.

Start your program by importing the random library. This will allow us to create a game that chooses a random word from a list that we provide.

main.py

```
1 import random
2
3
4
5
6
7
8
9
10
```

Let's ask the user to input their name.

main.py

```
1 import random
2
3 name = input("What is your name?")
4
5
6
7
8
9
10
11
12
```

Next tell the user how to play the game. We are going to use their name as part of this. Once you have written this line of code, test your program to make sure it reads correctly.

main.py

```
1 import random
2
3 name = input("What is your name?")
4
5 print("Good luck", name, "! HINT - some guesses are two words. A space could be a guess")
6
7
8
9
10
11
12
```

Run your program to make sure it prints correctly.



Next we will create the list of words that the program will select from. This list of words is a range of inventions that have been created for space exploration.

main.py

```
1 import random
2
3 name = input("What is your name?")
4
5 print("Good luck", name, "! HINT - some guesses are two words. A space could be a guess")
6
7 words = ['phone camera', 'computer mouse', 'LED lights', 'memory foam',
8         'CAT scan', 'joggers', 'foil blanket', 'purifier',
9         'dust buster', 'insulation', 'jaws of life', 'laptop']
10
11
```

Create a function that will choose one random word from the list of words provided.

main.py

```
1 import random
2
3 name = input("What is your name?")
4
5 print("Good luck", name, "! HINT - some guesses are two words. A space could be a guess")
6
7 words = ['phone camera', 'computer mouse', 'LED lights', 'memory foam',
8         'CAT scan', 'joggers', 'foil blanket', 'purifier',
9         'dust buster', 'insulation', 'jaws of life', 'laptop']
10
11 word = random.choice(words)
12
```

Next we need to print the instructions for the user, telling them to guess a letter.

main.py

```
1 import random
2
3 name = input("What is your name?")
4
5 print("Good luck", name, "! HINT - some guesses are two words. A space could be a guess")
6
7 words = ['phone camera', 'computer mouse', 'LED lights', 'memory foam',
8         'CAT scan', 'joggers', 'foil blanket', 'purifier',
9         'dust buster', 'insulation', 'jaws of life', 'laptop']
10
11 word = random.choice(words)
12
13 print("Guess the letters")
14
```

Run your program to make sure it prints correctly.



Now set the conditions for the game. Create the guesses variable with an empty value. Set the number of turns a user can have. You can change the number to suit your game.

```
1 import random
2
3 name = input("What is your name?")
4
5 print("Good luck", name, "! HINT - some guesses are two words. A space could be a guess")
6
7 words = ['phone camera', 'computer mouse', 'LED lights', 'memory foam',
8         'CAT scan', 'joggers', 'foil blanket', 'purifier',
9         'dust buster', 'insulation', 'jaws of life', 'laptop']
10
11 word = random.choice(words)
12
13 print("Guess the letters")
14
15 guesses = ''
16 turns = 12
```

Create a while loop that will run while the number of turns is more than 0. It will ask the user to guess a letter until all attempts are exhausted.

```
4
5 print("Good luck", name, "! HINT - some guesses are two words. A space could be a guess")
6
7 words = ['phone camera', 'computer mouse', 'LED lights', 'memory foam',
8         'CAT scan', 'joggers', 'foil blanket', 'purifier',
9         'dust buster', 'insulation', 'jaws of life', 'laptop']
10
11 word = random.choice(words)
12
13 print("Guess the letters")
14
15 guesses = ''
16 turns = 12
17
18 while turns > 0:
19
```

Make a counter that starts with 0 that will count the number of incorrect answers.

```
2
3 name = input("What is your name? ")
4
5 print("Good luck", name, "! HINT - some guesses are two words. A space could be a guess")
6
7 words = ['phone camera', 'computer mouse', 'LED lights', 'memory foam',
8         'CAT scan', 'joggers', 'foil blanket', 'purifier',
9         'dust buster', 'insulation', 'jaws of life', 'laptop']
10
11 word = random.choice(words)
12
13 print("Guess the letters")
14
15 guesses = ''
16 turns = 12
17
18 while turns > 0:
19     failed = 0
```

The program needs to check the user's guess against each letter (character) in the random word. If their letter guess is correct, it will print the letter. For any letter that has not been guessed correctly, it will print a dash.

```
12
13 print("Guess the letters")
14
15 guesses = ''
16 turns = 12
17
18 while turns > 0:
19     failed = 0
20
21     for char in word:
22         if char in guesses:
23             print(char, end=" ")
24
25         else:
26             print("_",end="")
27
28     failed += 1
```

The user will win the game if failure is 0. The program will print 'You win' and what the correct word was. Then we need to break the script.

```
19     failed = 0
20
21     for char in word:
22         if char in guesses:
23             print(char, end=" ")
24
25         else:
26             print("_",end="")
27
28     failed += 1
29
30     if failed == 0:
31         print("You Win")
32
33         print("The word is: ", word)
34         break
```

If the user has guessed the wrong letter, then the program needs to ask them to enter another guess.

```
23         print(char, end=" ")
24
25     else:
26         print("_",end="")
27
28     failed += 1
29
30     if failed == 0:
31         print("You Win")
32
33         print("The word is: ", word)
34         break
35
36 print()
37 guess = input("guess a letter:")
```

Store every input character in guesses.

main.py

```
27
28     failed += 1
29
30 v   if failed == 0:
31       print("You Win")
32
33       print("The word is: ", word)
34       break
35
36   print()
37   guess = input("guess a letter:")
38
39   guesses += guess
```

If the player's guess is not in the word the game needs to tell the player their guess was wrong. It should then reduce the number of turns by 1 and tell the player how many turns they have left.

```
30 v   if failed == 0:
31       print("You Win")
32
33       print("The word is: ", word)
34       break
35
36   print()
37   guess = input("guess a letter:")
38
39   guesses += guess
40
41 v   if guess not in word:
42
43       turns -= 1
44       print("Wrong")
45       print("You have", + turns, 'more guesses')
```

To complete the program, when turns equals zero the player needs to know they lost the game.

```
30 v   if failed == 0:
31       print("You Win")
32
33       print("The word is: ", word)
34       break
35
36   print()
37   guess = input("guess a letter:")
38
39   guesses += guess
40
41 v   if guess not in word:
42
43       turns -= 1
44       print("Wrong")
45       print("You have", + turns, 'more guesses')
46
47 v   if turns == 0:
48       print("You Lose")
```

Run your completed program.



Challenges:

New game

When the player has finished, ask them if they would like to play again. This would need to be asked at the end of the game whether they win or lose. Can you code the program to not repeat words that have already been used?

Hints

A person playing this game without any context would find it really hard to guess the words. How can you give them hints at the beginning or along the way to help them have a better chance at guessing a word correctly?

Levels of difficulty

In some word guessing games you aren't allowed to guess vowels. This changes the level of difficulty in the game. How could you adjust the game so that the player could select a level of difficulty before playing?

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