

# Exercises

1. Write a program that asks the user to enter a series of numbers and calculates the average of the numbers entered. The program should stop asking for numbers when the user enters the word "done".
2. Write a program that generates a random number between 1 and 10 and asks the user to guess the number. The program should give the user a hint and ask the user to guess again if the user's guess is incorrect.
3. Write a program that asks the user to enter a series of words and prints the words in reverse order. The program should stop asking for words when the user enters the word "done".
4. Write a program that generates a random number between 1 and 100 and asks the user to guess the number. The program should give the user a hint and ask the user to guess again if the user's guess is incorrect. The program should keep track of the number of guesses the user has made and print the number of guesses at the end.
5. Write a program that asks the user to enter a series of numbers and prints the product of the numbers entered. The program should stop asking for numbers when the user enters the word "done".
6. Write a program that asks the user to enter a password. The program should keep asking for the password until the user enters the correct password. The correct password is "python".
7. Write a program that asks the user to enter a number and then prints the digits of the number in reverse order. For example, if the user enters 1234, the program should print 4 3 2 1.
8. Write a program that asks the user to enter a series of numbers and prints the sum of the even numbers entered. The program should stop asking for numbers when the user enters the word "done".
9. Write a program that generates a random number between 1 and 100 and asks the user to guess the number. The program should give the user a hint and ask the user to guess again if the user's guess is incorrect. The program should limit the number of guesses to 5.
10. Write a program that asks the user to enter a word and then prints the word in reverse order. For example, if the user enters "python", the program should print "nohtyp".

## Exercises and Solution

1. Write a program that asks the user to enter a series of numbers and calculates the average of the numbers entered. The program should stop asking for numbers when the user enters the word "done".

```
sum = 0
```

```
count = 0
```

```
while True:
```

```

num = input("Enter a number or type 'done': ")
if num == "done":
    break
try:
    num = int(num)
    sum += num
    count += 1
except ValueError:
    print("Invalid input")

if count > 0:
    average = sum / count
    print("The average of the numbers entered is", average)

```

2. Write a program that generates a random number between 1 and 10 and asks the user to guess the number. The program should give the user a hint and ask the user to guess again if the user's guess is incorrect.

```

import random
number = random.randint(1, 10)
while True:
    guess = int(input("Guess a number between 1 and 10: "))
    if guess == number:
        print("Congratulations, you guessed the number!")
        break
    elif guess < number:
        print("Too low, try again.")
    else:
        print("Too high, try again.")

```

3. Write a program that asks the user to enter a series of words and prints the words in reverse order. The program should stop asking for words when the user enters the word "done".

```

words = []
while True:
    word = input("Enter a word or type 'done': ")
    if word == "done":

```

```
        break
    words.append(word)
i = len(words) - 1
while i >= 0:
    print(words[i])
    i -= 1
```

4. Write a program that generates a random number between 1 and 100 and asks the user to guess the number. The program should give the user a hint and ask the user to guess again if the user's guess is incorrect. The program should keep track of the number of guesses the user has made and print the number of guesses at the end.

```
import random
number = random.randint(1, 100)
guesses = 0
while True:
    guess = int(input("Guess a number between 1 and 100: "))
    guesses += 1
    if guess == number:
        print("Congratulations, you guessed the number!")
        break
    elif guess < number:
        print("Too low, try again.")
    else:
        print("Too high, try again.")
print("It took you", guesses, "guesses to guess the number.")
```

5. Write a program that asks the user to enter a series of numbers and prints the product of the numbers entered. The program should stop asking for numbers when the user enters the word "done".

```
product = 1
while True:
    num = input("Enter a number or type 'done': ")
    if num == "done":
        break
    try:
        num = int(num)
```

```

        product *= num
    except ValueError:
        print("Invalid input")
print("The product of the numbers entered is", product)

```

6. Write a program that asks the user to enter a password. The program should keep asking for the password until the user enters the correct password. The correct password is "python".

```

password = ""
while password != "python":
    password = input("Enter the password: ")
print("Welcome to the system.")

```

7. Write a program that asks the user to enter a number and then prints the digits of the number in reverse order. For example, if the user enters 1234, the program should print 4 3 2 1.

```

num = int(input("Enter a number: "))
while num > 0:
    digit = num % 10
    print(digit, end=" ")
    num = num // 10

```

8. Write a program that asks the user to enter a series of numbers and prints the sum of the even numbers entered. The program should stop asking for numbers when the user enters the word "done".

```

sum = 0
while True:
    num = input("Enter a number or type 'done': ")
    if num == "done":
        break
    try:
        num = int(num)
        if num % 2 == 0:
            sum += num
    except ValueError:
        print("Invalid input")
print("The sum of the even numbers entered is", sum)

```

9. Write a program that generates a random number between 1 and 100 and asks the user to guess the number. The program should give the user a hint and ask the user to guess again if the user's guess is incorrect. The program should limit the number of guesses to 5.

```
import random

number = random.randint(1, 100)

guesses = 0

while guesses < 5:

    guess = int(input("Guess a number between 1 and 100: "))

    guesses += 1

    if guess == number:

        print("Congratulations, you guessed the number!")

        break

    elif guess < number:

        print("Too low, try again.")

    else:

        print("Too high, try again.")

if guesses == 5:

    print("You have used up all your guesses. The number was", number)
```

10. Write a program that asks the user to enter a word and then prints the word in reverse order. For example, if the user enters "python", the program should print "nohtyp".

```
word = input("Enter a word: ")

i = len(word) - 1

while i >= 0:

    print(word[i], end="")

    i -= 1
```