

JUNIOR CODERZ

10 Simple Python Projects

Beginner-friendly project ideas with ready-to-run code — a hands-on way to turn Python knowledge into real skills.

Code Pack · Beginners

How to Use This Pack

The best way to learn Python isn't to read about it — it's to build. Inside are ten beginner projects, each with clean, ready-to-run code you can type out, run, and then change to make your own.

Getting started

- Install Python, or use a free online editor like Google Colab, Replit, or IDLE.
- Type the code out yourself (you learn far more than by copy-pasting).
- Run it, see what happens, then tweak it — change the numbers, words, and rules.
- Errors are normal. Read the message, fix one thing at a time, and try again.

1. Number Guessing Game

The computer picks a random number and you guess it, with "too high / too low" hints. Teaches the random module and while loops.

```
# Number Guessing Game
import random
secret_number = random.randint(1, 10)
guess = 0

print("Guess a number between 1 and 10!")

while guess != secret_number:
    guess = int(input("Your guess: "))
    if guess < secret_number:
        print("Too low! Try again.")
    elif guess > secret_number:
        print("Too high! Try again.")
    else:
        print("You got it! Great job.")
```

2. Basic Calculator

Ask for two numbers and an operation, then do the maths. Teaches user input and if / elif / else.

```
# Basic Calculator
print("Simple Calculator")
num1 = float(input("Enter first number: "))
num2 = float(input("Enter second number: "))
operation = input("Choose +, -, *, or /: ")

if operation == '+':
    print("Result:", num1 + num2)
elif operation == '-':
    print("Result:", num1 - num2)
elif operation == '*':
    print("Result:", num1 * num2)
elif operation == '/':
    print("Result:", num1 / num2)
else:
    print("Invalid choice!")
```

3. Random Password Generator

Build a random mix of letters, numbers, and symbols into one password. Teaches strings and loops.

```
# Random Password Generator
import random

length = int(input("Password length (4 to 12): "))
chars = "abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ!@#$%^&*0123456789"

password = ""
for i in range(length):
    password += random.choice(chars)

print("Your password:", password)
```

4. Interactive Quiz

Ask a question and keep score. Teaches variables, user input, and if statements.

```
# Interactive Quiz
score = 0
answer = input("What is 2+2? ")

if answer == "4":
    score += 1

print("Your score:", score)
```

5. Command-Line To-Do List

Add tasks to a list until you type "exit". Teaches lists, while loops, and break.

```
# To-Do List
tasks = []

while True:
    task = input("Enter a task (or 'exit'): ")
    if task == "exit":
        break
    tasks.append(task)

print("Your tasks:", tasks)
```

6. Rock, Paper, Scissors

Play the classic game against the computer. Teaches the random module and comparison logic.

```
# Rock, Paper, Scissors
import random

choices = ["rock", "paper", "scissors"]
computer = random.choice(choices)

player = input("Choose rock, paper, or scissors: ").lower()
print(f"Computer chose {computer}.")

if player == computer:
    print("It's a tie!")
elif (player == "rock" and computer == "scissors") or \
     (player == "paper" and computer == "rock") or \
     (player == "scissors" and computer == "paper"):
    print("You win!")
else:
    print("You lose!")
```

7. Countdown Timer

Count down from any number of seconds to zero. Teaches the time module and time.sleep().

```
# Countdown Timer
import time

seconds = int(input("How many seconds to count down? "))

while seconds > 0:
    print(seconds)
    time.sleep(1)
    seconds -= 1

print("Time's up!")
```

8. Simple Chatbot

A bot that reacts to keywords in what you type. Teaches loops and searching text with "in".

```
# Simple Chatbot
print("Hello! I am a simple bot. Type 'bye' to exit.")

while True:
    user_input = input("You: ").lower()

    if "hello" in user_input or "hi" in user_input:
        print("Bot: Hi there! How are you?")
    elif "sad" in user_input:
        print("Bot: I am sorry to hear that. Cheer up!")
    elif "weather" in user_input:
        print("Bot: I live in a computer, so it is always sunny here.")
    elif "bye" in user_input:
        print("Bot: Goodbye! Have a great day.")
        break
    else:
        print("Bot: That is interesting. Tell me more.")
```

9. Word Counter

Count the words in any sentence. Teaches strings, .split(), and len().

```
# Word Counter
text = input("Type a sentence to count the words: ")
words = text.split()
word_count = len(words)

print(f"Your sentence has {word_count} words.")
```

10. Tic-Tac-Toe (basic board)

A simple board you can print and place a piece on. This is a starting point, not a full win-checking game yet — a great one to extend. Teaches lists, functions, and indexing.

```
# Tic-Tac-Toe — basic board example (not a full game yet)
board = ["-", "-", "-",
         "-", "-", "-",
         "-", "-", "-"]

def print_board():
    print(board[0] + " | " + board[1] + " | " + board[2])
    print(board[3] + " | " + board[4] + " | " + board[5])
    print(board[6] + " | " + board[7] + " | " + board[8])

print_board()

position = int(input("Choose a spot from 1 to 9: ")) - 1
board[position] = "X"

print_board()
```

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