

CLEAN CODE PRINCIPLES - UNCLE BOB

By : Hend abdelnasser

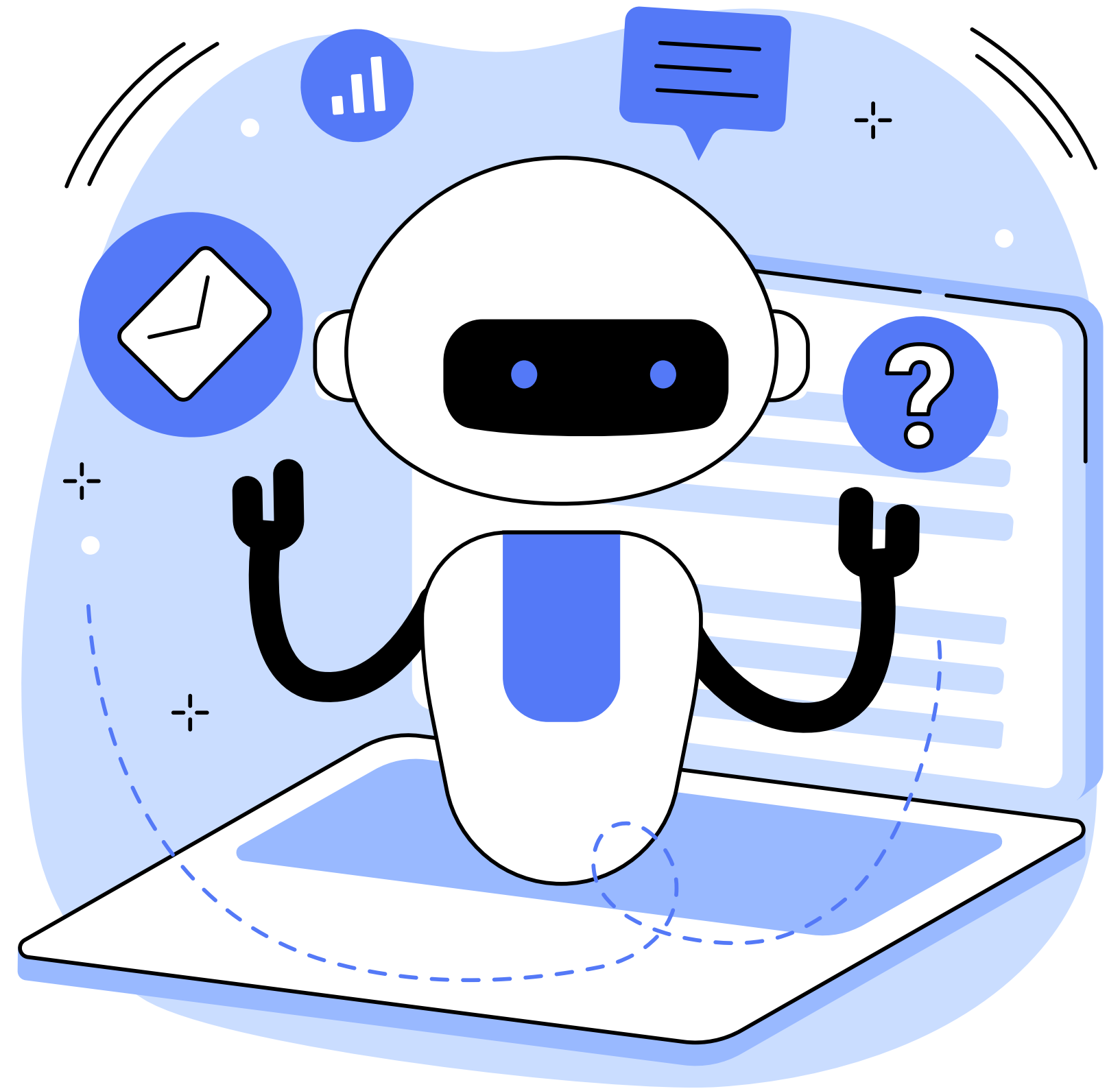
#AI_WITH_HEND

Who is Uncle Bob?

- Robert C. Martin (Uncle Bob)
- Software Engineer and Author of "Clean Code"

Why clean code?

- Easy to read
- Easy to understand
- Easy to modify and maintain



CLEAN CODE PRINCIPLES

1_Meaningful Names

2_Small Functions

3_Functions Should
Do One Thing

4_Prefer Code Over
Comments

5_Organize for
Readability

6_Error Handling Is
Important

7_Don't Repeat
Yourself (DRY)

8_Minimize
Dependencies

9_Proper Formatting

10_Small Classes

11_Express Intent

12_Code for Others

13_Code for Change

1_MEANINGFUL NAMES

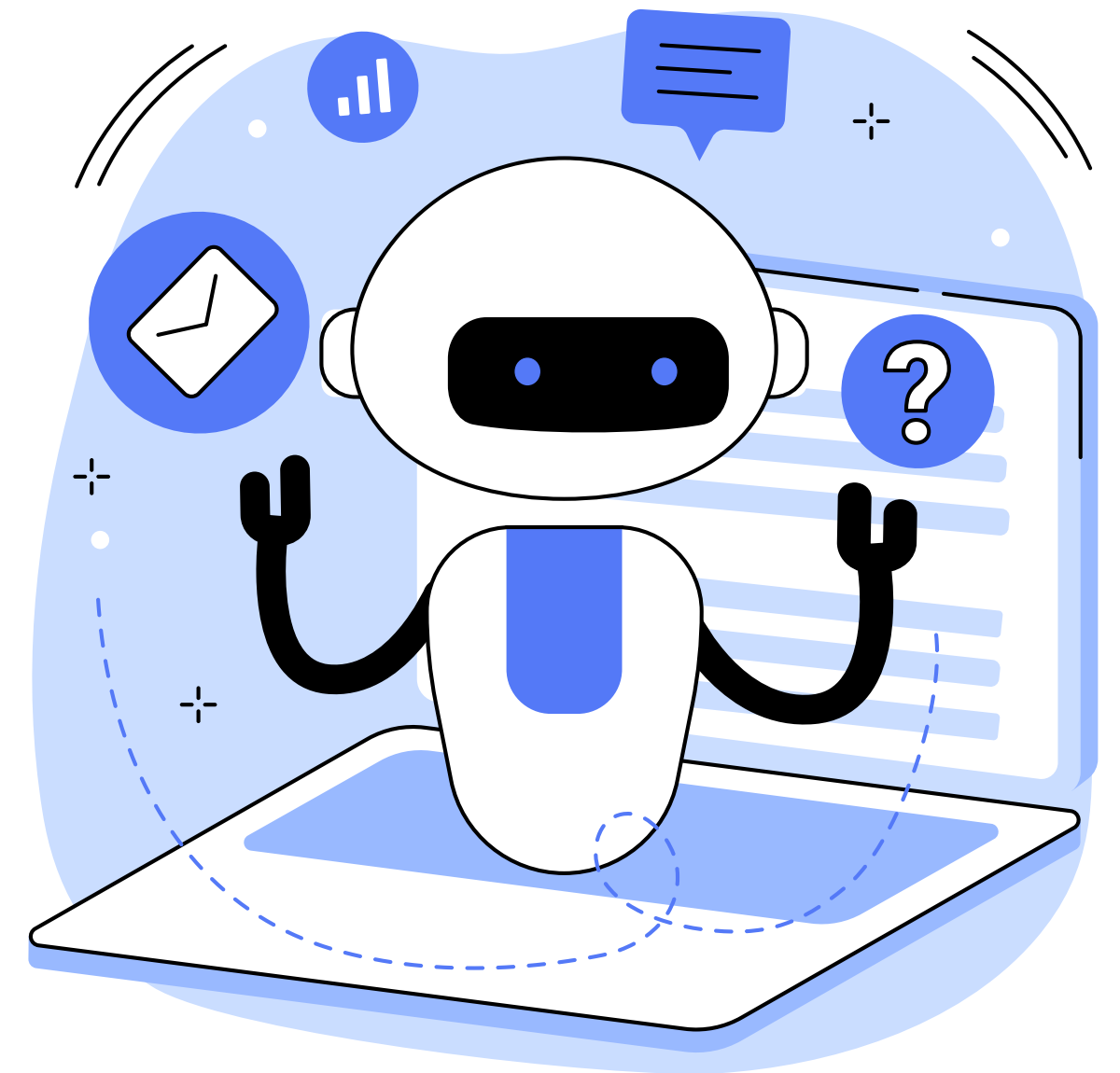
- استخدم أسماء دوال ومتغيرات معبرة لفهم الكود بسهولة.

- **Unclean code**

```
def f(x):  
    return x * x
```

- **clean code**

```
def calculate_square(number):  
    return number * number
```



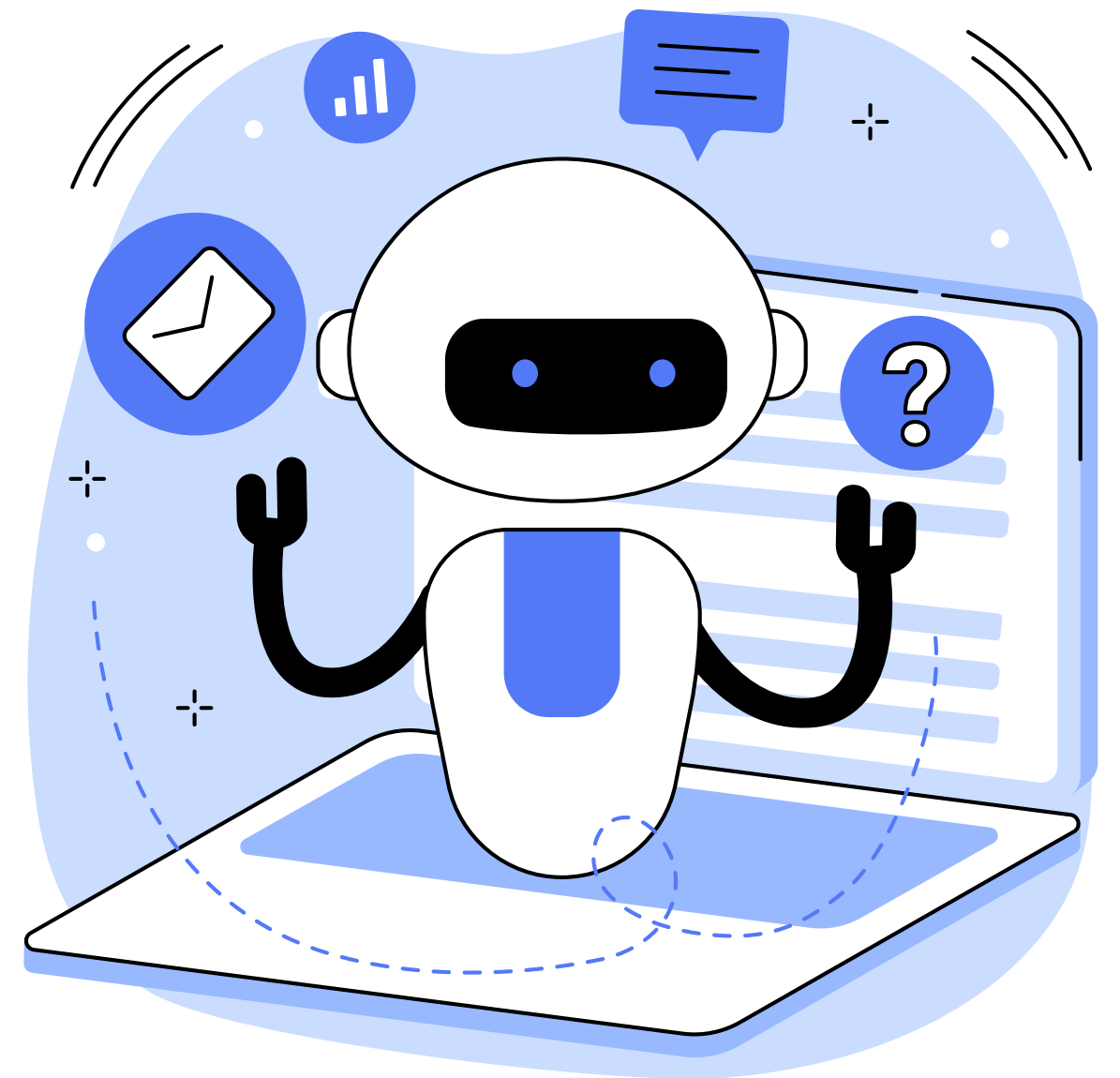
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2_SMALL FUNCTIONS

• اجعل الدوال قصيرة تؤدي مهمة بسيطة.

- **Unclean code**

```
def process_everything(data):  
    # cleaning, printing, saving  
    pass
```



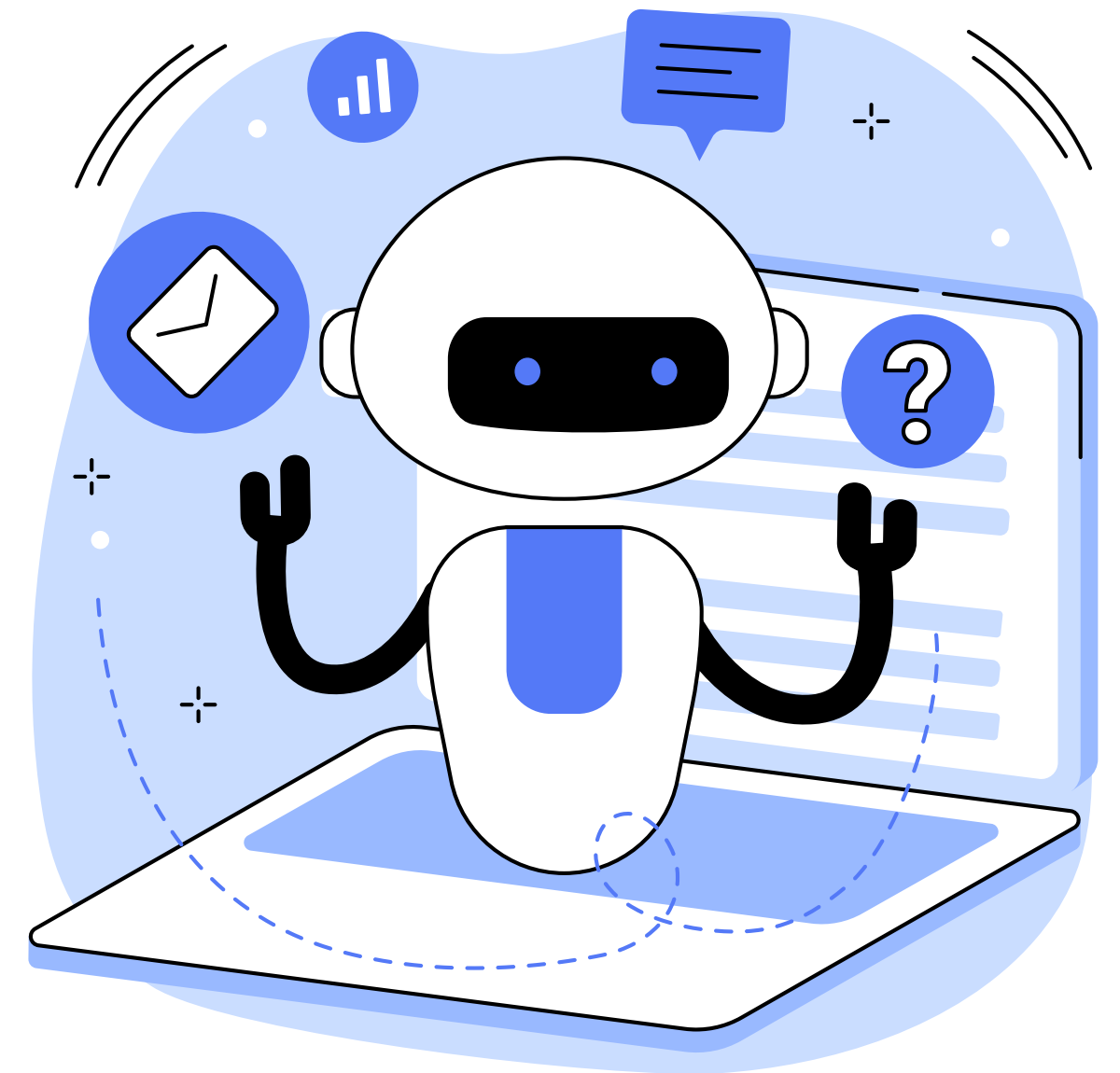
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2_SMALL FUNCTIONS

• اجعل الدوال قصيرة تؤدي مهمة بسيطة.

- **clean code**

```
def clean_data(data):  
    return data.strip()  
  
def print_data(data):  
    print(data)
```



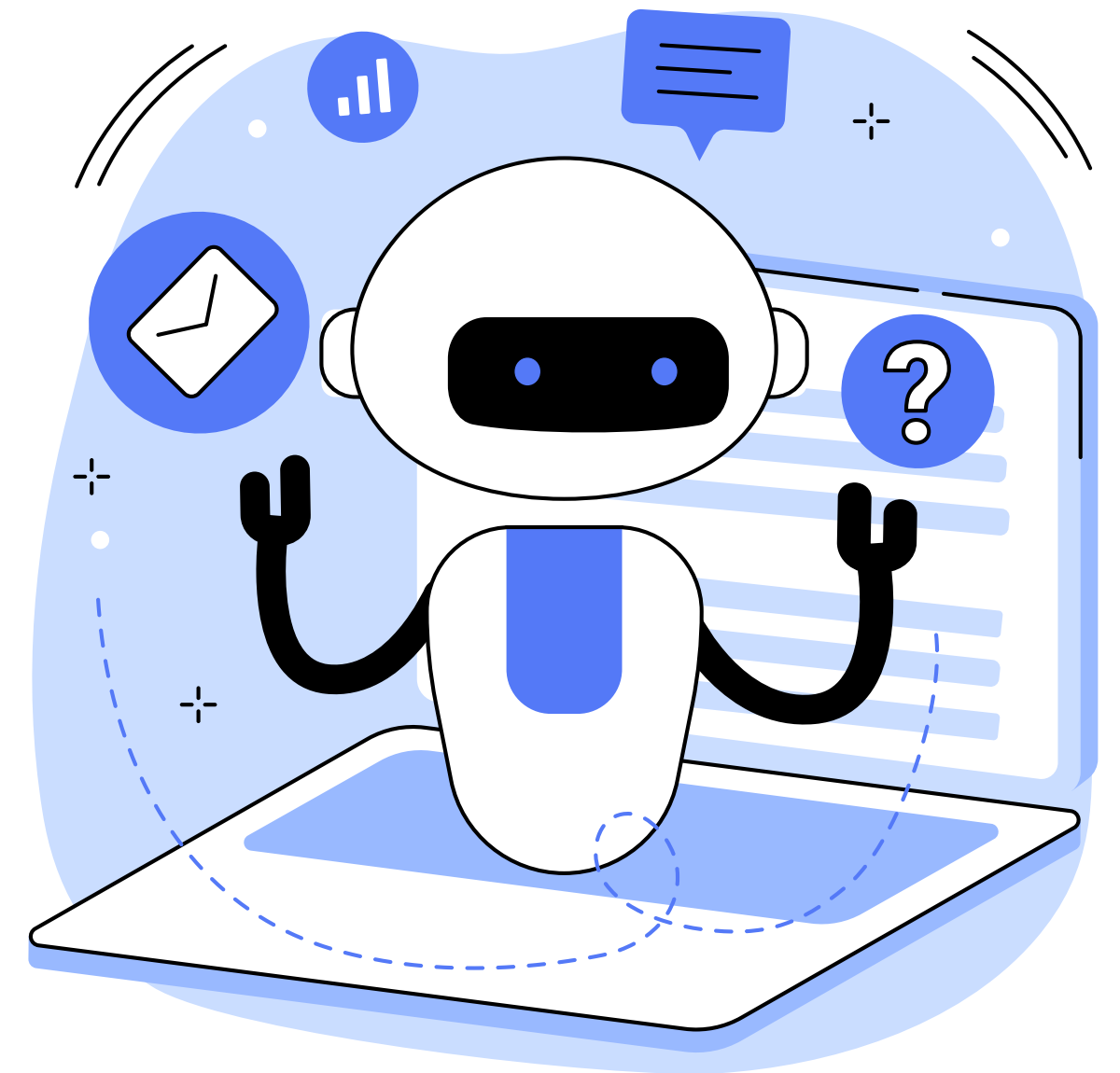
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3_FUNCTIONS SHOULD DO ONE THING

• كل دالة تؤدي وظيفة واحدة فقط.

- **unclean code**

```
def process_data(data):  
    clean_data = data.strip()  
    save_data(clean_data)  
    print(clean_data)
```



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3_FUNCTIONS SHOULD DO ONE THING

• كل دالة تؤدي وظيفة واحدة فقط.

- **clean code**

```
def clean_data(data):  
    return data.strip()  
  
def save_data(data):  
    pass  
  
def print_data(data):  
    print(data)
```



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4_PREFER CODE OVER COMMENTS

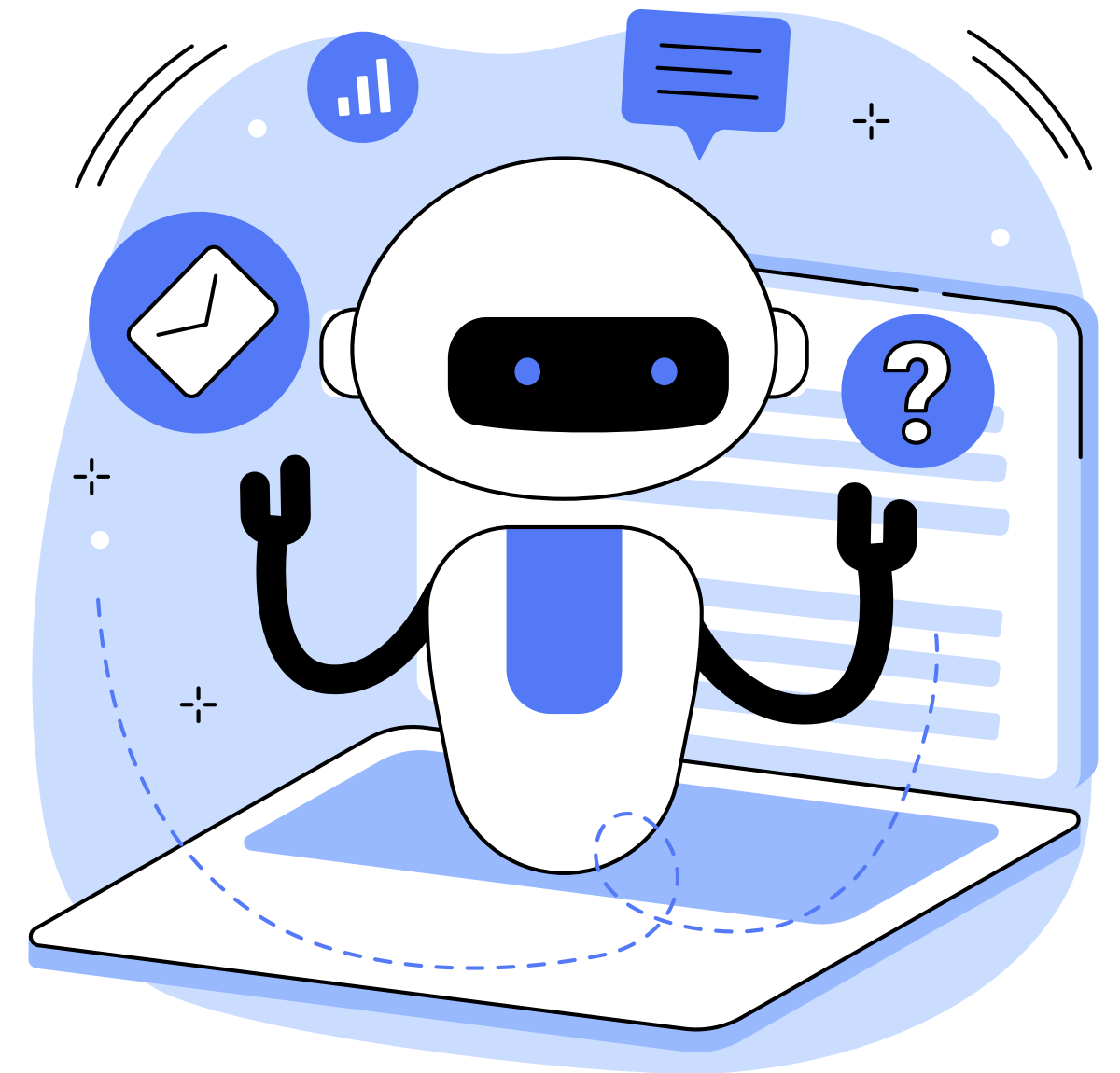
• اكتب كود واضح بدون الحاجة لتعليقات كثيرة.

- **Unclean code**

```
# Multiply number by two  
def func(x):  
    return x * 2
```

- **clean code**

```
def double_number(number):  
    return number * 2
```



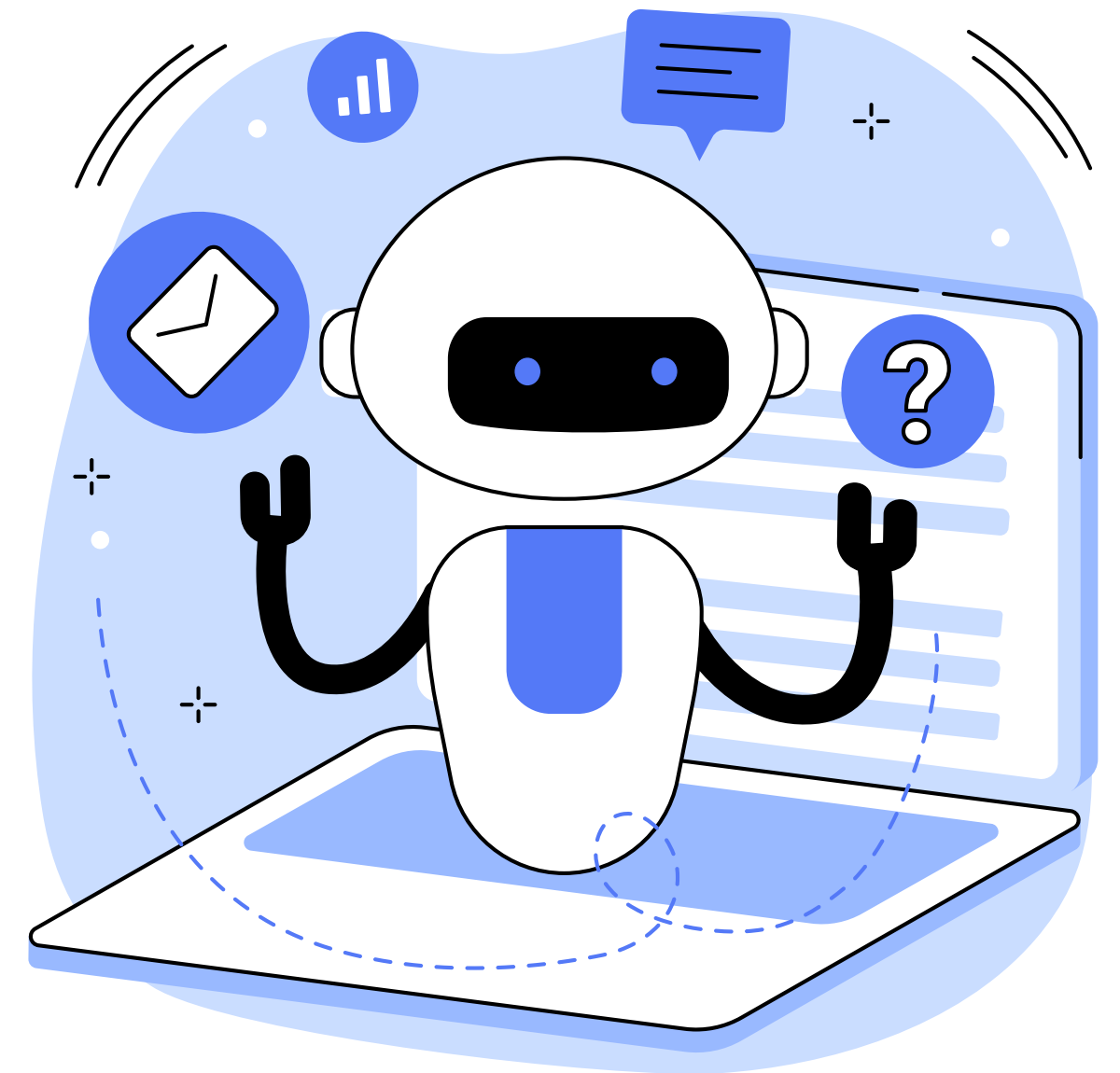
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5_ORGANIZE FOR READABILITY

• رتب الكود بشكل يسهل قراءته وفهمه.

- **Unclean code**

```
def save_data():  
    pass  
  
def clean_data():  
    pass  
  
def validate_data():  
    pass
```



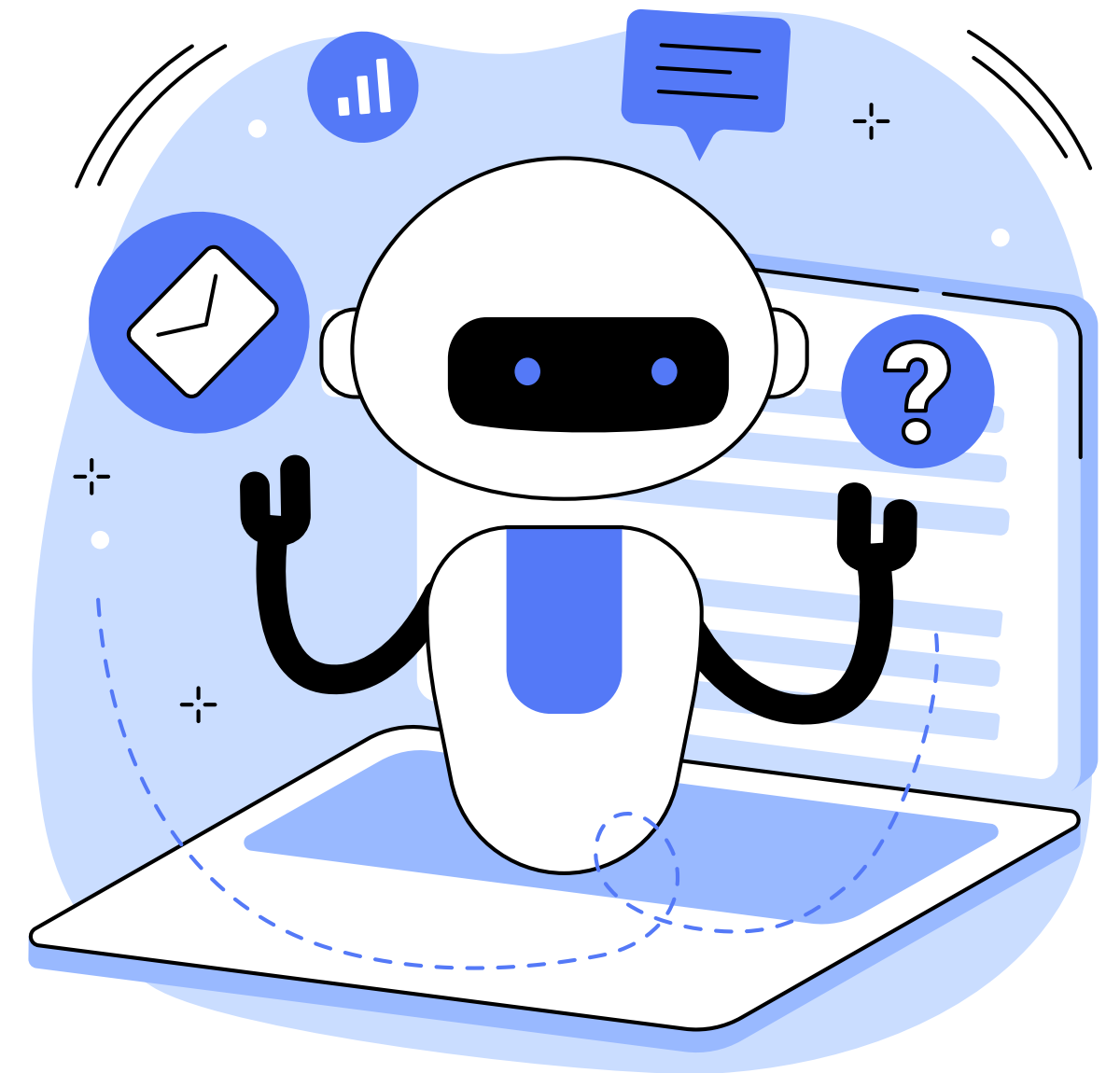
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5_ORGANIZE FOR READABILITY

• رتب الكود بشكل يسهل قراءته وفهمه.

- **clean code**

```
def validate_data():  
    pass  
  
def clean_data():  
    pass  
  
def save_data():  
    pass
```



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7_DON'T REPEAT YOURSELF (DRY)

- تجنب تكرار الكود واستخدم الدوال لإعادة الاستخدام.
- **Unclean code**

```
print("Hello " + name)
print("Hello " + user)
```

- **clean code**

```
def greet(person):
    print("Hello " + person)

greet(name)
greet(user)
```



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8_MINIMIZE DEPENDENCIES

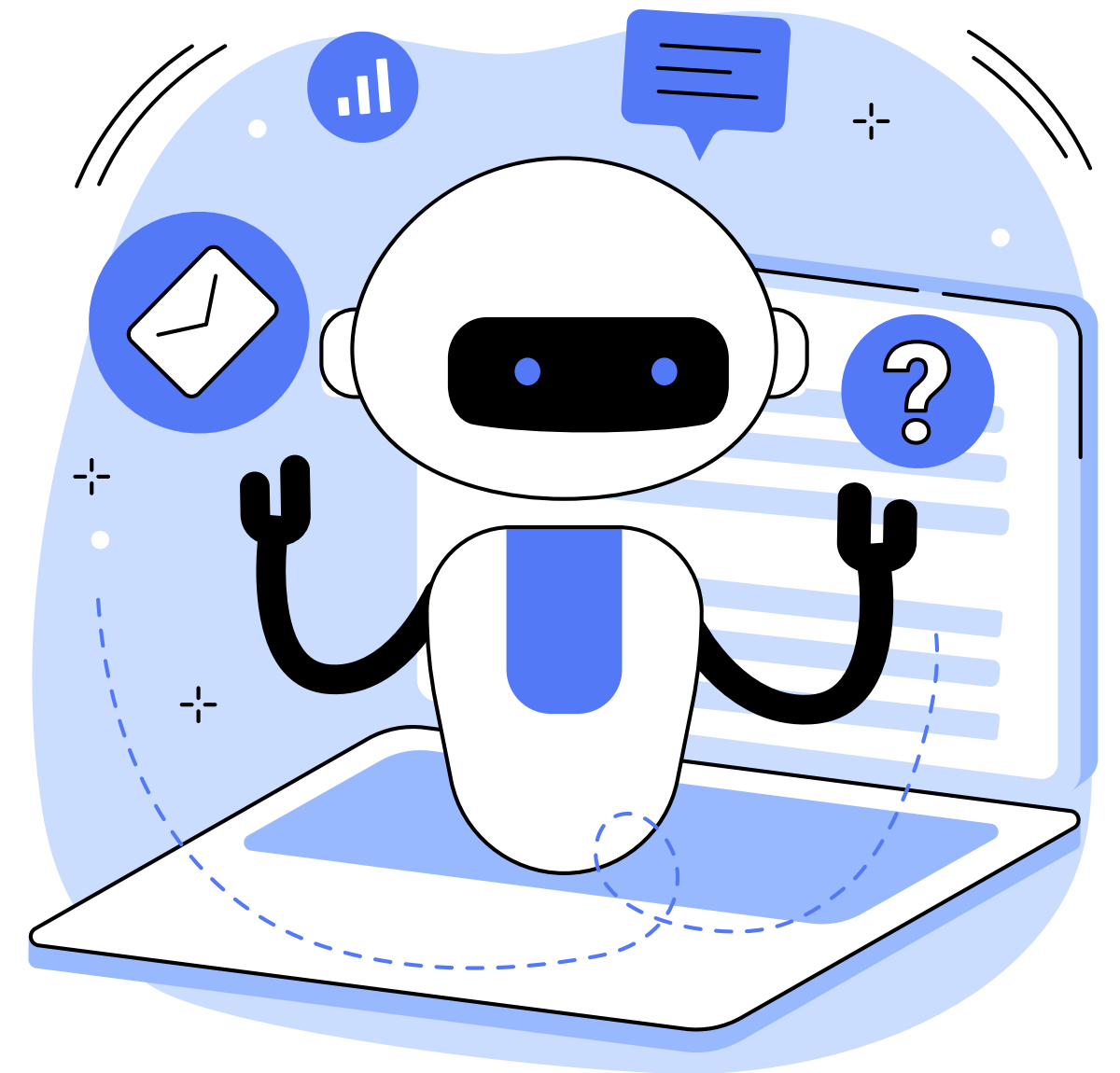
- اجعل الكود أقل اعتماداً على أجزاء أخرى حتى يكون مرناً وسهلاً للتغيير.

- **Unclean code**

```
def send_email():  
    smtp = SMTP('server.com')  
    smtp.send()
```

- **clean code**

```
def send_email(smtp_server):  
    smtp_server.send()
```



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9_PROPER FORMATTING

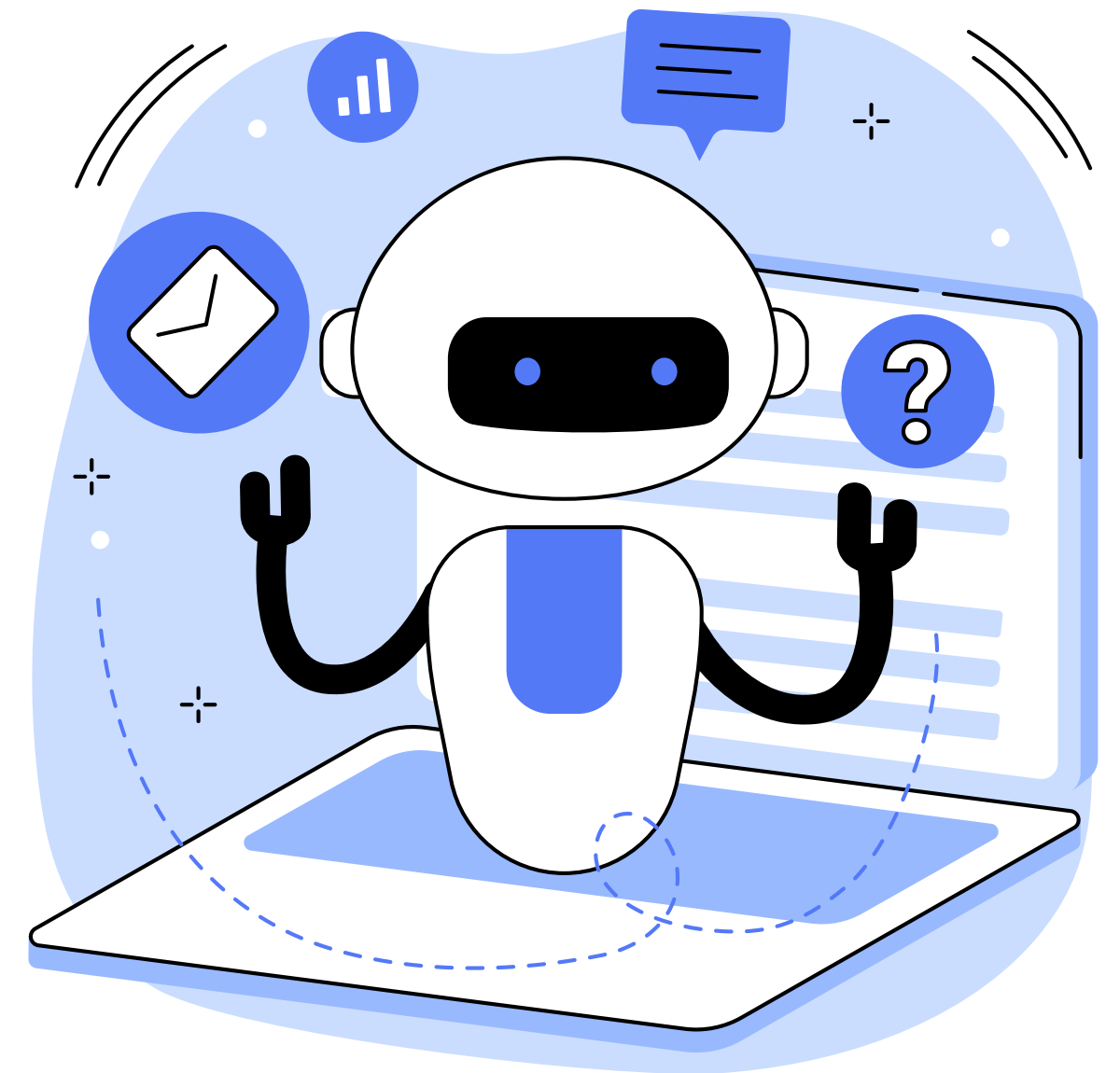
- اكتب الكود بشكل مرتب ومنسق لسهولة القراءة.

- **Unclean code**

```
def add(a,b):return a+b
```

- **clean code**

```
def add(a, b):  
    return a + b
```



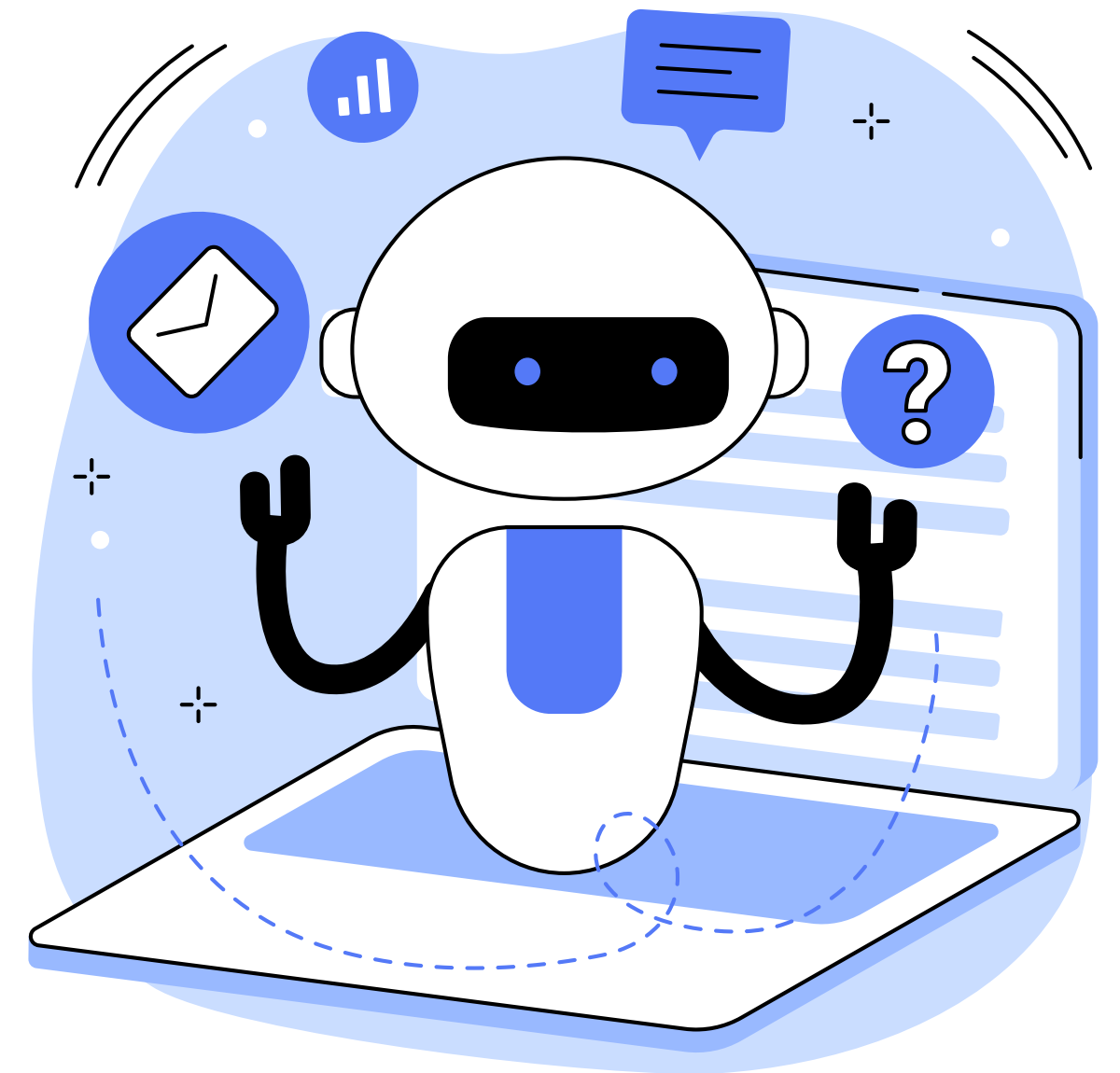
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10_SMALL CLASSES

- اجعل الكلاسات صغيرة تقوم بوظيفة محددة واحدة.

- **Unclean code**

```
class Manager:  
    def hire(self): pass  
    def fire(self): pass  
    def calculate_salary(self): pass  
    def promote(self): pass
```



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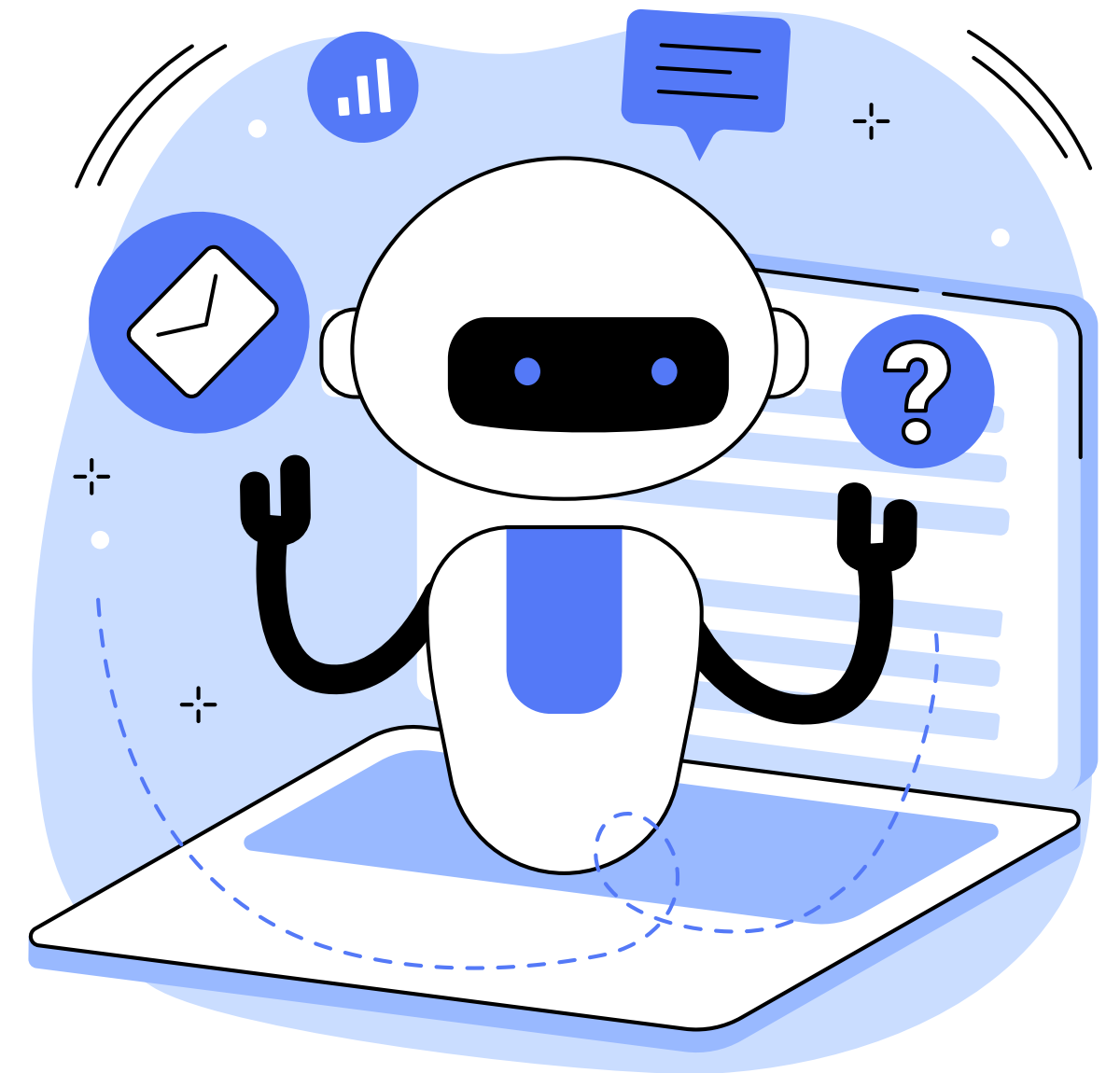
10_SMALL CLASSES

- اجعل الكلاسات صغيرة تقوم بوظيفة محددة واحدة.
- **clean code**

```
class HRManager:
    def hire(self): pass
    def fire(self): pass

class FinanceManager:
    def calculate_salary(self): pass

class PromotionManager:
    def promote(self): pass
```



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11_EXPRESS INTENT

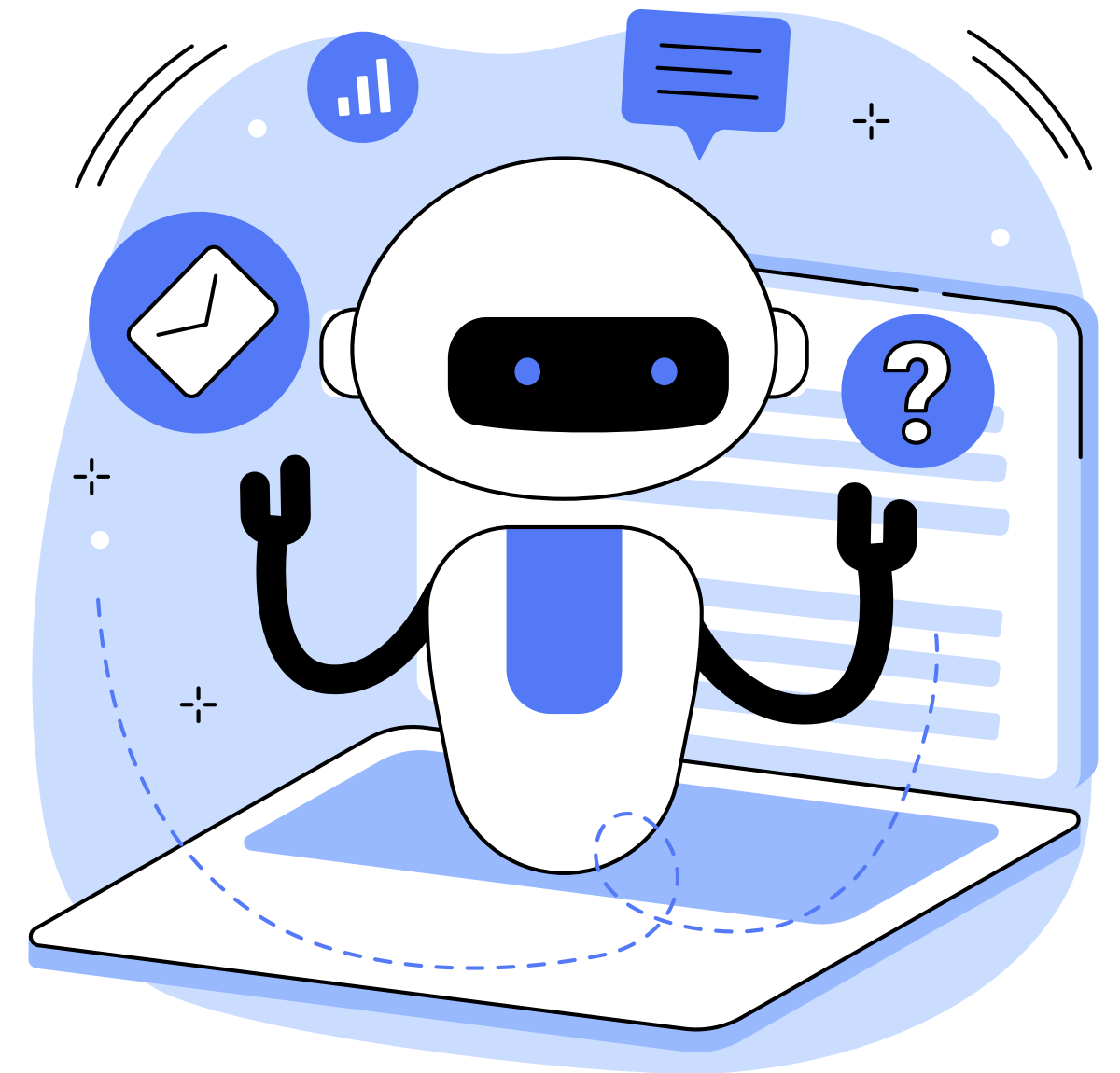
- اجعل نية الكود واضحة بدون الحاجة لتخمين القارئ.

- **Unclean code**

```
d = []
```

- **clean code**

```
students_list = []
```



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12_CODE FOR OTHERS

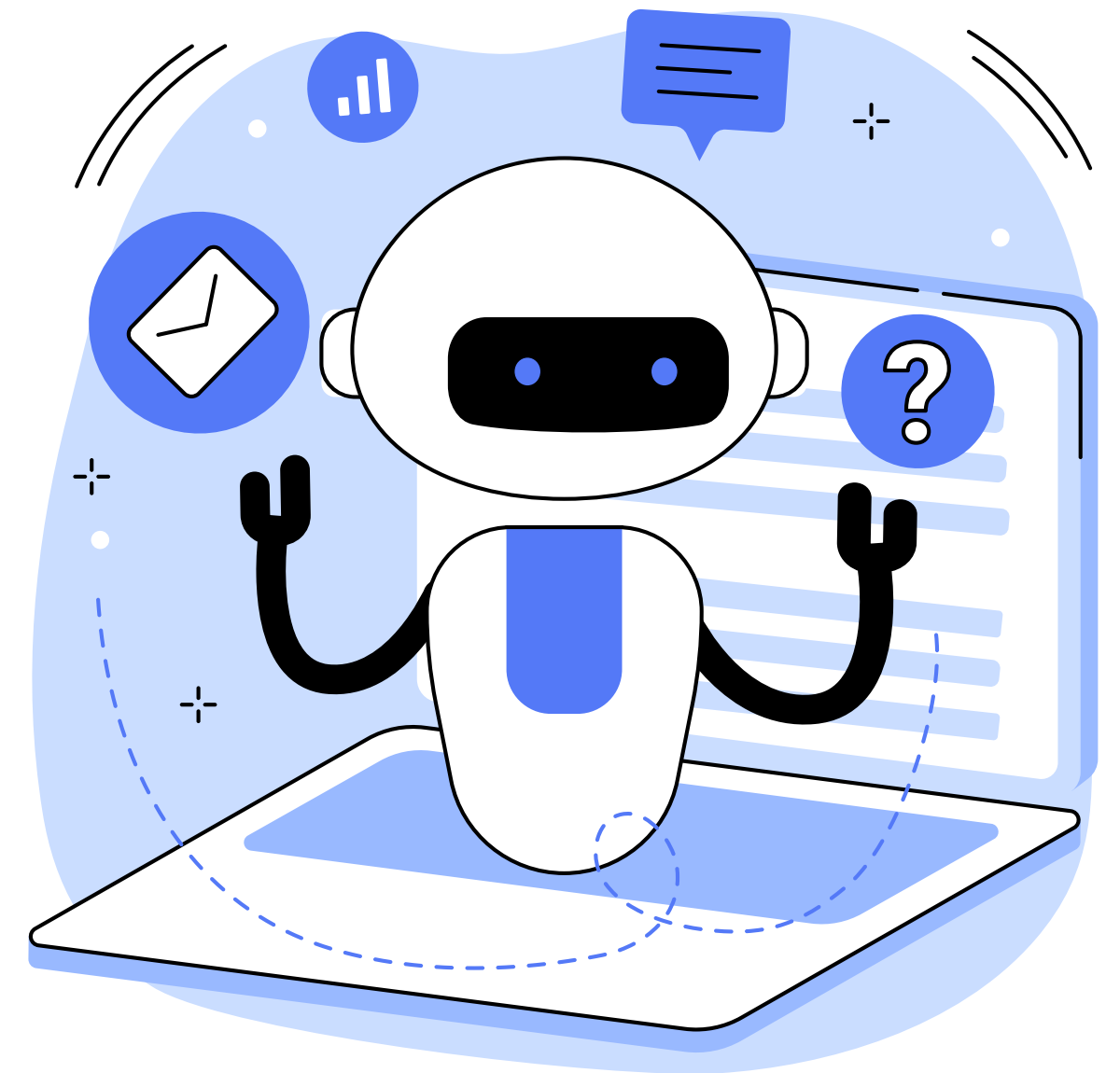
- اكتب الكود كأن غيرك سيقراه .

- **Unclean code**

```
def cc(n):  
    return n*n*n
```

- **clean code**

```
def calculate_cube(number):  
    return number ** 3
```



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13_CODE FOR CHANGE

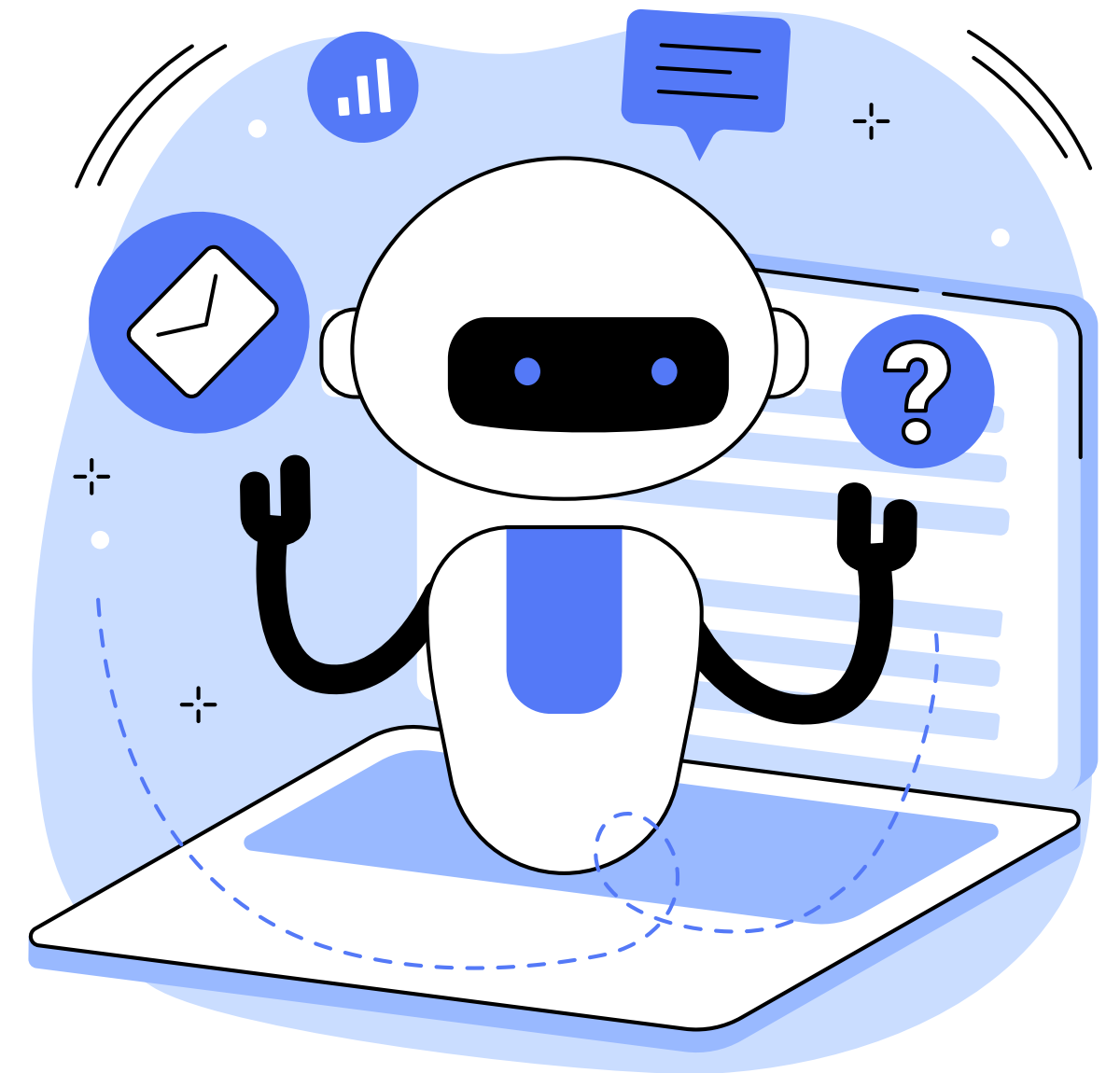
• اكتب كوداً قابلاً للتغيير بسهولة مستقبلاً.

- **Unclean code**

```
def connect_to_mysql():  
    # hardcoded connection
```

- **clean code**

```
def connect_to_database(db_type):  
    if db_type == "mysql":  
        # connect to mysql  
    elif db_type == "postgres":  
        # connect to postgres
```



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