# Python快速入门

嵩 天

# 实例2：日志文件分析

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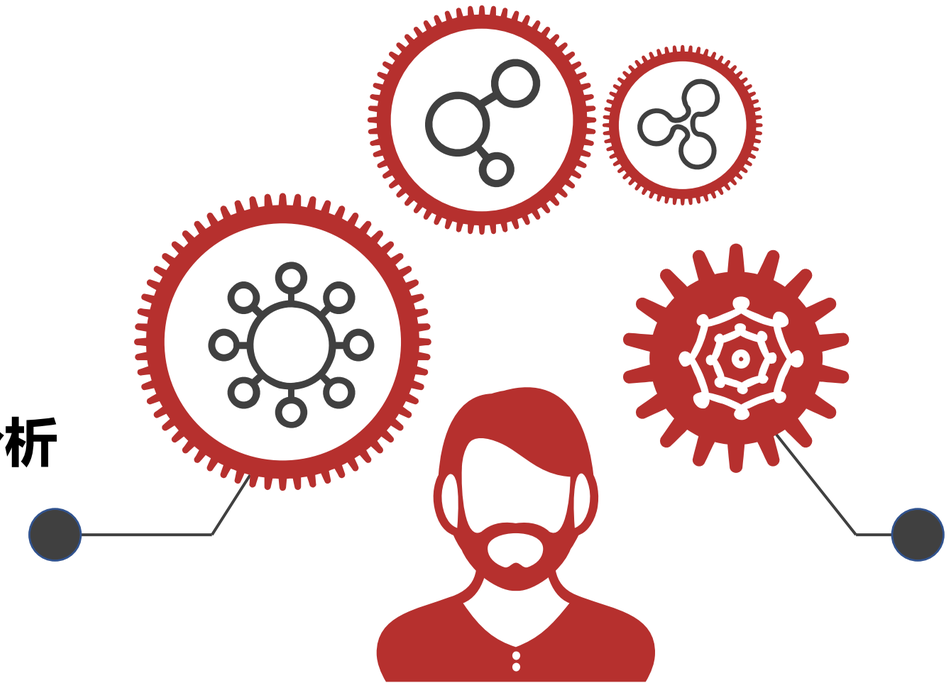
Python快速入门

# 单元开篇

Python123

# 单元开篇

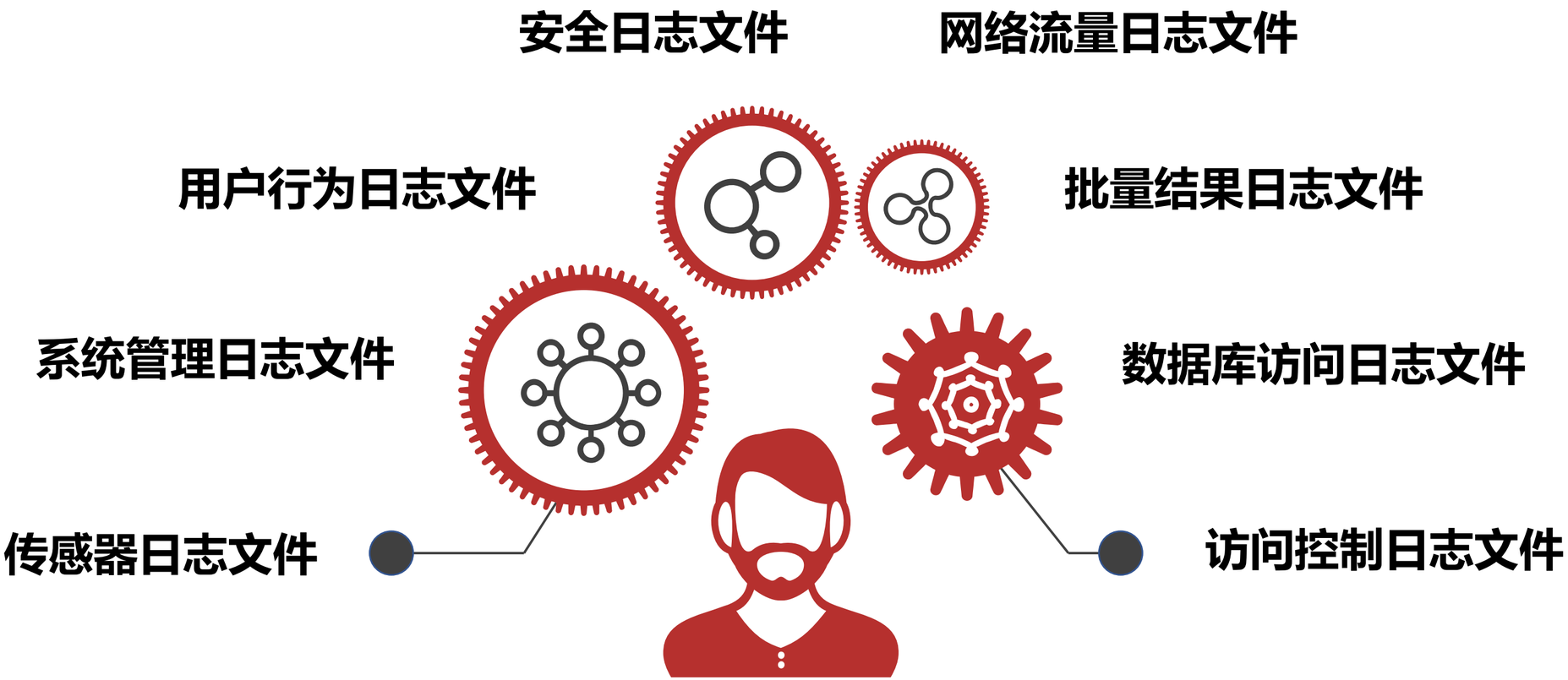
(1) "日志文件分析"需求分析



(2) "日志文件分析"实例编写

## 实例2：日志文件分析

# 单元开篇

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## 实例2：日志文件分析

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# "日志文件分析"需求分析

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# 程序需求

## 传感器日志文件

| 日期Date | 时间Time | 温度Temperature | 湿度Humidity | 光照Light | 电压Voltage |
| --- | --- | --- | --- | --- | --- |
| yyyy-mm-dd | hh:mm:ss.xxx | real | real | real | real |

- 日志文件中，每行是一条日志信息
- 每行日志包括4个传感器数据：温度、湿度、光照和电压

# 程序需求

**计算传感器日志文件中温度数据的平均值**

- 日志文件包含1万条数据
- 温度数据在文件的第3列

# 程序需求

**计算传感器日志文件中温度数据的平均值**

- 输入：日志文件 sensor-data.txt
- 输出：平均温度数值，保留小数点两位

# 程序需求

**部分日志数据**

2018-02-28 01:03:16.33393 19.3024 38.4629 45.08 2.68742

2018-02-28 01:06:16.013453 19.1652 38.8039 45.08 2.68742

2018-02-28 01:06:46.778088 19.175 38.8379 45.08 2.69964

2018-02-28 01:08:45.992524 19.1456 38.9401 45.08 2.68742

……

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# "日志文件分析"实例编写

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# 代码演示

```
#SensorReader.py
#2018-02-28 01:03:16.33393 19.3024 38.4629 45.08 2.68742
try:
    f = open("sensor-data.txt", "r")
    avg, cnt = 0, 0
    for line in f:
        ls = line.split()
        cnt += 1
        avg += eval(ls[2])
    print("平均的温度值是: {:.2f}".format(avg / cnt))
    f.close()
except:
    print("文件打开错误")
```

# 代码演示

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```
#SensorReader.py
#2018-02-28 01:03:16.33393 19.3024 38.4629 45.08 2.68742
try:
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注释

# 代码演示

```
#SensorReader.py
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try:
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    print("文件打开错误")
```

异常处理

# 代码演示

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```

文件打开

文件关闭

# 代码演示

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    f.close()
except:
    print("文件打开错误")
```

变量计数

# 代码演示

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```

遍历循环

# 代码演示

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```

→ 识别每列

# 代码演示

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    f.close()
except:
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```

选取温度

# 代码演示

```
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    print("平均的温度值是: {:.2f}".format(avg / cnt))
    f.close()
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    print("文件打开错误")
```

→ 打印结果

→ 打印结果

# 注意事项

## 相比其他编程语言

- 每行后没有分号;
- 没有begin, end, {, }等表示代码归属的元素，只用缩进表达代码所属关系
- 变量直接使用，无需类型声明
- open()、close()、split()等基本函数和方法直接使用，无需引用

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# Thank you