CLEAN UP! COOL DOWN!

PC Cleaning and Maintenance

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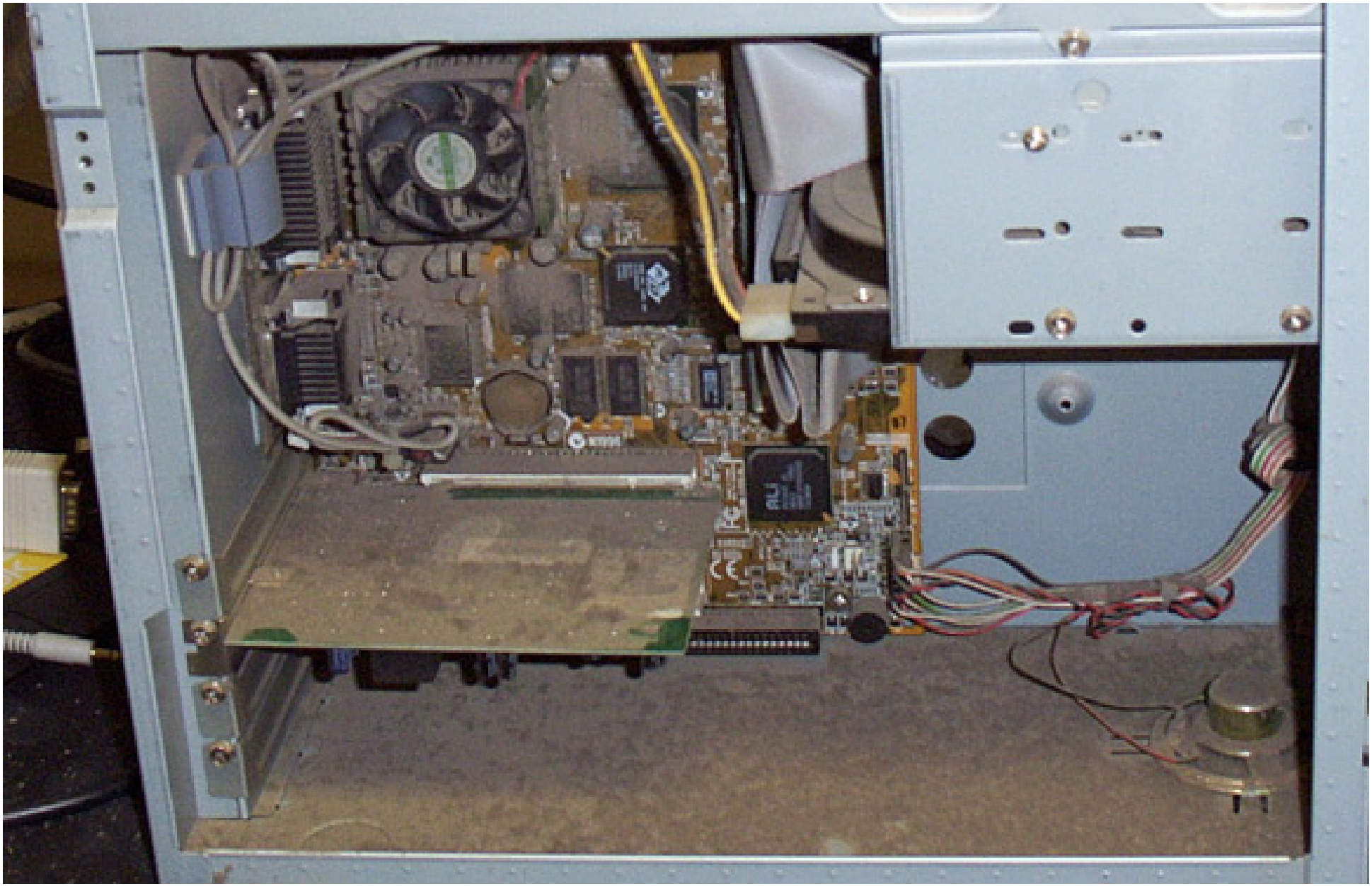
Why do we need to clean inside our computers?

- They get full of dust and debris over time
- Dust causes heat buildup due to reduced airflow
- This leads to:
    - Increased noise
    - Shorter lifespan of components
    - Increased risk of faults

IT IS IMPORTANT TO

CLEAN COMPUTERS PERIODICALLY



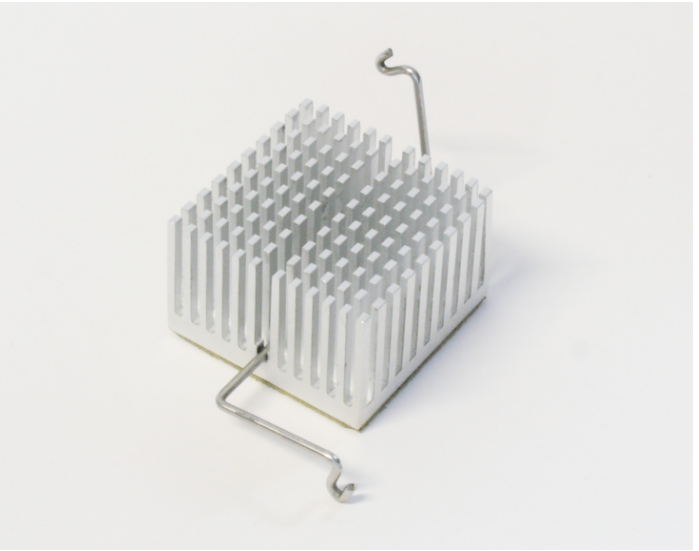
HOW AIR COOLING WORKS

- Biggest sources of heat need special cooling

- Heatsinks are attached to these components

- Airflow is created to move cool air around

- Warm air is ejected from the environment




LGA775
ICS
CN-0W5457-70831-53N-D7LA
REV A00
Made in China

KEY AIRFLOW POINTS

- Better airflow leads to better cooling ability

- Smooth, uninterrupted airflow leads to quieter operation

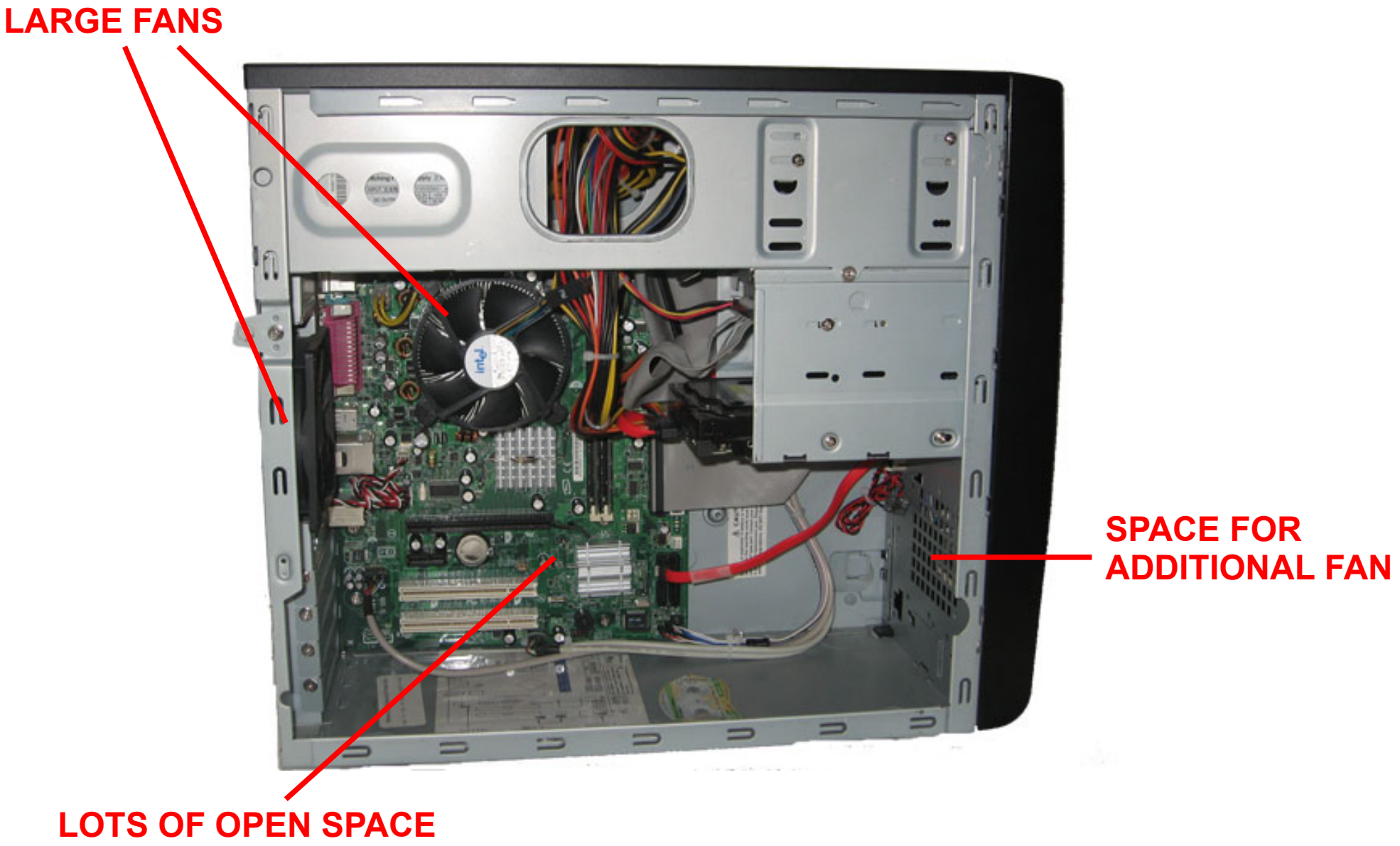
- Desktop PCs tend to have a more general airflow system

- Laptop PCs tend to have a very specific airflow system which is:

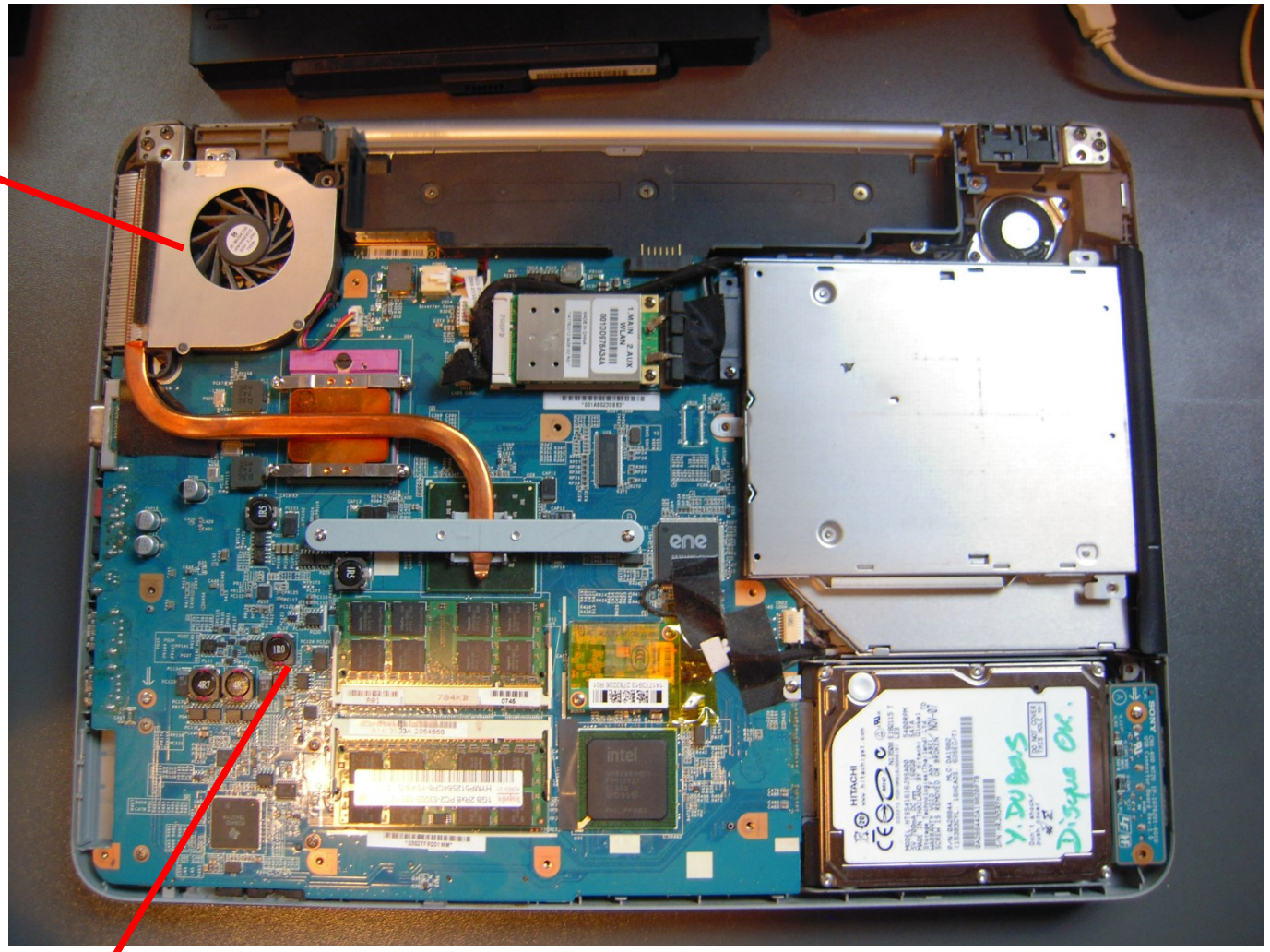
    - More sensitive to dust and debris
    - More prone to noise and overheating

LAPTOPS FAIL DUE TO HEAT-RELATED ISSUES MUCH MORE FREQUENTLY THAN DESKTOPS

TYPICAL DESKTOP PC



TYPICAL LAPTOP



THIS IS THE SINGLE EXHAUST POINT FOR THIS LAPTOP'S FAN!

What are the typical steps in a PC maintenance session?

Like a service for your car

1. Open the machine to access components

- Online guides are useful for laptops

2. Remove dust and foreign matter

- Dust on boards as well as cooling parts

3. Clean fan blade surfaces to improve their efficiency

- Fans can trap a lot of dust!

4. Consider changing thermal interface material (thermal paste)

- Thermal paste can dry out and become ineffective

5. Assess airflow and modify if necessary

- Desktops can be improved
- Laptops should be used on a flat surface!

BEST PRACTISE AND SAFETY

- Be aware of electrostatic discharge: **Ground yourself**
- Brushes and vacuum cleaners can **generate ESD**
- **Exercise care** while you work
- Be aware of electrical danger: **switch off** or unplug
- **PPE**: Dust can be very unpleasant

Which tools are needed for cleaning?

- **SCREWDRIVERS**
  For opening cases or removing parts

- **BRUSHES**
  Different sizes for dislodging stubborn dust

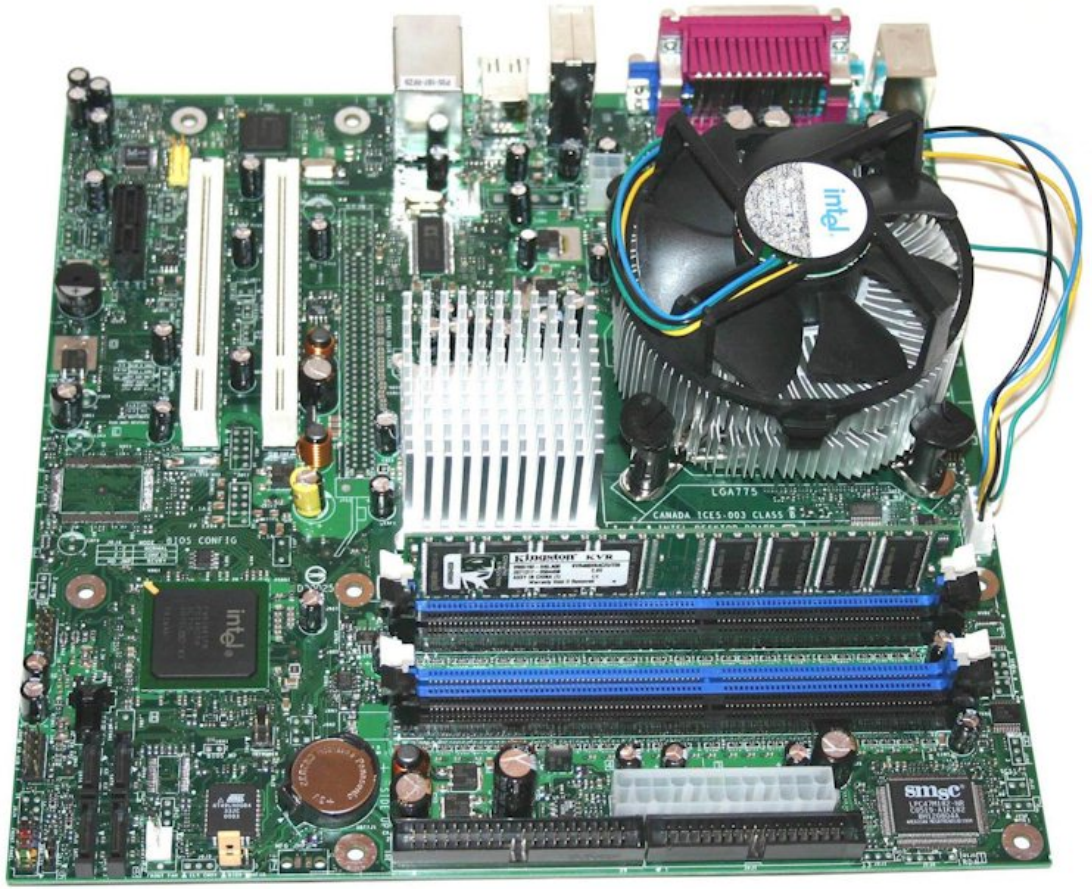
- **CLOTH OR KITCHEN ROLL**
  More dust on a cloth means less in the air

- **COMPRESSED AIR**
  For driving dust out of hard to reach areas gently

- **VACUUM CLEANER**
  For removing majority of loose dust

Key heat sources in a typical computer:

CPU **GPU** **CHIPSETS**



Don't worry about technical details – **LOOK FOR HEATSINKS OR FANS!**

PLAN OF ACTION

1. Open case

- Discharge static!

2. Clear obvious buildup

- Remove parts trapping dust/debris

3. Dust/vacuum

- Avoid spinning fans!
- Take care with vacuum!

4. Assess airflow

- Cable routing
- Fan placement

5. Reassemble

(Thermal paste session)