

Irreducible Complexity

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Robot

Trimal

✓ 000

✓ 001

✓ 002

✓ 010

✓ 011

✓ 012

✓ 020

✓ 021

✓ 022 $\rightarrow 0 \times 3^2 + 2 \times 3^1 + 2 \times 3^0 = 8_{10(\text{decimal})}$

✓ 100

Binary

✓ 0000

✓ 0001

✓ 0010

✓ 0011

✓ 0100

✓ 0101

✓ 0110

✓ 0111 $\rightarrow 0 \times 2^3 + 1 \times 2^2 + 1 \times 2^1 + 1 \times 2^0 = 7_{10(\text{decimal})}$

✓ 1000

Tetramel

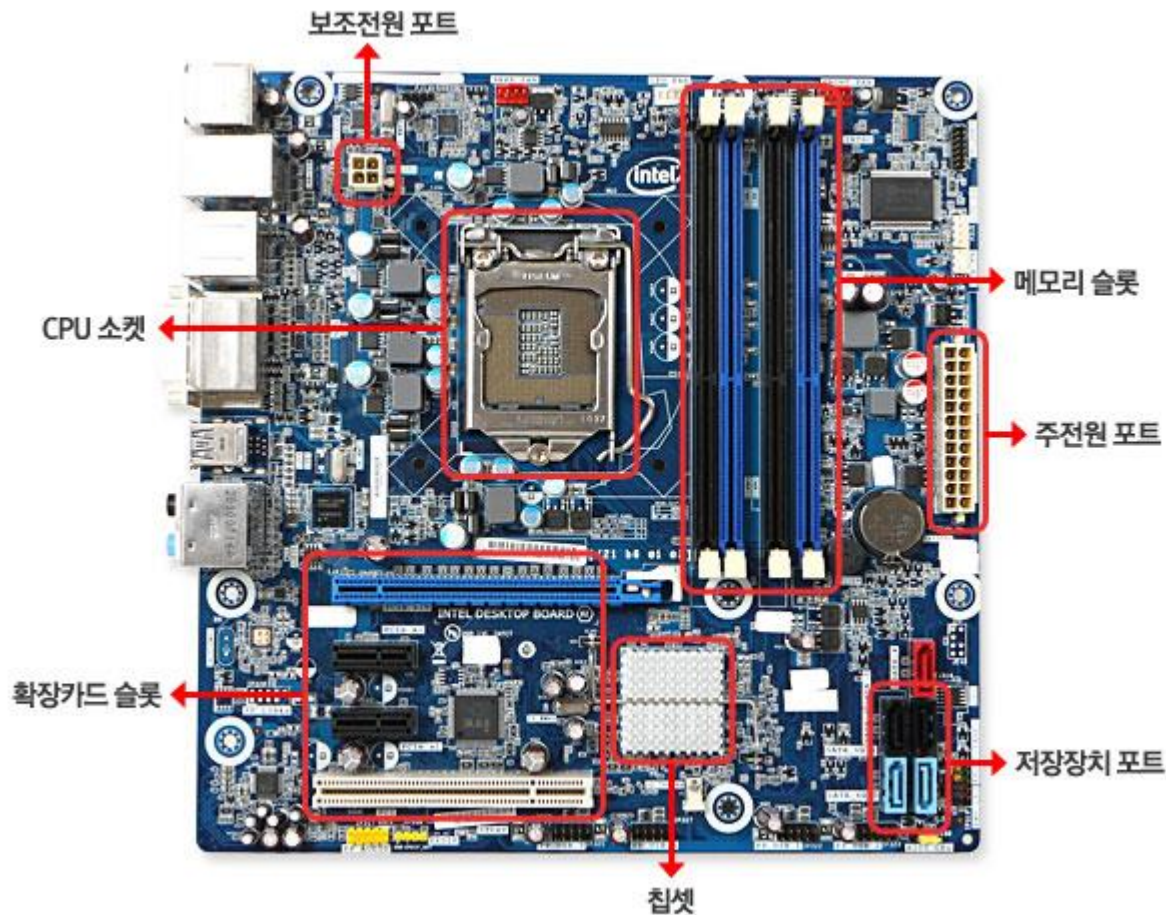
✓ 000
✓ 001
✓ 002
✓ 003
✓ 010
✓ 011
✓ 012
✓ 013
✓ 020
✓ 021

Binary 00 → A
Binary 01 → T
Binary 10 → C
Binary 11 → G

✓ AAA
✓ AAT
✓ AAC
✓ AAG
✓ ATA
✓ ATT
✓ ATC
✓ ATG
✓ ACA
✓ ACT

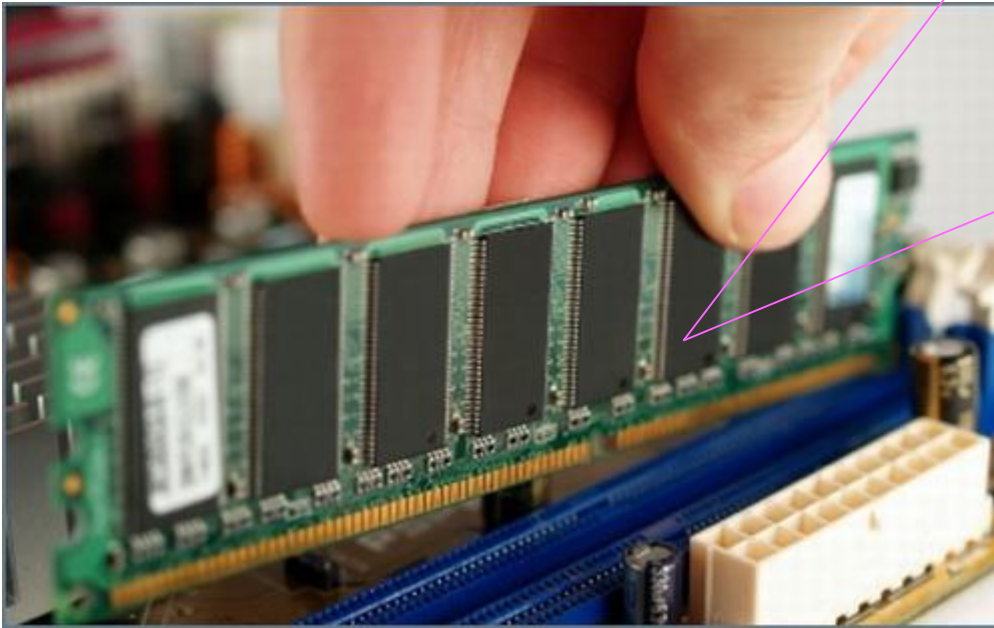
Computer

- ✓ Hardware
- ✓ Software : Meaningful chunk of binary number
 - Q. Where is binary numbers?



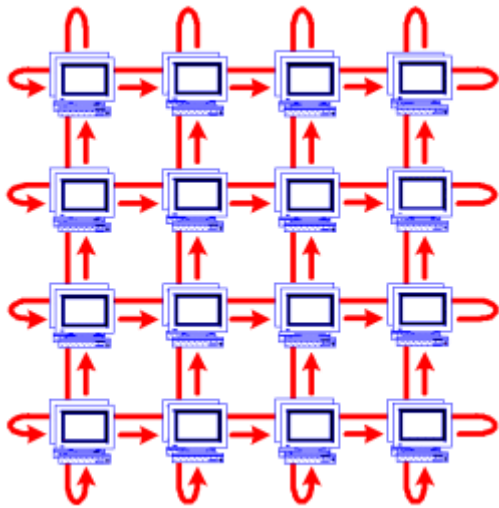
Binary numbers in Memory, Ex) Pc Online Game

- ✓ Some binary number determines a color of skin
 - Data
- ✓ Some binary number determines a motion of a character
 - Code

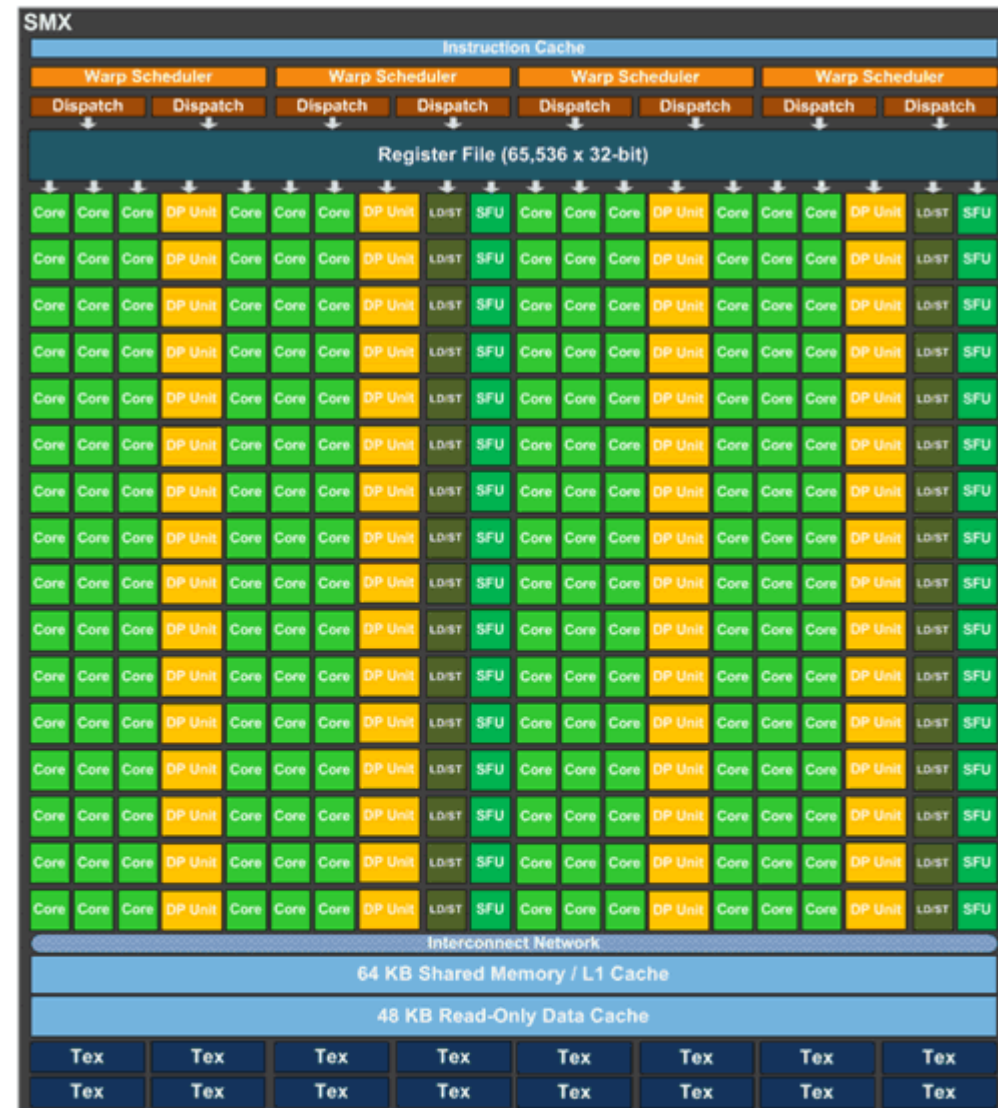


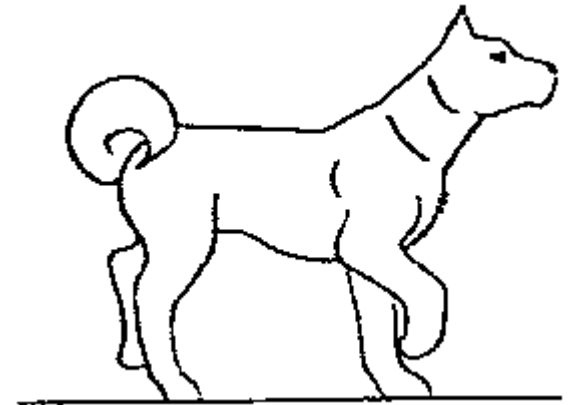
Recent Computer Architecture

- ✓ Parallel
- ✓ Multicore



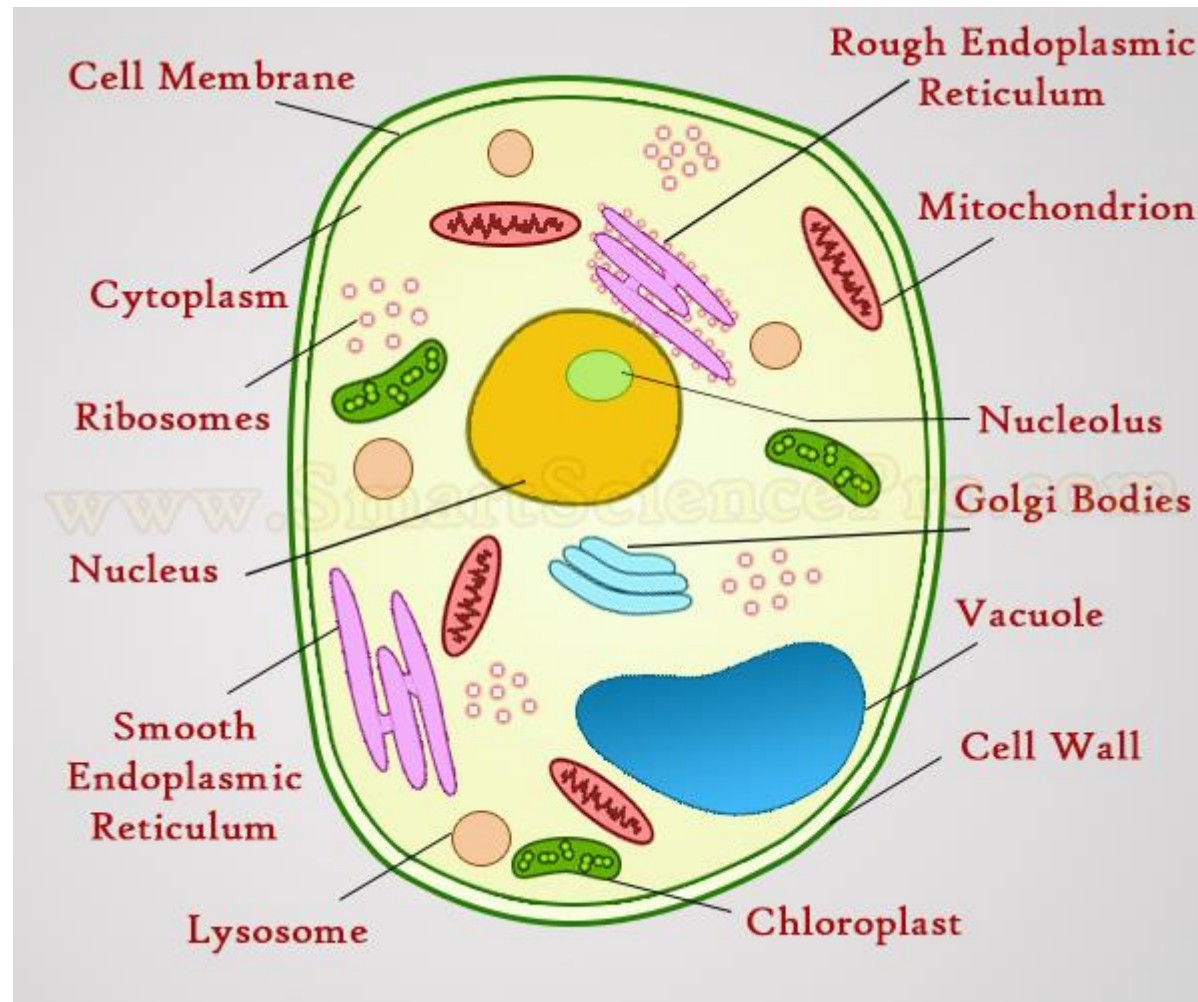
NVIDIA Kepler SM



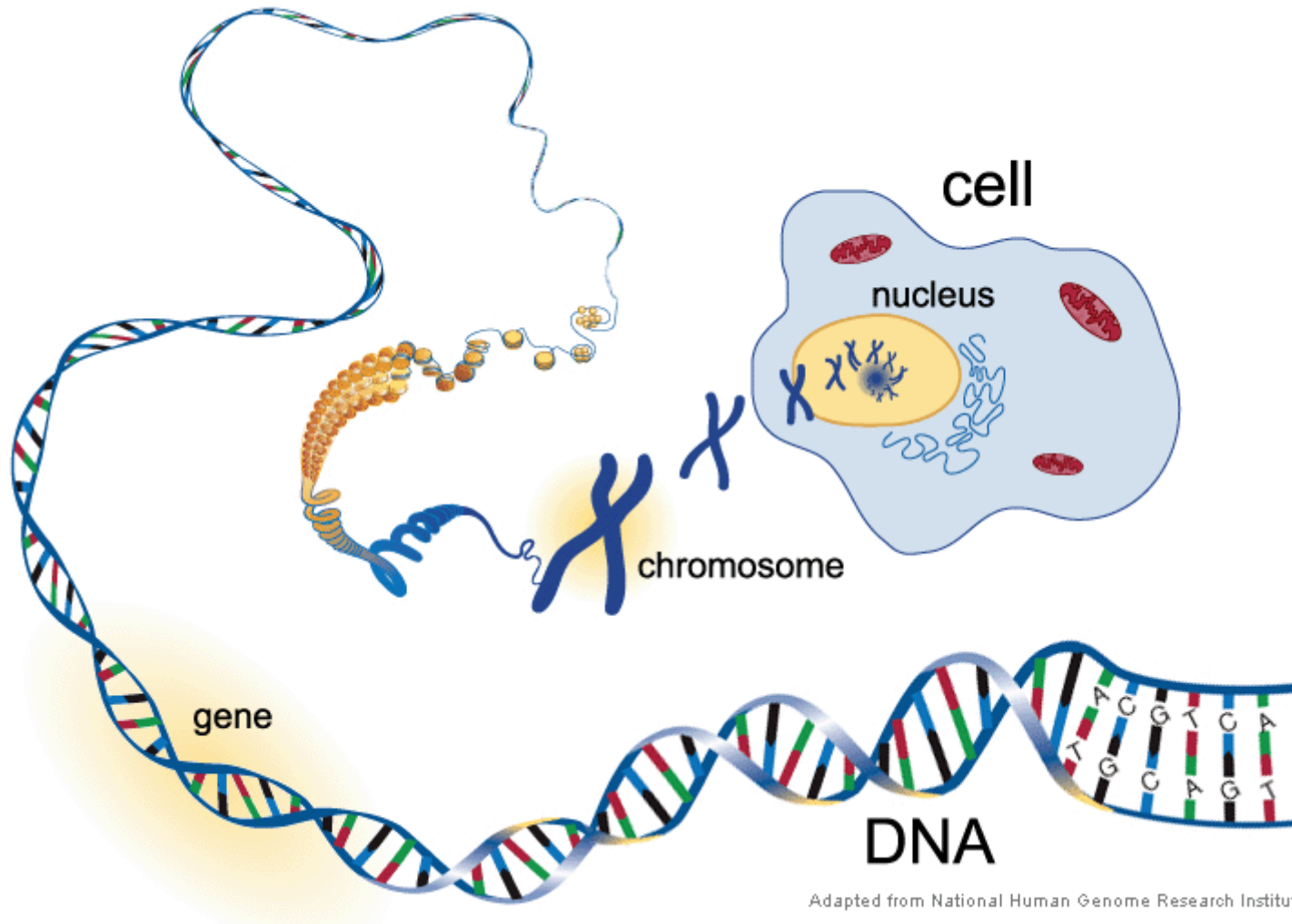


Animal

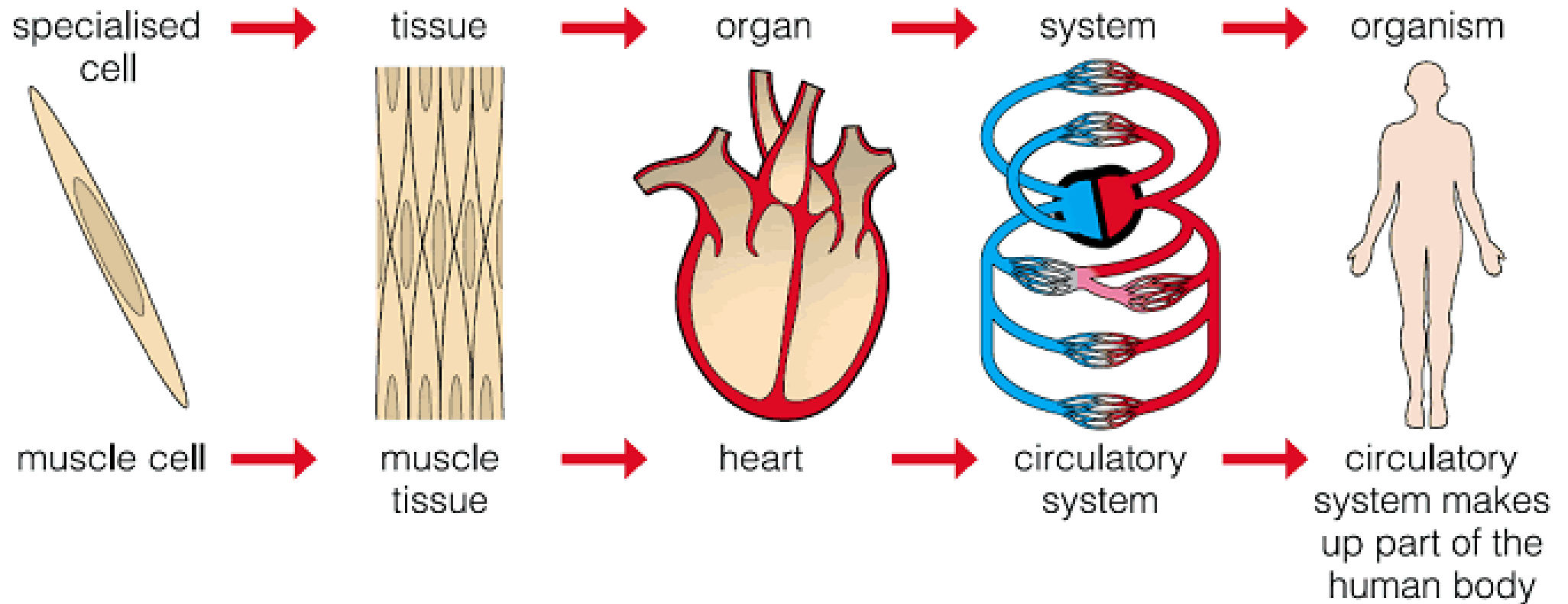
Structure of a Cell



Cell ← Nucleus ← Chromosome ← Dna : Gene

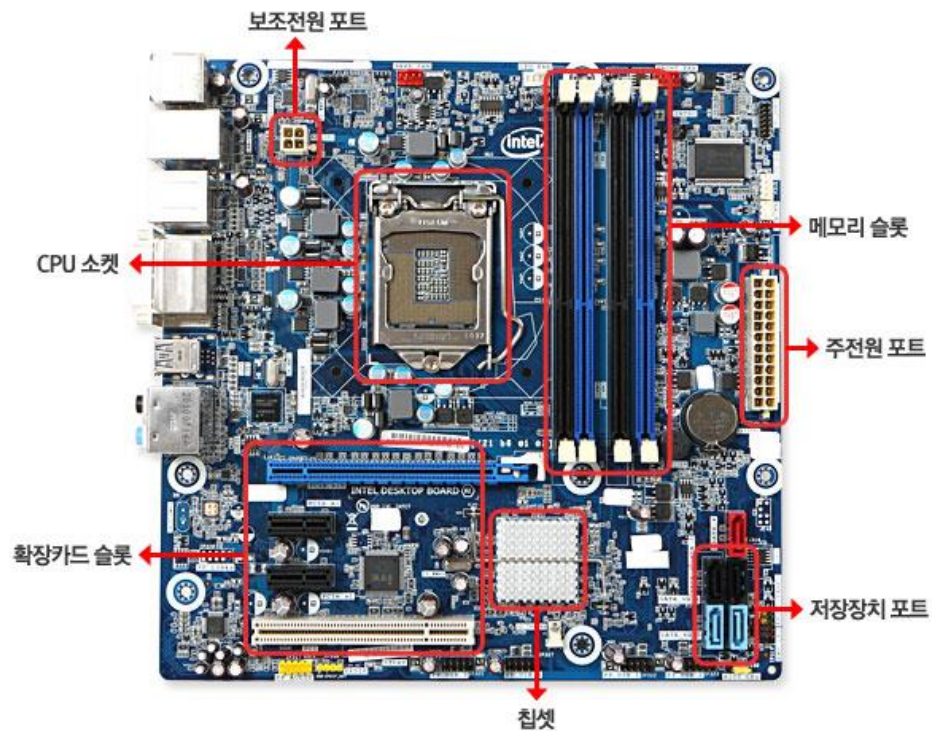


Cell → Tissue → Organ → Object

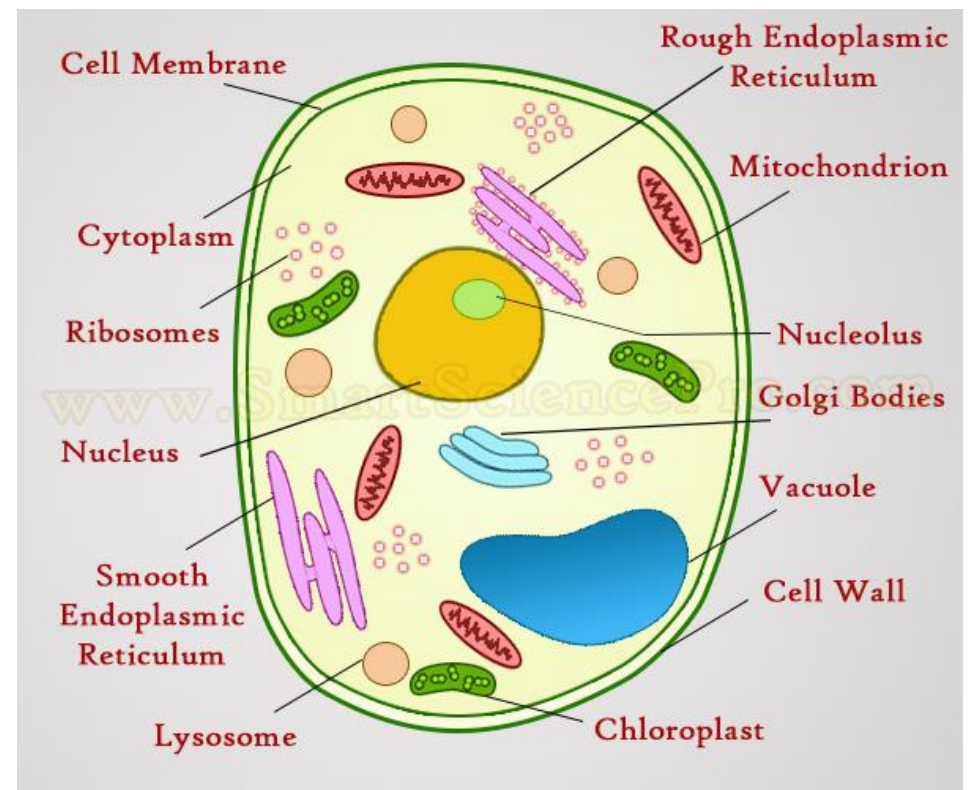


Similarity of Computer and Cell

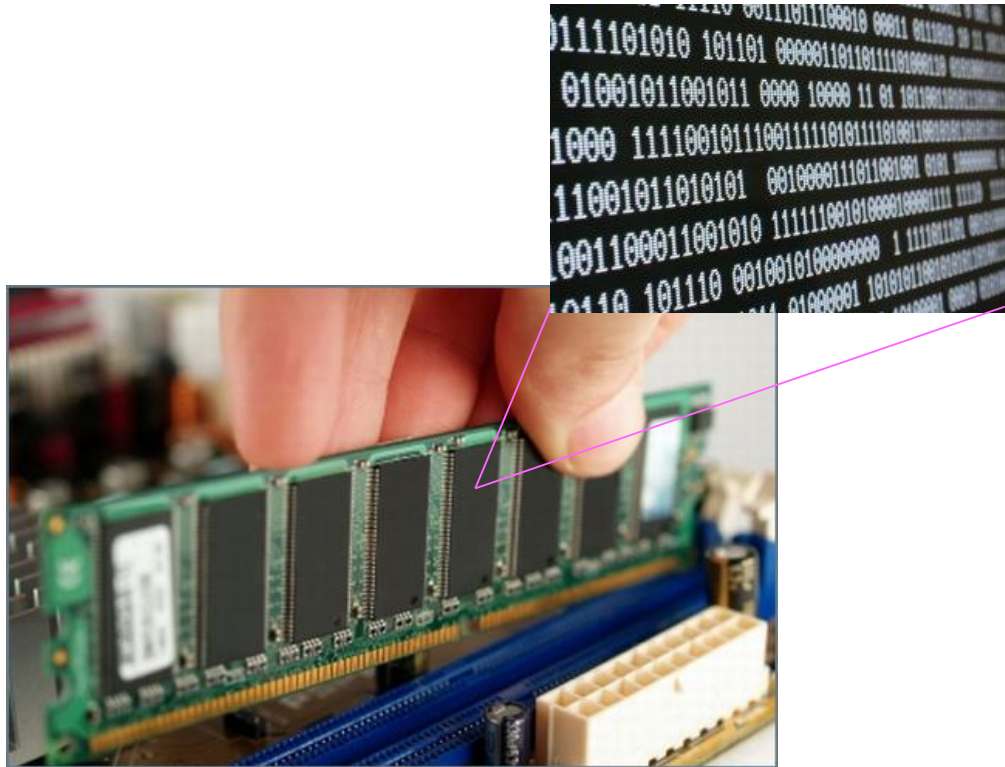
Computer



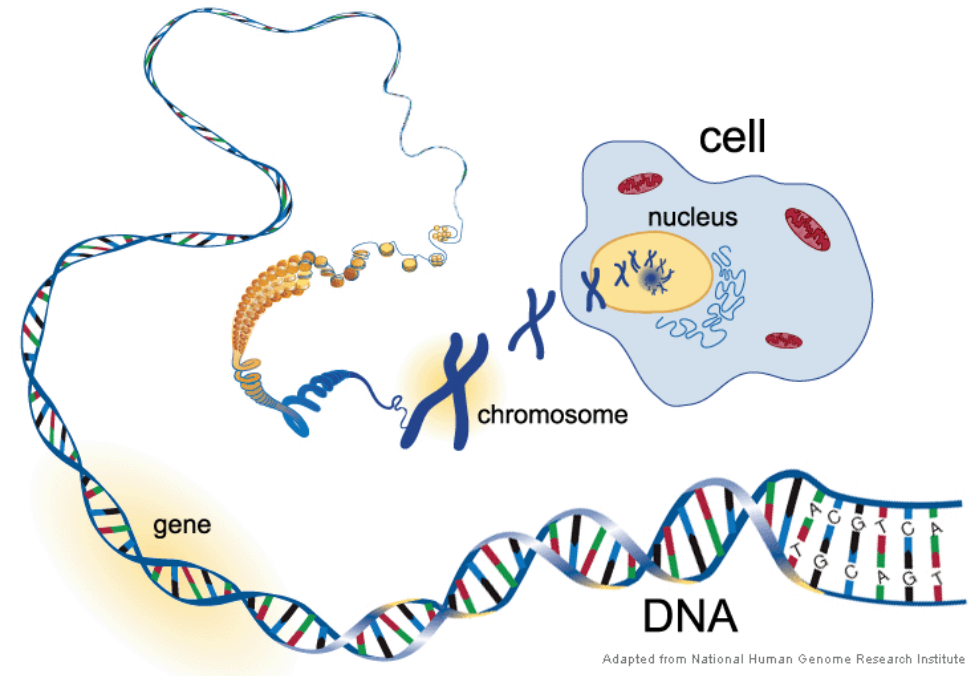
Cell



Binary Number



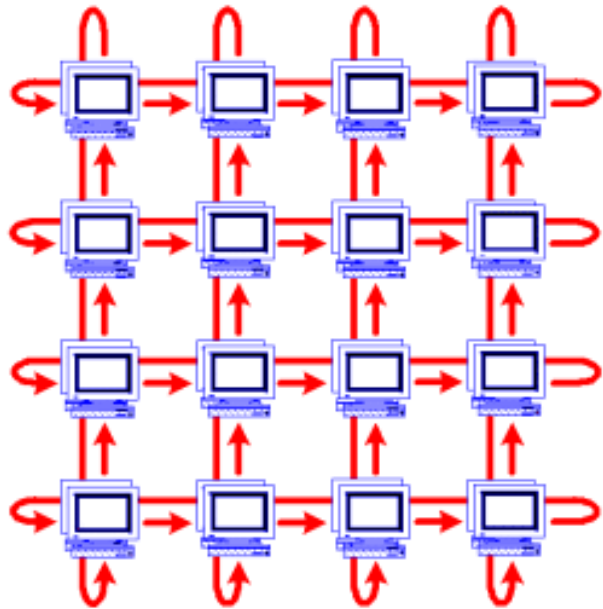
DNA



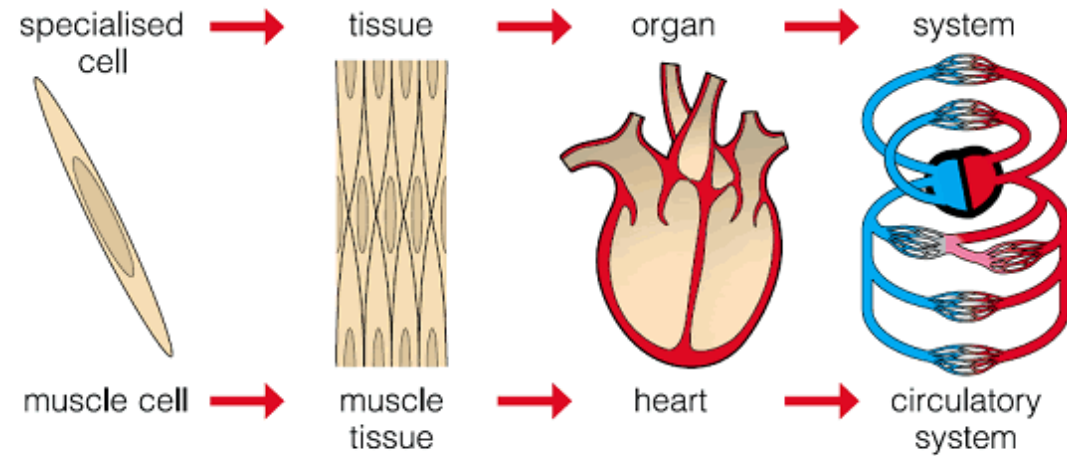
Binary 00 → A
Binary 01 → T
Binary 10 → C
Binary 11 → G

Multicore Architecture

- ✓ Parallel
- ✓ Multicore

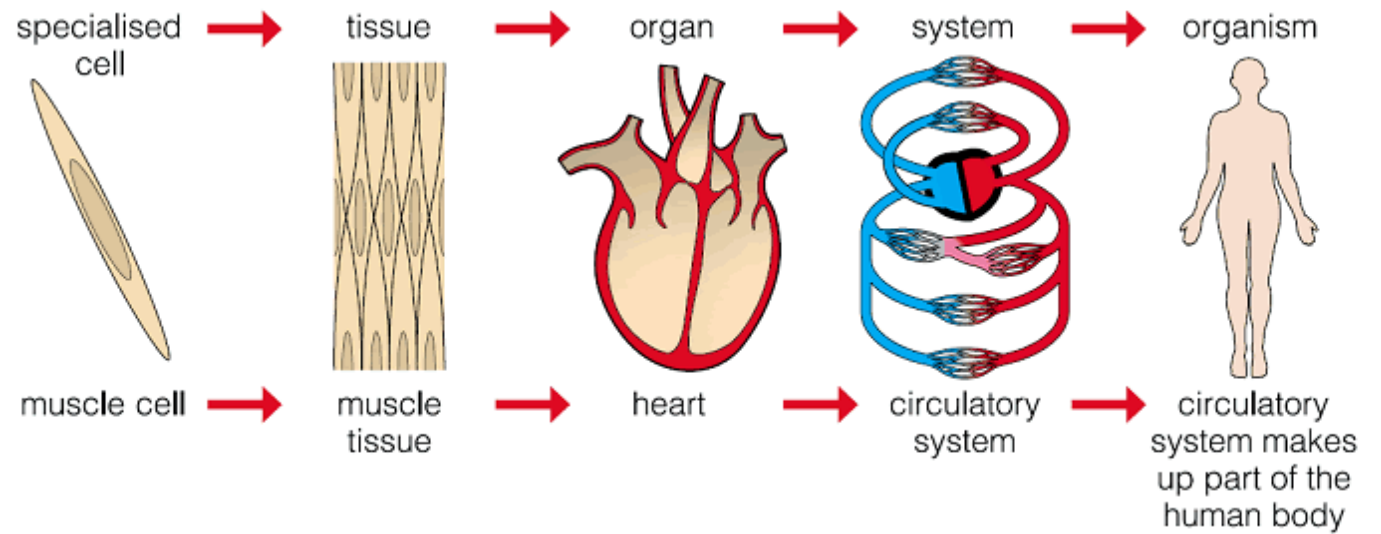


Tissue



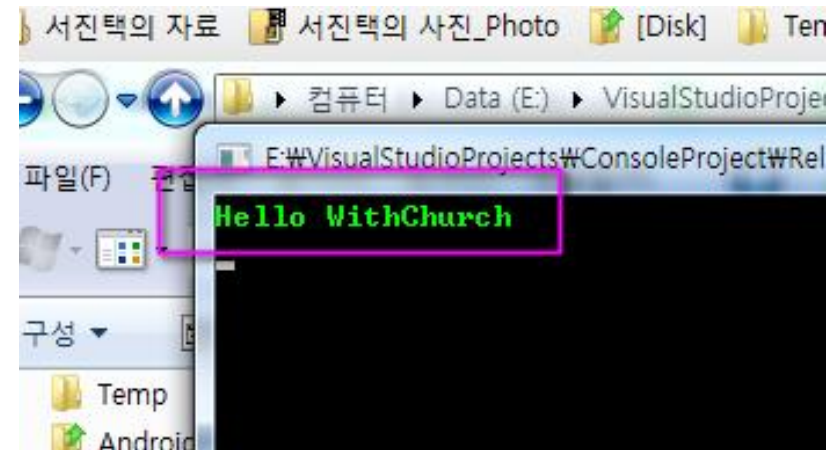
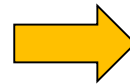
Robot

Living Object

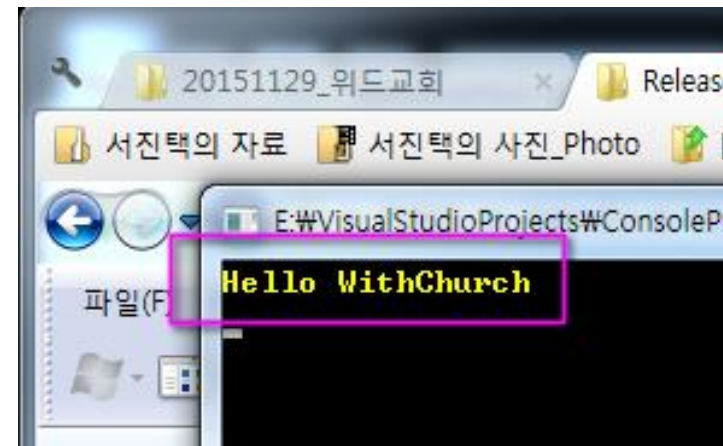
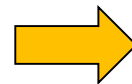


Demo: Gene Manipulation

0000194B	72	65	73	65	6E	74	00	CA	00	44	65
00001964	51	75	65	72	79	50	65	72	66	6F	72
0000197D	02	47	65	74	54	69	63	6B	43	6F	75
00001996	6E	74	54	68	72	65	61	64	49	64	00
000019AF	72	6F	63	65	73	73	49	64	00	79	02
000019C8	73	46	69	6C	65	54	69	6D	65	00	3A
000019E1	64	6C	65	72	33	00	00	00	00	00	00
000019FA	00	00	00	00	00	00	4E	E6	40	BB	B1
00001A13	FF	01	00	00	00	0A	00	00	00	00	00
00001A2C	00	00	00	00	00	00	00	00	00	00	00
00001A45	00	00	00	00	00	00	00	00	00	00	00
00001A5E	00	00	00	00	00	00	00	00	00	00	00
00001A77	00	00	00	00	00	00	00	00	00	00	00
00001A90	00	00	00	00	00	00	00	00	00	00	00



0000194B	72	65	73	65	6E	74	00	CA	00	44	65
00001964	51	75	65	72	79	50	65	72	66	6F	72
0000197D	02	47	65	74	54	69	63	6B	43	6F	75
00001996	6E	74	54	68	72	65	61	64	49	64	00
000019AF	72	6F	63	65	73	73	49	64	00	79	02
000019C8	73	46	69	6C	65	54	69	6D	65	00	3A
000019E1	64	6C	65	72	33	00	00	00	00	00	00
000019FA	00	00	00	00	00	00	4E	E6	40	BB	B1
00001A13	FF	01	00	00	00	0E	00	00	00	00	00
00001A2C	00	00	00	00	00	00	00	00	00	00	00
00001A45	00	00	00	00	00	00	00	00	00	00	00
00001A5E	00	00	00	00	00	00	00	00	00	00	00
00001A77	00	00	00	00	00	00	00	00	00	00	00
00001A90	00	00	00	00	00	00	00	00	00	00	00



The image shows a screenshot of a C++ IDE with the file `ConsoleProject.cpp` open. The code is as follows:

```
1 // ConsoleProject.cpp : 콘솔 응용 프로그램에 대한 진입점
2 //
3 #include <iostream>
4 #include <windows.h>
5
6 WORD dwColor = 0x0A;
7 HANDLE hConsole = 0;
8
9 void main(void)
10 {
11     hConsole = GetStdHandle(STD_OUTPUT_HANDLE);
12     SetConsoleTextAttribute(hConsole, dwColor);
13     std::cout << "Hello WithChurch" << std::endl;
14     std::cin.get();
15 }
16
```

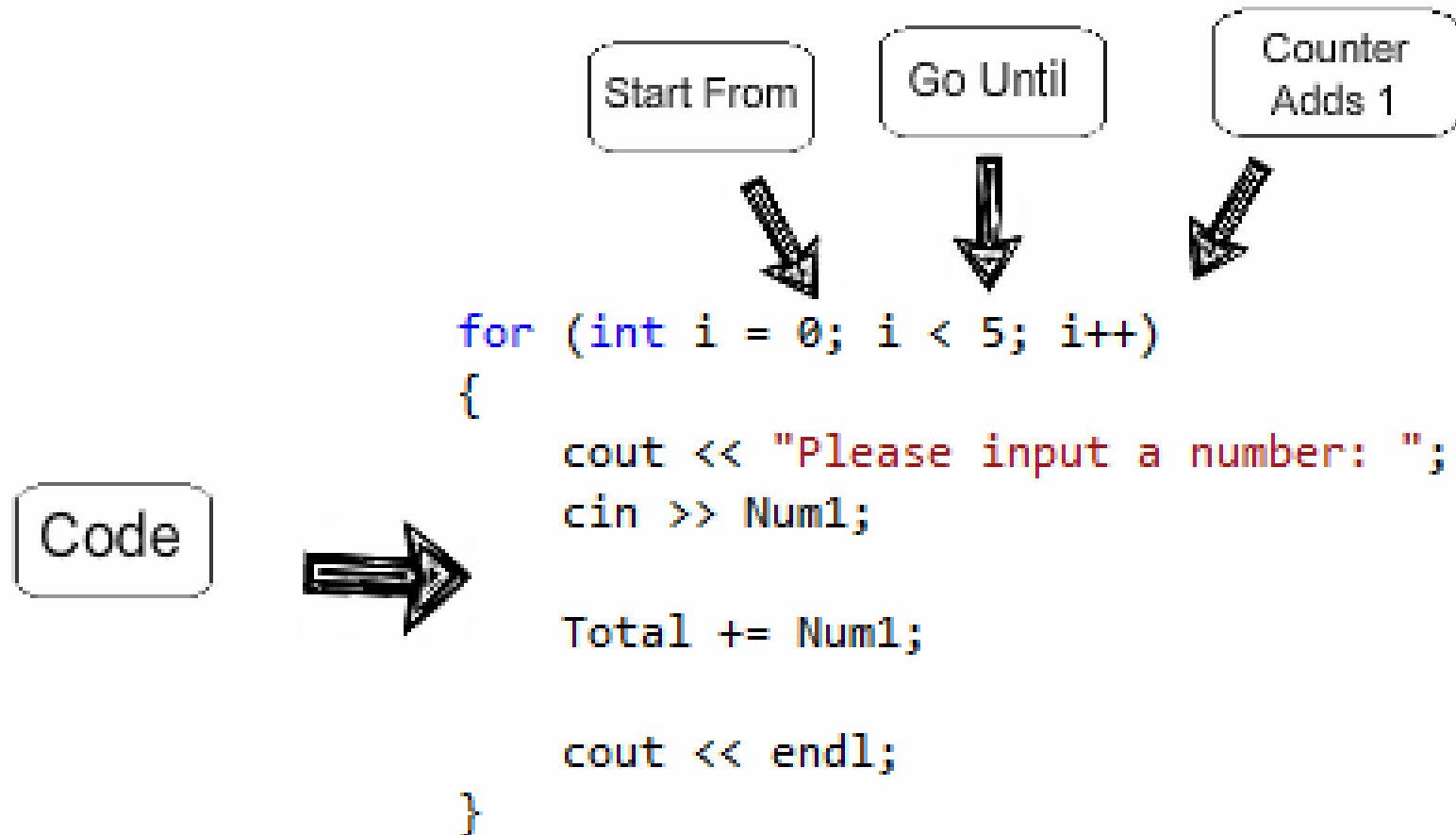
Annotations in the image:

- A pink box highlights lines 6 and 7, labeled **Data**.
- A pink box highlights lines 11 through 14, labeled **Code**.

Code Block

Ex) Dna Generating Dna

✓ for-statement of C++



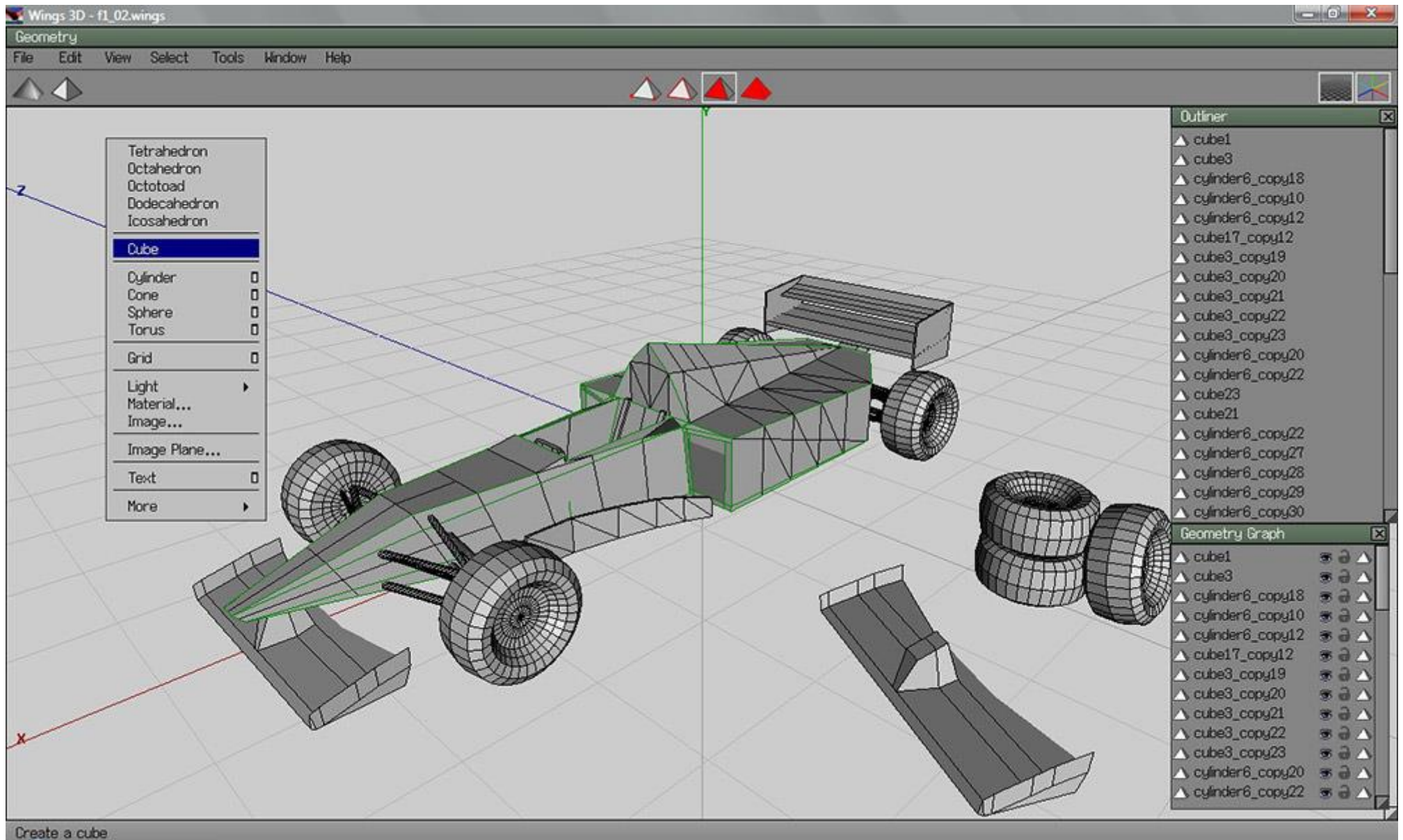
I can't believe a living creature is created by chance.

Conclusion

Painting ← Painter



Modelling ← Modeller



Cosmos ← The Creator

