마이크로프로세서

– 프로세서 (HW)에 소프트웨어 (SW) 적재 –

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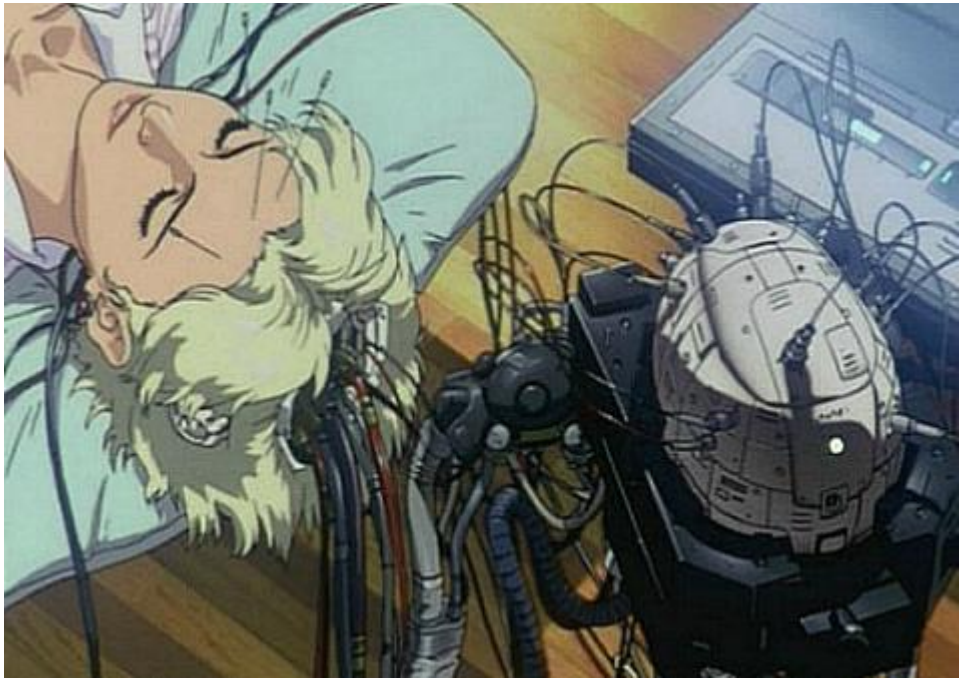
2019.03.15

Outline

- Machine Code를 tPU 프로세서에 적재
  - Compilation (Hand-compilation)
  - Assembling
  - Downloading machine code (binary) into code memory

공각기동대

- 몸(HW)와 정신(SW)를 분리
- 영혼 (Ghost)를 Digitize후 Download.

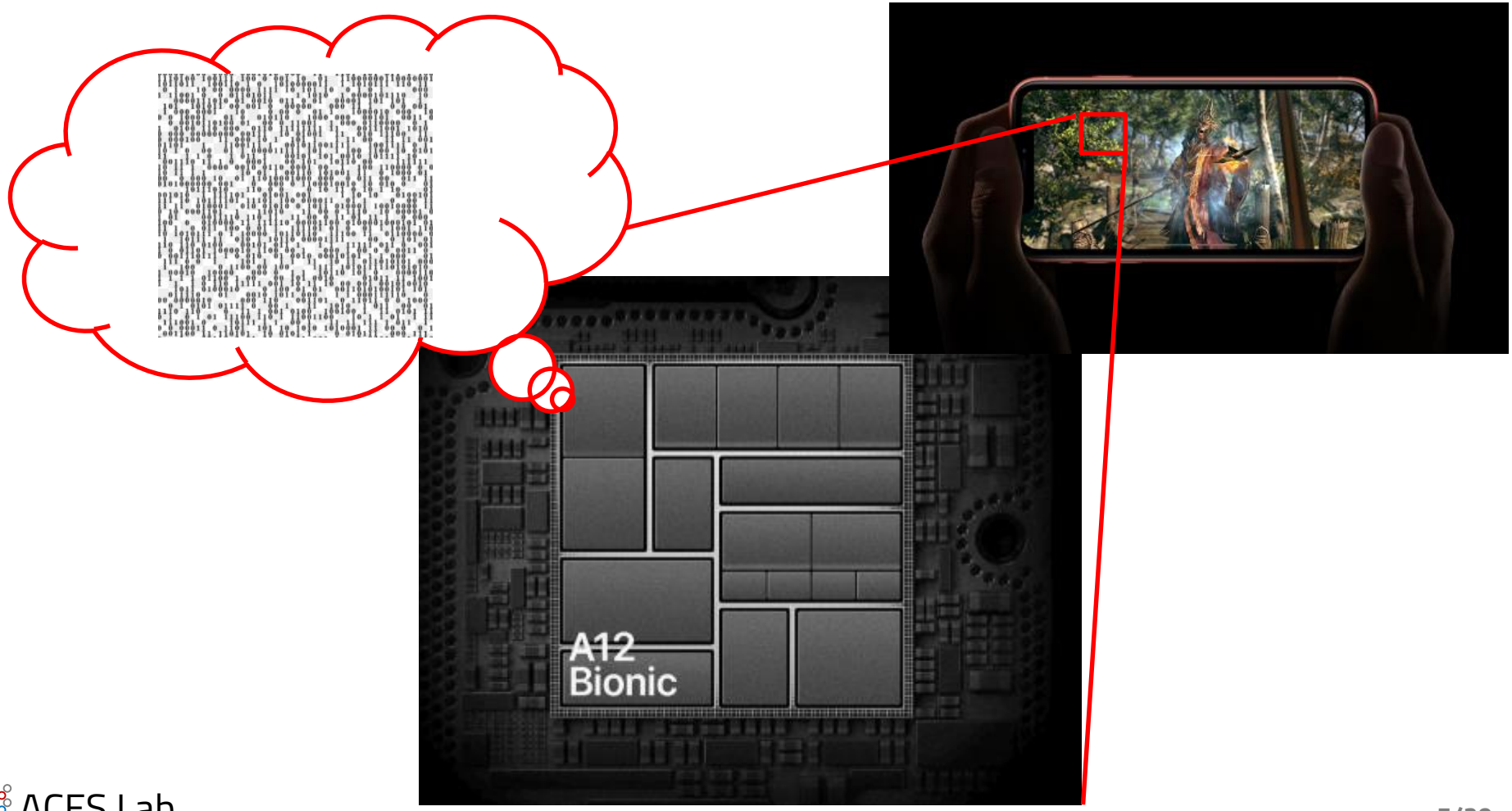


Embedded Processors

- Software-Embedded Processors
  - 소프트웨어가 미리 설치되어 있음.
  - 내가 구매한 디바이스의 가치에는 소프트웨어가 포함되어 있음

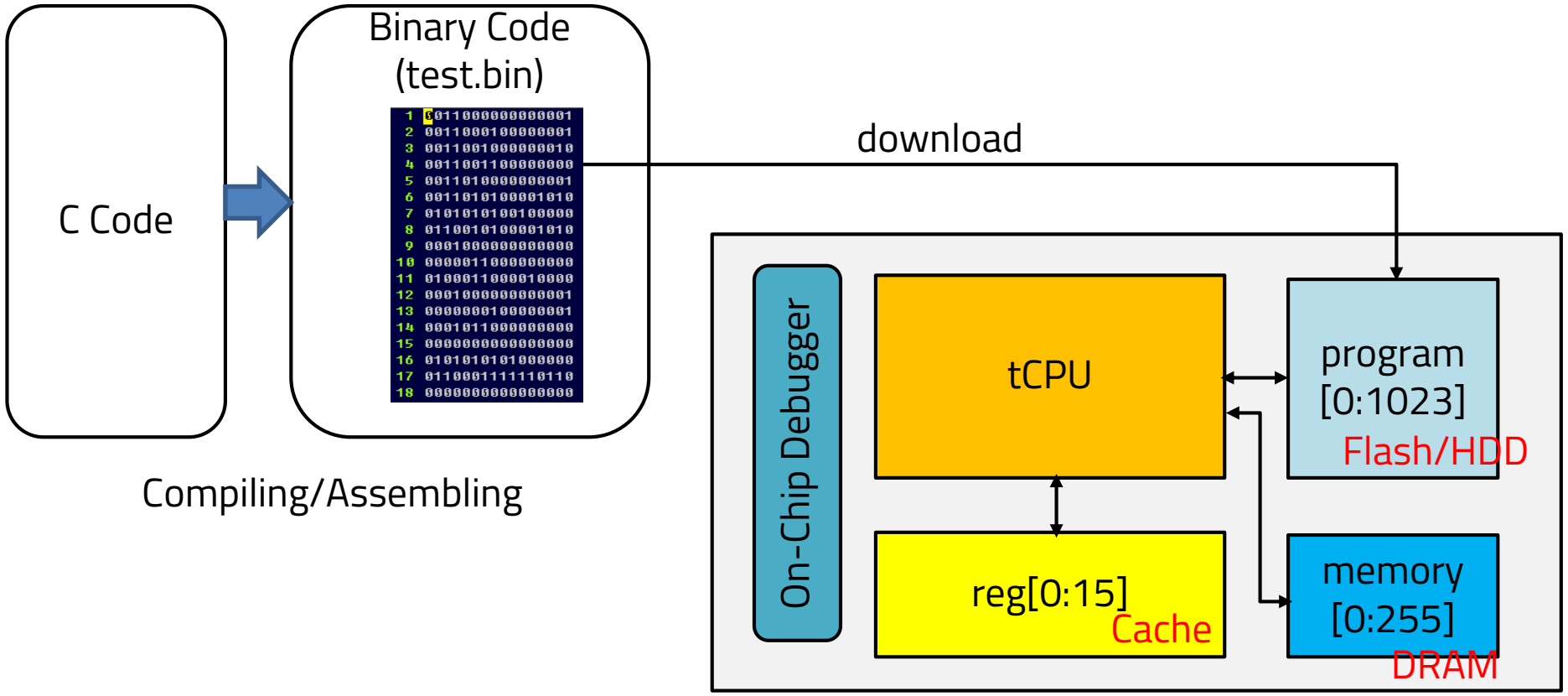
Software를 uP에 Embedding할려면.

- Software를 Binary (Bit Stream)으로 변환해야 한다.



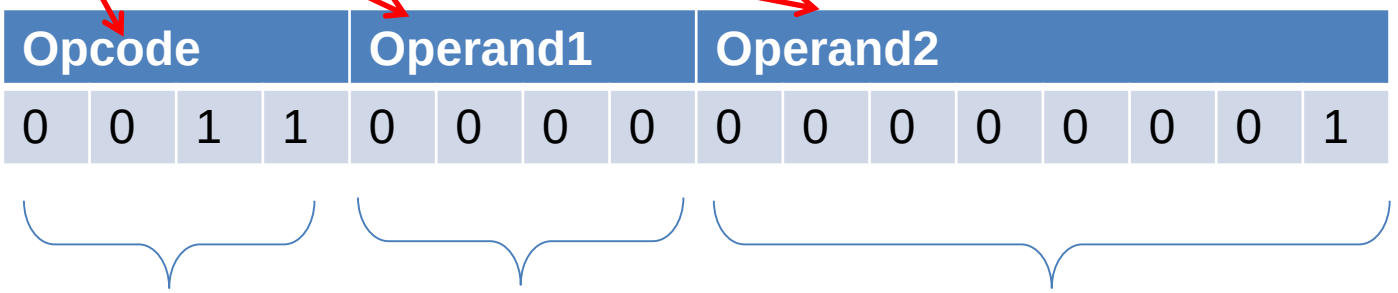
tPU Architecture

- C 코드 작성 후, Compiler, Assembler이용하여 기계코드로 변환
- 그리고 Download



tPU ISA (Instruction Set Architecture)

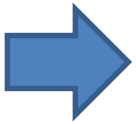
- MOV3 R0, #1



기계코드 변환

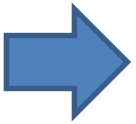
- 실습

```
int main() {

    int a = 1;
    int b = 1;
    int c = 2;
    int d = 0;

}
```



compilation

```
MOV3, R0, #1
MOV3, R1, #1
MOV3, R2, #2
MOV3, R3, #0
```

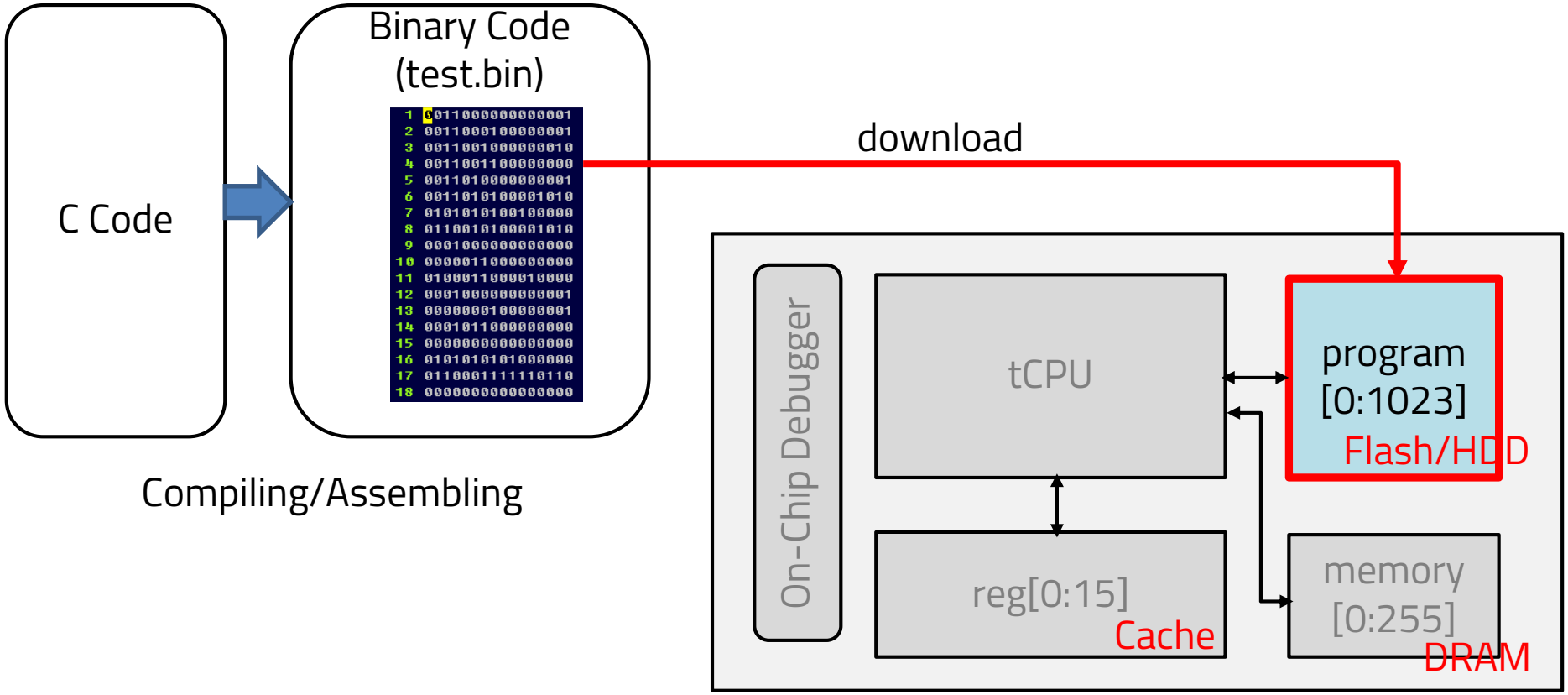


assembling

opcode	op1	op2
00110000		00000001
00110001		00000001
00110010		00000010
00110011		00000000

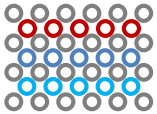
tPU에 기계코드 download

- 구현실습



Q & A

Thank you for your attention



Architecture and Compiler
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