

# Review Statement and Control Structure

## COMP3220 – Principle of Programming Languages

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2016 Spring

### 1 Control Structure

1. Re-implement the following loops with only `if` and `goto`.

```
while  $i > 0$  do
|   ...;
|    $i \leftarrow i - 1$ ;
end
```

```
for  $i \leftarrow 0$  to 10 do
|   ...;
end
```

2. Rewrite the following program without `goto`.

---

```
#include <random>
#include <iostream>
int main() {
    std::random_device rd;
    std::mt19937 gen(rd());
    std::uniform_real_distribution<> dis(0, 1);
    int sum = 0;
    int i = 5;
    if (dis(gen) > 0.5) goto loop;
    for (i = 0; i < 10; ++i) {
loop:
        sum += i;
    }
}
```

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