

Assignment 1

1. Define token types according to the chapter 3 slide, page 23. List all different types of tokens in the following C program.

```
int main(void)
{
    int i=0, select;
    float sum = 3.14;

    while (i<=100) {
        sum = sum + i;
        select = sum % 3;
        switch (select) {
            case 0: func0(); break;
            case 1: func1(); break;
            case 2: func2(); break;
            default: func3();
        }
        i++;
    }
    return 0;
}
```

Hint: 請寫下 token type 與實際的 lexeme，例如: **token_type (NUM): 0, 100**

2. Describe the languages denoted by the following regular expressions:

(a) $(0|1)^*00$

(b) $ab(b)^*a$

3. Write regular expressions for the following languages:

(a) All strings of 0's and 1's that contain the string 001.

(b) All strings of a's and b's that ends with string aba or bab.

Deadline: March 9, 2022 (24:00)