

## Software Security & Secure Programming

### Training Exercises

**Exercise 1.** Let consider the following code, where security classes are ordered  $S > C > U$  (constant values being in class  $U$ ) :

```
x : integer class S;
y,z : integer class C;
t : integer class U;

y := 2; z:= 3;
    x := y+z ;
    if ( y<5 ) then
t := 4;
    else
t := 3;
```

We require that a user of given security class should not get access to information belonging to a higher class. Is this program correct for a user of class  $C$ ? And for a user of class  $U$ ?

**Exercise 2.** Find the potential vulnerabilities inside the following code, explaining :

- why they are dangerous
- ho to correct them ...

```
int main() {
char t1[255], *p, *q, *r ;
char n ;

scanf("%s", t1) ;    // read the content of t1
scanf("%i", n) ;    // read the value n

if (n<255) {
    p = malloc(n) ;
q = p ;
    strcpy(p, t1) ;
printf("%s", q); // print the content of p
    free(q) ;
} ;

r = malloc(120) ;
...
printf("%s", p); // print the content of p
return 0 ;
}
```