

COMP500 / ENSE501: Week 11 – Exercise:

EXERCISE NAME: *Pre-Post-Conditions*

Given the following program source code:

```
1  #define _CRT_SECURE_NO_WARNINGS
2  #include <stdio.h>
3
4  float compute_bill(float starter, float main, float dessert);
5  void print_bill(float starter, float main, float dessert);
6
7  int main(void)
8  {
9      float starter_price = 0.0f;
10     float main_price = 0.0f;
11     float dessert_price = 0.0f;
12
13     printf("Starter price? ");
14     scanf("%f", &starter_price);
15     printf("Main price? ");
16     scanf("%f", &main_price);
17     printf("Dessert price? ");
18     scanf("%f", &dessert_price);
19
20     printf("\n");
21
22     print_bill(starter_price, main_price, dessert_price);
23
24     return 0;
25 }
26
27 float compute_bill(float starter, float main, float dessert)
28 {
29     return starter + main + dessert;
30 }
31
32 void print_bill(float starter, float main, float dessert)
33 {
34     printf("Starter: $%6.2f\n", starter);
35     printf("Main:      $%6.2f\n", main);
36     printf("Dessert: $%6.2f\n", dessert);
37     printf("-----\n");
38     printf("Total:    ");
39     printf("$%6.2f\n", compute_bill(starter, main, dessert));
40 }
```

Add pre- and post-conditions to the `compute_bill` function.

The `compute_bill` function should exhibit the following behaviour:

- Pre-condition: **starter** is never negative;
- Pre-condition: **main** is never negative;
- Pre-condition: **dessert** is never negative;
- Post-condition: The bill computed is never negative.