

```

1  #include "../include/a4_main.h"
2
3  int main(void) {
4      int select_var;
5
6      puts("Welcome To Assignment 4!\n");
7
8      while (1) {
9          puts("Main Menu:");
10         puts("1: Exercise_4a");
11         puts("2: Exercise_4b");
12         puts("3: Exercise_4b_optional");
13         puts("4: Close program");
14         select_var = get_num_from_usr("Please choose option: ",1,4);
15
16         if (select_var == 1)
17         {
18             puts("\nExercise_4a:");
19             printf("The number of bits in data type int is: %d.\n", bit_counter());
20             puts("Returning to Main Menu...\n");
21             continue;
22         }
23
24         if (select_var == 2)
25         {
26             puts("\nExercise_4b:");
27             puts("(Estimate Sin(x) using a Taylor series)");
28             double my_float;
29
30             do
31             {
32                 puts("");
33                 double my_float = get_num_from_usr("Enter number:
34 ", -10000000000, 10000000000);
35                 printf("Sin(%lf) is: %lf\n", my_float, get_sinx(my_float));
36                 puts("");
37                 puts("1: Try again");
38                 puts("2: Exit to Main Menu");
39             } while (get_num_from_usr("Please choose option: ",1,2) != 2);
40             puts("");
41             continue;
42         }
43
44         if (select_var == 3)
45         {
46             puts("\nExercise_4b_optional:");
47             puts("(Calculate the integral of Sin(x))");
48             double my_float;
49
50             do
51             {
52                 puts("");
53                 double lim1 = get_num_from_usr("Enter limit 1: ", -10000000000,
54 10000000000);
55                 double lim2 = get_num_from_usr("Enter limit 2: ", -10000000000,
56 10000000000);
57                 double pres = get_num_from_usr("Enter precision (0 to 1000000):
58 ", 1, 1000000);
59
60                 printf("The integral of Sin(x) from %f to %f is: %lf\n", lim1,
61 lim2, num_int1(get_sinx, lim1, lim2, pres));
62                 puts("");

```

```
58         puts("1: Try again");
59         puts("2: Exit to Main Menu");
60     } while (get_num_from_usr("Please choose option: ", 1, 2) != 2);
61     puts("");
62     continue;
63 }
64 else {
65     puts("");
66     break;
67 }
68 }
69
70 puts("Program closing...");
71
72 }
73
74
75
76
```