Error Detection and Handling assignments

1. WAP to read atleast 2 designation strings from the user. Using assert validate
   i. Count of received designation strings
   ii. Value of each string as one of {“E2”, “E3”, “E4”}

Sol:

```
#include <stdio.h>

#include <string.h>

#include <assert.h>

int main() {

  char designation[2][3];

  printf("Enter two designation strings (E2, E3, or E4):\n");

  for (int i = 0; i < 2; i++) {

    scanf("%s", designation[i]);

  }

  assert(sizeof(designation) / sizeof(designation[0]) >= 2);

  for (int i = 0; i < 2; i++) {

    assert(strcmp(designation[i], "E2") == 0 || strcmp(designation[i], "E3") == 0 ||
strcmp(designation[i], "E4") == 0);

  }

  printf("Valid designations received:\n");

  for (int i = 0; i < 2; i++) {

    printf("Designation %d: %s\n", i + 1, designation[i]);

  }

return 0;

}
```

Output:

```
user57@trainux01:~/Batch17OCT2024/if_else$ vi error1.c
user57@trainux01:~/Batch17OCT2024/if_else$ gcc error1.c
user57@trainux01:~/Batch17OCT2024/if_else$ ./a.out
Enter two designation strings (E2, E3, or E4):
E3
E4
Valid designations received:
Designation 1: E3
Designation 2: E4
```

2. Refer the code below. Modify code to use assert instead of if else. Add main and invoke function() and test it

```
void function(int x)
{
float fx;
if (x==0)
{
printf("Division by Zero is not allowed");
fprintf(stderr, "Division by zero! Exiting...\n");
exit(EXIT_FAILURE);
}
else
{
fx = 10 / x;
printf("f(x) is: %.5f", fx);
}
}
```

Sol:

```
#include <stdio.h>
#include <stdlib.h>
#include <assert.h>

void function(int x) {
  float fx;
  assert(x != 0 && "Division by zero is not allowed!");
  fx = 10 / x;
  printf("f(x) is: %.5f\n", fx);
}
int main() {
  int x;
  printf("Enter a value for x: ");
  scanf("%d", &x);
  function(x);

  return 0;
}
```

Output:

```
user57@trainux01:~/Batch17OCT2024/if_else$ vi error2.c
user57@trainux01:~/Batch17OCT2024/if_else$ gcc error2.c
user57@trainux01:~/Batch17OCT2024/if_else$ ./a.out
Enter a value for x: 2
f(x) is: 5.00000
user57@trainux01:~/Batch17OCT2024/if_else$ ./a.out
Enter a value for x: 10
f(x) is: 1.00000
```