EAST WEST UNIVERSITY
Department of Computer Science and Engineering
B.Sc. in Computer Science and Engineering Program
CSE412 Software Engineering
Assignment: 01, Marks:15
Summer 2024 Semester

Develop the Decision-to-Decision graph for the following three programs **to prepare a list of test cases from the independent paths.** Remember, you will need to calculate the cyclomatic complexity of the graph to find the number of independent paths.

1.

```c
#include <stdio.h>
int main() {
1.    int n, reversed = 0, remainder, original;
2.    printf("Enter an integer: ");
3.    scanf("%d", &n);
4.    original = n;
5.    while (n != 0) {
6.        remainder = n % 10;
7.        reversed = reversed * 10 + remainder;
8.        n /= 10;
9.    }
10.   if (original == reversed)
11.       printf("%d is a palindrome.", original);
12.   else
13.       printf("%d is not a palindrome.", original);
14.   return 0;
15. }
```

2.

```c
#include <stdio.h>
int main(){
1.    int count, first_term = 0, second_term = 1, next_term, i;
2.    printf("Enter the number of terms:\n");
3.    scanf("%d",&count);
4.    printf("First %d terms of Fibonacci series:\n",count);
5.    for ( i = 0 ; i < count ; i++ ){
6.        if ( i <= 1 )
7.            next_term = i;
8.        else{
9.            next_term = first_term + second_term;
10.           first_term = second_term;
11.           second_term = next_term;
12.       }
13.       printf("%d\n",next_term);
14.   }
15.   return 0;
16. }
```

3.

```java
public double calculate(int amount) {
1.      double rushCharge = 0, tax = amount * .0725;
2.      if (nextday.equals("yes") ) {
3.          rushCharge = 14.50;
4.      }
5.      if (amount >= 1000) {
6.          shipcharge = amount * .06 + rushCharge;
7.      }
8.      else if (amount >= 200) {
9.          shipcharge = amount * .08 + rushCharge;
10.     }
11.     else if (amount >= 100) {
12.         shipcharge = 13.25 + rushCharge;
13.     }
14.     else if (amount >= 50) {
15.         shipcharge = 9.95 + rushCharge;
16.     }
17.     else if (amount >= 25) {
18.         shipcharge = 7.25 + rushCharge;
19.     }
20.     else {
21.         shipcharge = 5.25 + rushCharge;
22.     }
23.     total = amount + tax + shipcharge;
24.     return total;
25. }
```