ADA-LAB-7

Q) Implement All Pair Shortest paths problem using Floyd's algorithm.

CODE-

```
#include <stdio.h>

int min(int a, int b) {
   if (a < b)
      return a;
   else
      return b;
}

void printm(int n, int d[][10]) {
   printf("Distance matrix is:\n");
   for (int i = 0; i < n; i++) {
      for (int j = 0; j < n; j++) {
         printf("%d\t", d[i][j]);
      }
      printf("\n");
   }
}

void floyd(int n, int a[][10]) {
   int d[10][10], i, j, k;
   for (i = 0; i < n; i++) {
      for (j = 0; j < n; j++) {
         d[i][j] = a[i][j];
      }
   }
   for (k = 0; k < n; k++) {
      for (i = 0; i < n; i++) {
         for (j = 0; j < n; j++) {
            d[i][j] = min(d[i][j], (d[i][k] + d[k][j]));
         }
      }
   }
   printm(n, d);
}

int main() {
   int a[10][10], i, j, n;
   printf("Enter the order of the matrix: ");
   scanf("%d", &n);
   printf("Enter the adjacency matrix:\n");
   for (i = 0; i < n; i++) {
      for (j = 0; j < n; j++) {
         scanf("%d", &a[i][j]);
      }
   }
   floyd(n, a);
```

```
    return 0;
}
```

OUTPUT-