3a)floyds

```
#include<stdio.h>
#include<sys/time.h>
#include<stdlib.h>
#include<unistd.h>
int n,c[10][10],d[10][10];
int min(int,int);
void read_data();
void write_data();
void floyds();
void write_data()
{
   int i,j;
   printf("\n the least distance matrix is:\n");
   for(i=0;i<n;i++)
   {
      for(j=0;j<n;j++)
      {
         printf("%d\t",d[i][j]);
      }
      printf("\n");
   }
}
void floyds()
{
   int i,j,k;
   for(i=0;i<n;i++)
   {
```

```
      for(j=0;j<n;j++)
      {
         d[i][j]=c[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]);
      }
   }
   }
}
int min(int a,int b)
{
   if(a<b)
   {
      return a;
   }
   return b;
}
void read_data()
{
   int i,j;
   printf("\n enter the number of vertices:\t");
   scanf("%d",&n);
```

```
   printf("\nenter the adjacency matrix:\n");
   for(i=0;i<n;i++)
   {
      for(j=0;j<n;j++)
      {
         scanf("%d",&c[i][j]);
      }
   }
}
void main()
{
   read_data();
   floyds();
   write_data();
}
```

3b)Warshalls

```
#include<stdio.h>
#include<stdlib.h>
#include<conio.h>
void warshalls();
int a[10][10],n;
void main(){
int i,j;
printf("enter no of vertices \n");
scanf("%d",&n);
printf("enter the cost matrix\n");
for(i=1;i<=n;i++){
```

```
   for(j=1;j<=n;j++){
      scanf("%d",&a[i][j]);
   }
}
warshalls();
}
void warshalls()
{
   int i,j,k;
   for(k=1;k<=n;k++){
      for(i=1;i<=n;i++){
       for(j=1;j<=n;j++){
            if(a[i][j]!=1){
               if(a[i][k]==1&&a[k][j]==1){
                  a[i][j]=1;
               }
            }
   }
}
   }
printf("the path matrix is \n");
for(i=1;i<=n;i++){
   for(j=1;j<=n;j++){
     printf("%d\t",a[i][j]);
   }
   printf("\n");
}
}
```