```c
#include<stdio.h>
#define N 5
#define M 1000
#define MAX 5
typedef int Itemtype;
typedef struct {
  Itemtype item[MAX];
  int count;
} Stack;
void inisialisasi(Stack *s)
{
    s->count=0;
}
int Kosong(Stack *s)
{
    return s->count==0;
}
int Penuh(Stack *s)
{
    return s->count==MAX;
}
void Push(Stack *s, Itemtype x)
{
    if(Penuh(s))
        printf("Stack penuh\n");
    else{
        s->item[s->count]=x;
        s->count++;
    }
}
Itemtype Pop(Stack *s)
{
    Itemtype temp=-1;
    if(Kosong(s))
        printf("Stack kosong\n");
    else{
        s->count--;
        temp=s->item[s->count];
    }
    return temp;
}
void cetak(int A[N][N], char *judul)
{
    int i, j;
    printf("%s:\n", judul);
    for(i=0;i<N;i++){
        for(j=0;j<N;j++)
            if(A[i][j]<M)
```

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                printf("%d ",A[i][j]);
            else
                printf("M ");
        printf("\n");
    }
}
void warshall(int Q[N][N], int P[N][N], int R[N][N])
{
    int i, j, k;
    for(k=0;k<N;k++)
        for(i=0;i<N;i++)
            for(j=0;j<N;j++)
                if(Q[i][k]+Q[k][j] < Q[i][j]){
                    Q[i][j] = Q[i][k]+Q[k][j];
                    P[i][j] = P[i][j] | (P[i][k] & P[k][j]);
                    if(R[k][j]==0)
                        R[i][j] = k + 1;
                    else
                        R[i][j] = R[k][j];
                }
}
main()
{
    int asal, tujuan, kolom;
    Stack st;
    int Q[N][N]={M,1,3,M,M,
                 M,M,1,M,5,
                 3,M,M,2,M,
                 M,M,M,M,1,
                 M,M,M,M,M};
    int P[N][N]={0,1,1,0,0,
                 0,0,1,0,1,
                 1,0,0,1,0,
                 0,0,0,0,1,
                 0,0,0,0,0};
    int R[N][N]={M,0,0,M,M,
                 M,M,0,M,0,
                 0,M,M,0,M,
                 M,M,M,M,0,
                 M,M,M,M,M};
    cetak(Q, "Beban");
    cetak(P, "Jalur");
    cetak(R, "Rute");
    warshall(Q,P,R);
    cetak(Q, "Beban");
    cetak(P, "Jalur");
    cetak(R, "Rute");
    printf("Masukkan titik asal: "); scanf("%d",&asal);
```

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    printf("Masukkan titik tujuan: "); scanf("%d",&tujuan);
    inisialisasi(&st);
    kolom=tujuan-1;
    while(R[asal-1][kolom]!=0){
        Push(&st, R[asal-1][kolom]);
        kolom=R[asal-1][kolom]-1;
    }
    printf("Rute = %d-",asal);
    while(!Kosong(&st)){
        printf("%d-",Pop(&st));
    }
    printf("%d\n", tujuan);
    printf("Beban = %d\n",Q[asal-1][tujuan-1]);
}
```