

MINIMUM SPANNING PRISM ALOGRITHM:

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

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

```
#define infinity 9999
```

```
#define MAX 20
```

```
int G[MAX][MAX],spanning[MAX][MAX],n;
```

```
int prims();
```

```
int main()
```

```
{
```

```
int i,j,total_cost;
```

```
printf("Enter no. of vertices:");
```

```
scanf("%d",&n);
```

```
printf("\nEnter the adjacency matrix:\n");
```

```
for(i=0;i<n;i++)
```

```
for(j=0;j<n;j++)
```

```
scanf("%d",&G[i][j]);
```

```
total_cost=prims();
```

```
printf("\nspanning tree matrix:\n");
```

```
for(i=0;i<n;i++)
```

```
{
```

```
printf("\n");
```

```
for(j=0;j<n;j++)
```

```
printf("%d\t",spanning[i][j]);
```

```
}
```

```
printf("\n\nTotal cost of spanning tree=%d",total_cost);
```

```
return 0;
```

```
}
```

```

int prims()
{
int cost[MAX][MAX];
int u,v,min_distance,distance[MAX],from[MAX];
int visited[MAX],no_of_edges,i,min_cost,j;
for(i=0;i<n;i++)
for(j=0;j<n;j++)
{
if(G[i][j]==0)
cost[i][j]=infinity;
else
cost[i][j]=G[i][j];
spanning[i][j]=0;
}
distance[0]=0;
visited[0]=1;
for(i=1;i<n;i++)
{
distance[i]=cost[0][i];
from[i]=0;
visited[i]=0;
}
min_cost=0;
no_of_edges=n-1;
while(no_of_edges>0)
{
min_distance=infinity;
for(i=1;i<n;i++)
if(visited[i]==0&&distance[i]<min_distance)
{

```

```

v=i;
min_distance=distance[i];
}
u=from[v];
spanning[u][v]=distance[v];
spanning[v][u]=distance[v];
no_of_edges--;
visited[v]=1;
for(i=1;i<n;i++)
if(visited[i]==0&&cost[i][v]<distance[i])
{
distance[i]=cost[i][v];
from[i]=v;
}
min_cost=min_cost+cost[u][v];
}
return(min_cost);
}

```

OUTPUT:

```

C:\Users\Sravani - Hema\OneDrive\Documents\PRISM ALOGRITHM.cpp - [Executing] - Embarcadero Dev-C++ 6.3
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 9.2.0 32-bit Release
Project C
Enter no. of vertices:3
Enter the adjacency matrix:
5
7
6
5
4
4
5
6

spanning tree matrix:
0 0 6
0 0 4
6 4 0

Total cost of spanning tree=11
-----
Process exited after 27.86 seconds with return value 0
Press any key to continue . . .
Compiler (
Abort Con
Shorten compiler path
Output Filename: C:\Users\Sravani - Hema\OneDrive\Documents\PRISM ALOGRITHM.exe
Output Size: 295.982421875 KiB
Compilation Time: 0.66s
Line: 79 Col: 2 Sel: 0 Lines: 79 Length: 1361 Insert Done parsing in 0.125 seconds
Type here to search
35°C
ENG
02:46 PM
21-09-2022
14

```