主讲：胡燕

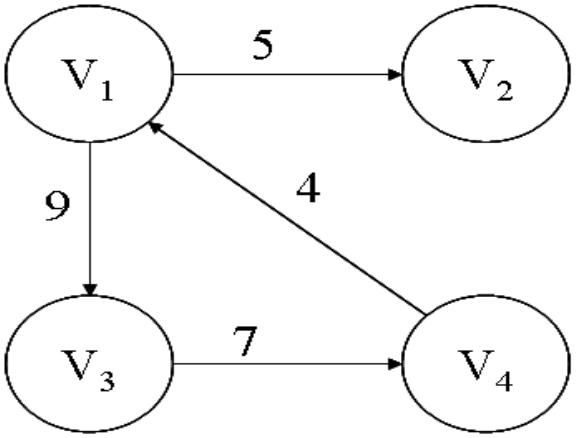
建立邻接表

（1）输入顶点个数和边的个数
（2）邻接表初始化

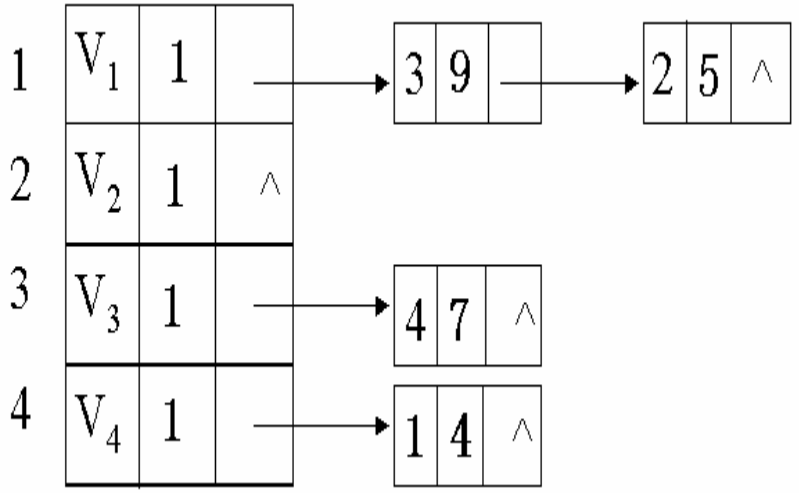
	顶点	入度	first
1	V_1	0	∧
2	V_2	0	∧
3	V_3	0	∧
4	V_4	0	∧

first：指向链表的第一个结点

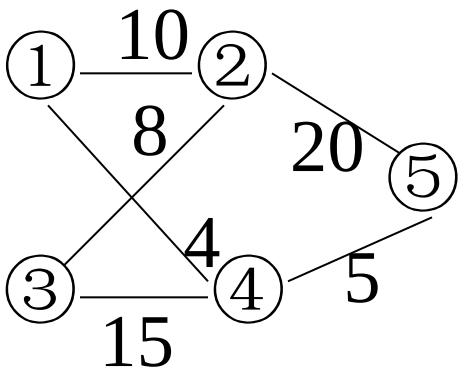
（3）输入e条边，构造邻接表



有向网络G2



建立邻接表(例)



(1)输入是否有向图
(2)输入顶点个数n
(3)邻接表的初始化

(4)循环输入各边并存入邻接表

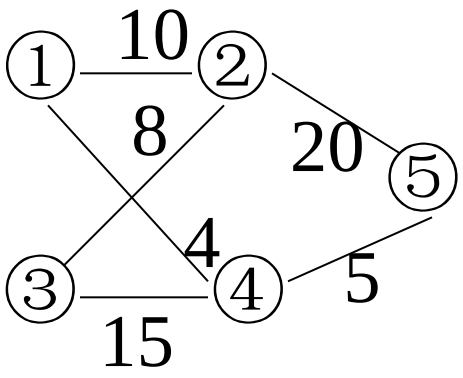
输入(i,j,w)
查询j结点是否已连上
建立新结点
插入j结点,j结点入度加1
若为无向图则插入i结点

1	0	^
2	0	^
3	0	^
4	0	^
5	0	^

10	2	∧

(1,2,10)

建立邻接表(例)



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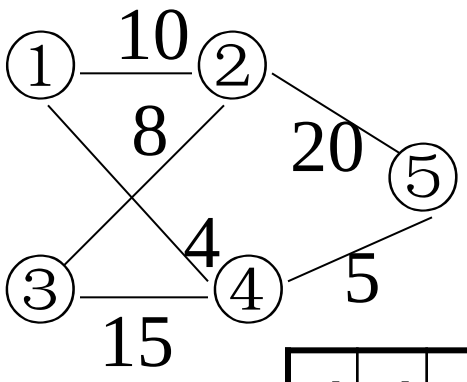
1	0	^
2	1	^
3	0	^
4	0	^
5	0	^

10	2	∧

10	1	∧

(1,2,10)

建立邻接表(例)



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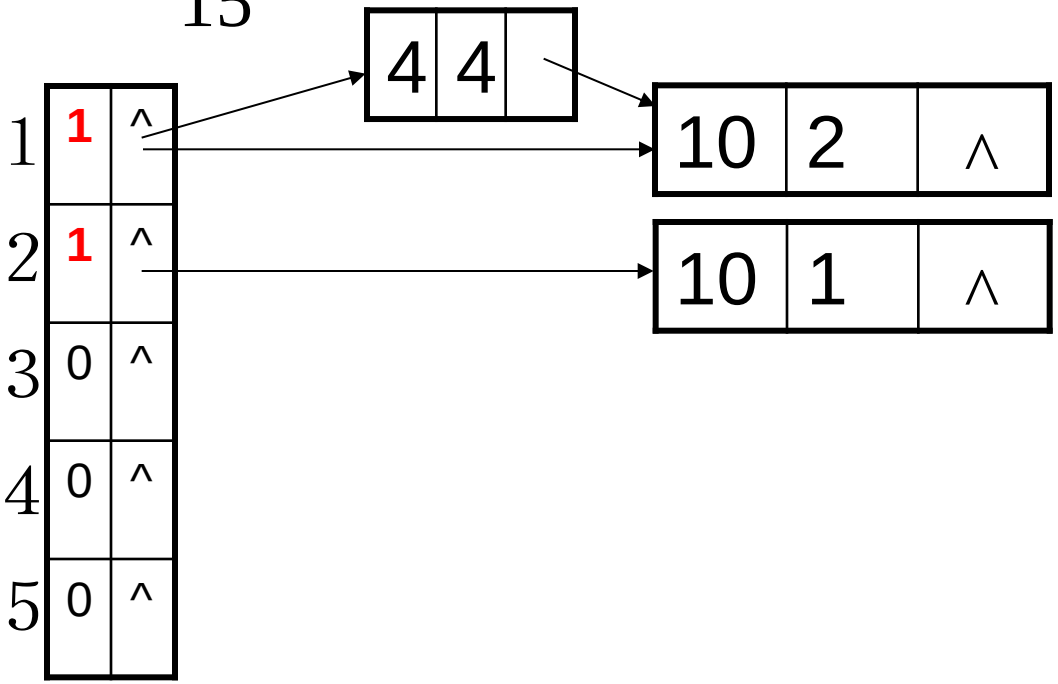

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(1,4,4)

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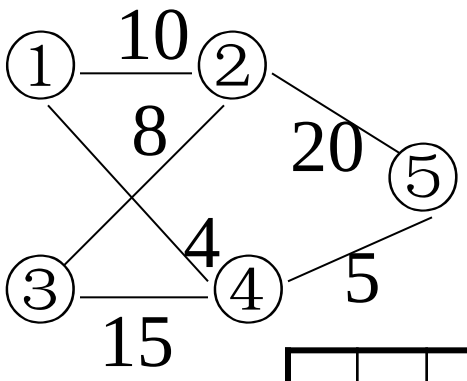

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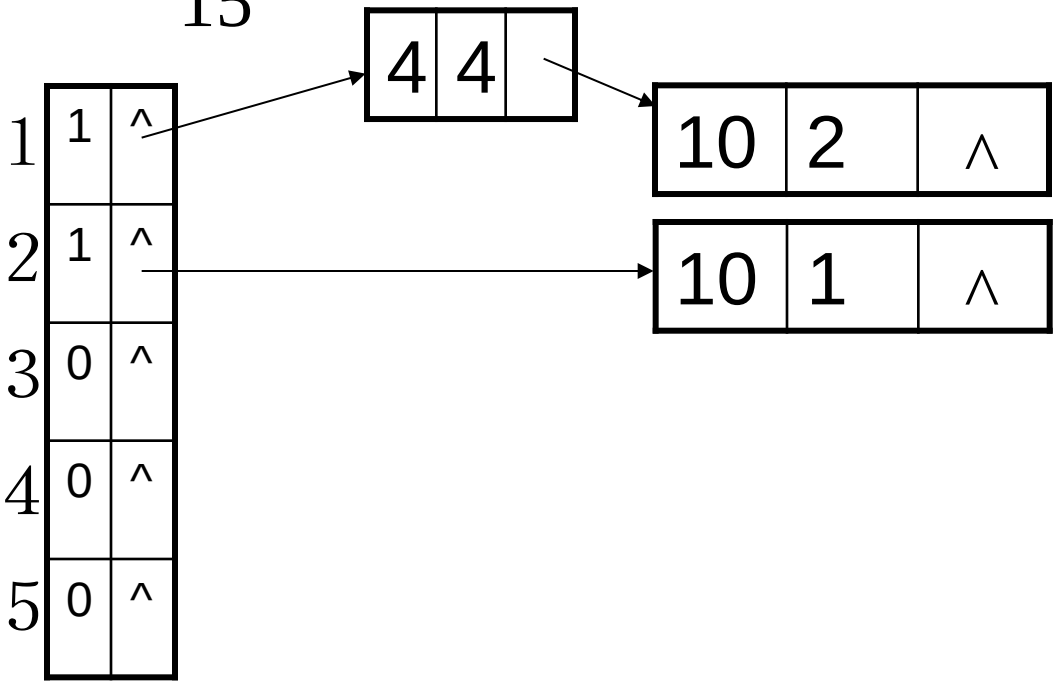

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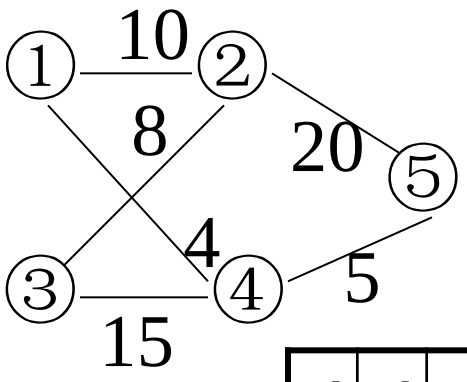

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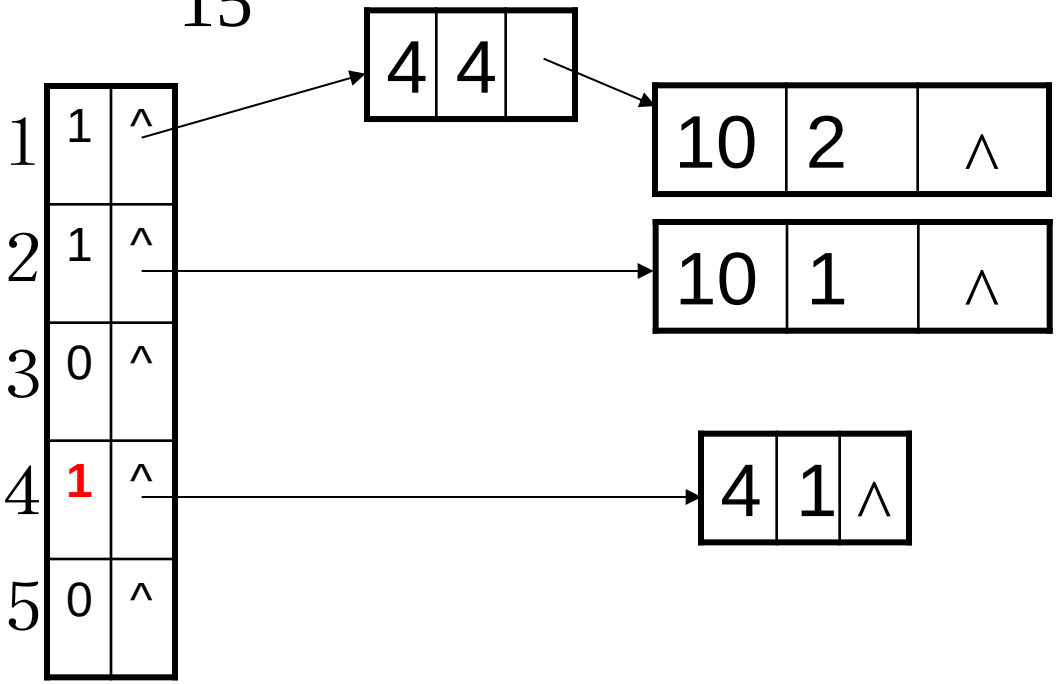

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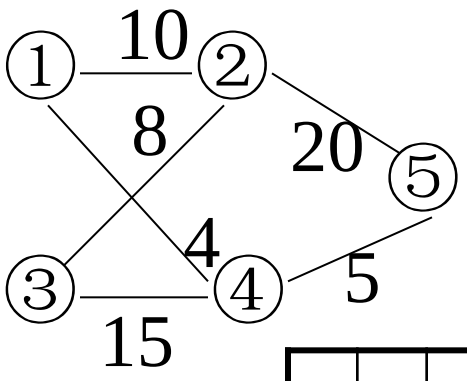

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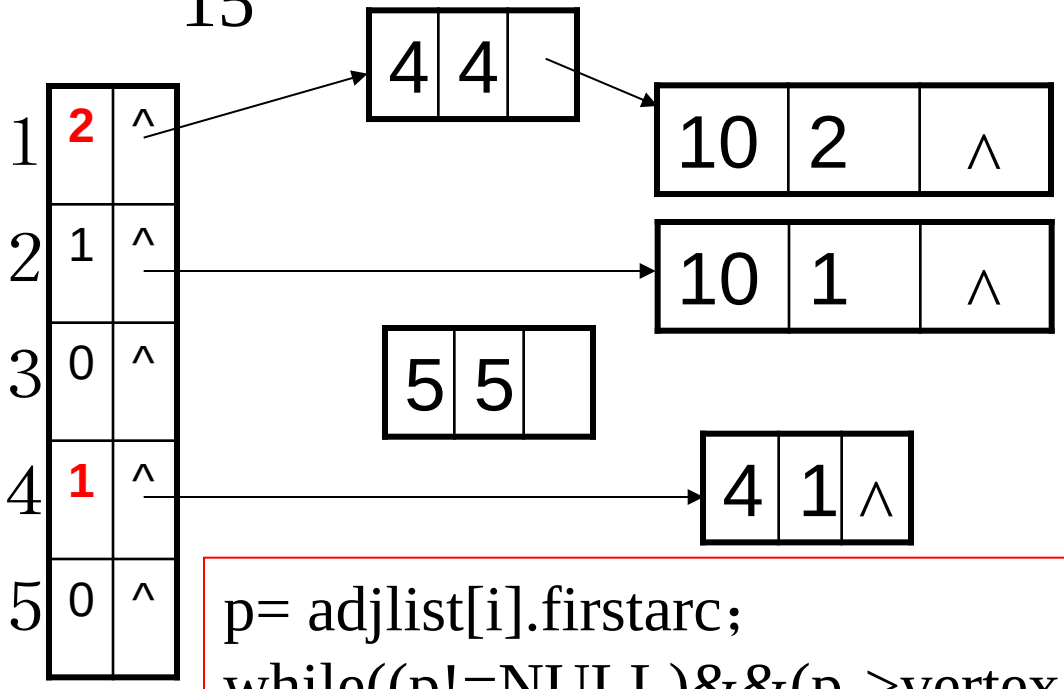


```
p= adjlist[i].firstarc;
while((p!=NULL)&&(p->vertex!=j))
        p=p->next;
```

(4)循环输入各边并存入邻接表

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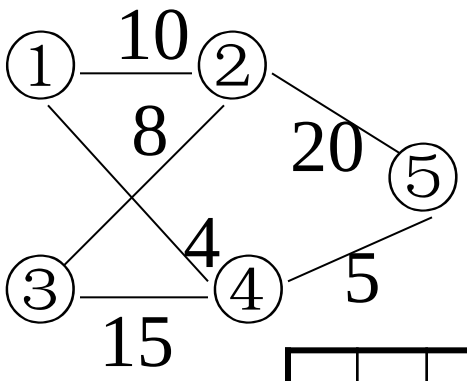
(1,4,4)

(4,5,5)

建立邻接表(例）



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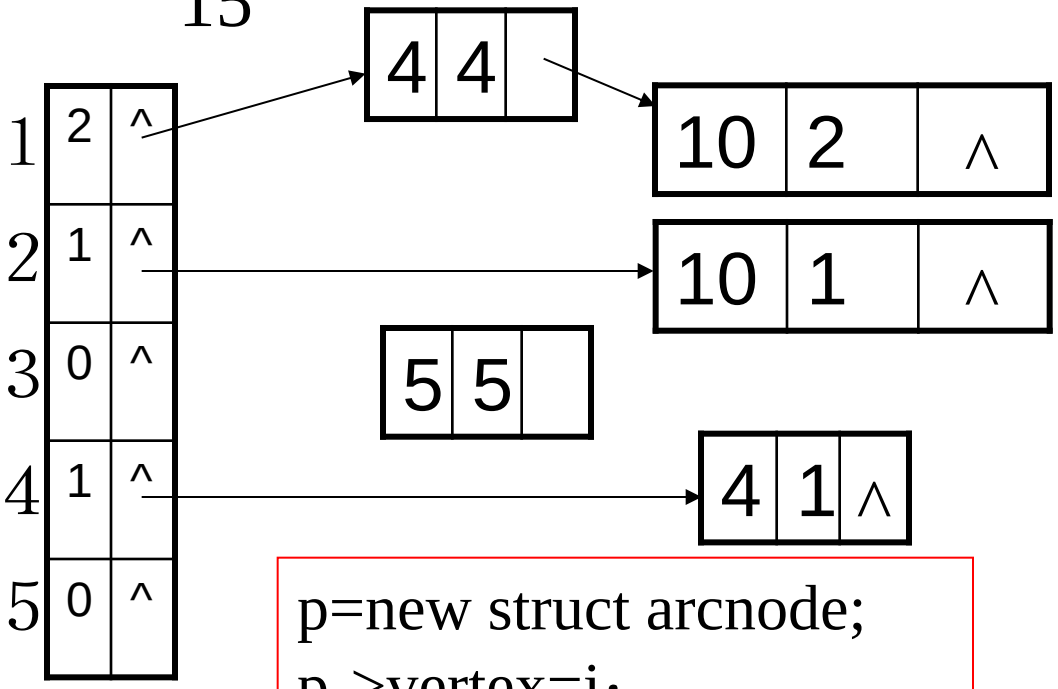


```
p=new struct arcnode;
p->vertex=j;
p->info=w;
```

(4)循环输入各边并存入邻接表

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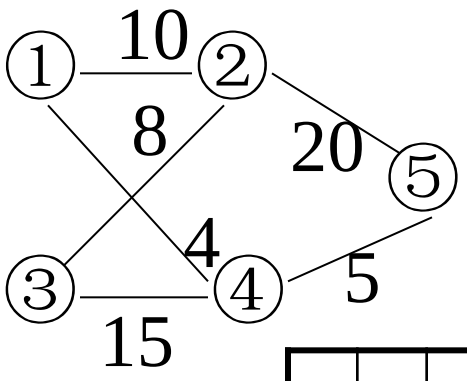
建立邻接表(例)



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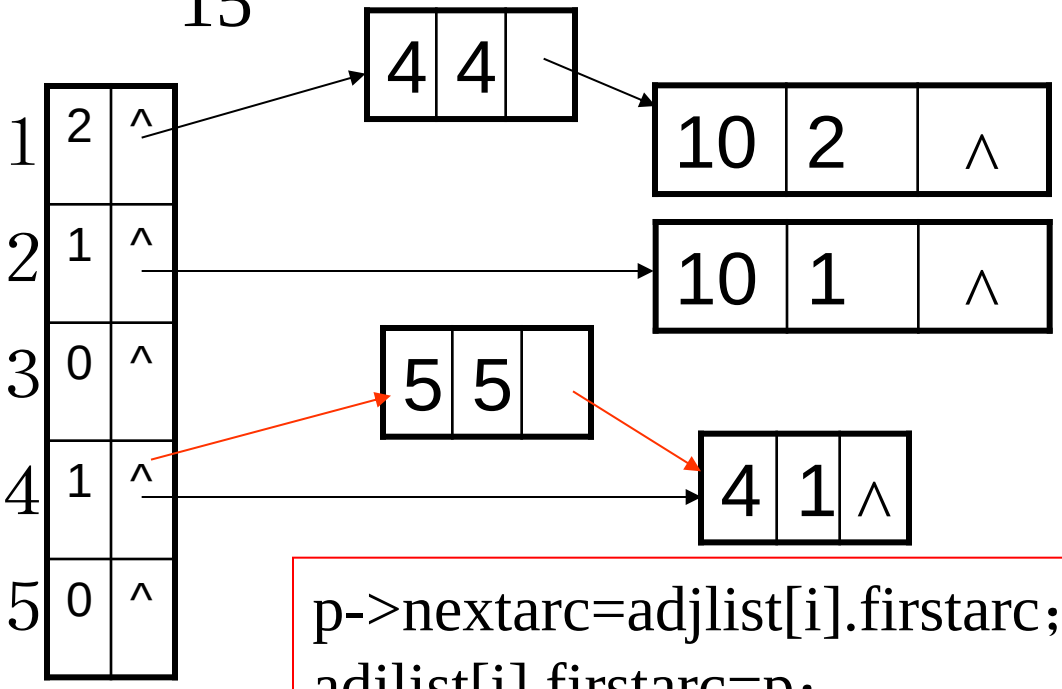


```
p->nextarc=adjlist[i].firstarc;
adjlist[i].firstarc=p;
++(adjlist[j].degree
```

(4)循环输入各边并存入邻接表

输入(i,j,w)
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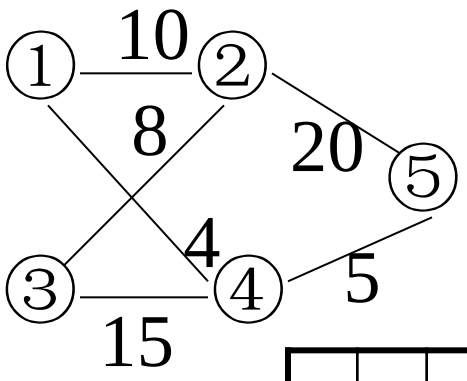

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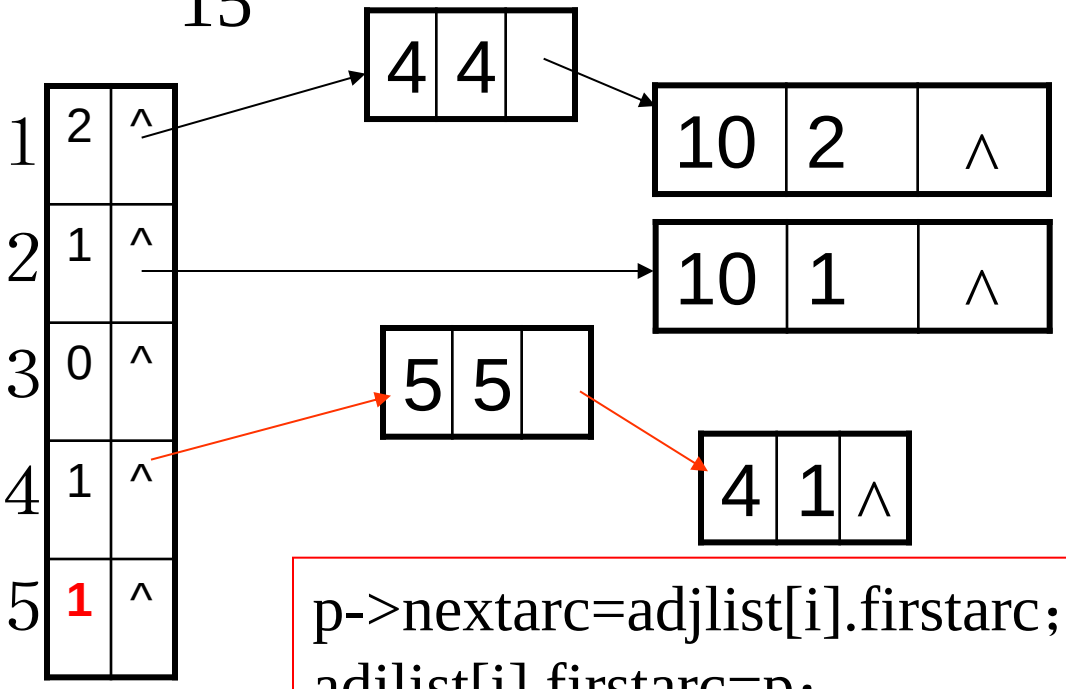


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```

(1,2,10)

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建立邻接表(例）

```
#define n0 100
struct arcnode {
    int vertex;
    int info;
    struct arcnode *nextarc;
    };
struct node{
    int degree;
    struct acrnode *firstarc;
   };
struct node adjlist[n0+1];
int n;
void setgraph()
{  int i，j，k，w;
    struct arcnode *p;
```

```
printf( “1:无向网 2:有向网” );
scanf(“%d”,&k);
printf( “顶点数” );
scanf(“%d”,&n);
for(i=l；i<=n；i++)
   { adjlist[i].degree=0；
     adjlist[i].first=NULL；
    };
printf( “输入边集合” );
scanf(“%d,%d,%d”,&i,&j,&w);
while((i>=1)&&(i<=n)
      &&(j>=1)&&(j<=n))
 {p= adjlist[i].firstarc；
  while((p!=NULL)&&(p->vertex!=j))
        p=p->nextarc；
```

建立邻接表(例）

```
if p==NULL)
   {    p=(struct arcnode*)malloc(sizeof(struct arcnode));
        p->vertex=j;
        p->info=w;
        p->nextarc=adjlist[i].firstarc;
        adjlist[i].firstarc=p;
       ++(adjlist[j].degree);
       if(k==l  )
         { p= (struct arcnode*)malloc(sizeof(struct arcnode));
           p->vertex=i;
           p->info=w;
           p->nextarc= adjlist[j].firstarc;
           adjlist[j].firstarc=p;
          ++(adjlist[i].degree);     }     }
scanf("%d,%d,%d",&i,&j,&w);   }    }
```