

Algorithm for creating the nodes of the sparse matrix

```
Struct node
{
    int r;
    int c;
    int val;
    struct node *next;
}
```

Let a, b the two input matrices

Reading

```
For i to n
For j n
{
    Read(x)
    If(x not zero)
        insertlast(i,j,x, p) /*... send only non zero values to add a new node to the end of the
                                existing list of nodes of the sparse matrix
    }
}
```

Adding

```
While(a !=null && b!=null)
{
    If(a-r ==b-r)
        If(a-c==b-c)
            { if(a-val+b-val!=0)
                insertlast(a-r, a-c,a-val+b-val,.....)
                a=a-next; b=b-next
            }
        Else if(a-c<b-c)
            { insertlast (a-r,a-c,a-val,..); a=a-next}
        Else
            { insertlast (a-r, b-c, b-val...); b=b-next}
    Else if(a-r<b-r)
        { insertlast (a-r, a-c, a-val..), a=a-next}
    Else { insertlast (b-r, b-c, b-val) b= b-next}
}end of while . till either ends

While(a==null)
    Copy items of b to matrix
    Advance b

While (b==null)
    Copy items of a to matrix
```

Advance a

Print the Sparse Matrix (*Passing a list of Sprse Matrix : P*)

```
for ( i = 0 to n)
{
    printf("\n");
    for (j = 0 to n)
        if (i == p->row && j == p->col)
            {
                print( p->val)
                p = p->next;
            }
        else print( 0)
    }
}
```