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#include<stdio.h>

int main()
{
    //P0,P1,P2,P3,P4 are the Process names here.....

    int n,m,i,j,k;

    n=5; //PROCESSES....
    m=3; // RESOURCES....

    int alloc[5][3]={0,1,0}, {2,0,0}, {3,0,2}, {2,1,1}, {0,0,2}};

    int max[5][3]={7,5,3}, {3,2,2}, {9,0,2}, {2,2,2}, {4,3,3}};

    int avail[3]={3,3,2};

    int f[n], ans[n], ind=0;

    for(k=0;k<n;k++)
    {
        f[k]=0;
    }

    int need[n][m];

    for(i=0;i<n;i++)
    {
        for(j=0;j<m;j++)
        {
            need[i][j]=max[i][j]-alloc[i][j];
        }
    }

    int y=0;

    for(k=0;k<5;k++)
    {
        for(i=0;i<n;i++)
        {
            if(f[i]==0)
            {
                int flag=0;
                for(j=0;j<m;j++)
                {
                    if(need[i][j] <= avail[j])
                    {
                        flag++;
                        continue;
                    }
                }
                if(flag==3)
                {
                    ans[ind++]=i;
                    for(y=0;y<m;y++)
                    {
                        avail[y]+=alloc[i][y];
                    }
                    f[i]=1;
                }
            }
        }
    }
}

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        }
    }
}

int flag=1;

for(int i=0;i<n;i++)
{
    if(f[i]==0)
    {
        flag=0;
        printf("The following system is not safe");
        break;
    }
}

if(flag==1)
{
    printf("Following is the SAFE Sequence\n");
    for(i=0;i<n-1;i++)
    {
        printf("P%d -> ",ans[i]);
    }
    printf("P%d",ans[n-1]);
}

return 0;
}

```