#include<stdio.h>

#include<stdlib.h>

struct packet

{

int time;

int size;

}p[50];

int main()

{

int i,n,m,k=0;

int bsize,bfilled,outrate;

printf("Enter the number of packets: ");

scanf("%d",&n);

printf("Enter packets in the order of their arrival time\n");

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

{

printf("Enter the time and size: ");

scanf("%d%d",&p[i].time,&p[i].size);

}

printf("Enter the bucket size: ");

scanf("%d",&bsize);

printf("Enter the output rate: ");

scanf("%d",&outrate);

m=p[n-1].time;

i=1;

k=0;

bfilled=0;

while(i<=m || bfilled!=0)

{

printf("\n\nAt time %d",i);

if(p[k].time==i )

{

if(bsize>=bfilled + p[k].size)

{

bfilled=bfilled + p[k].size;

printf("\n%d byte packet is inserted",p[k].size);

k=k+1;

}

else

{

printf("\n%d byte packet is discarded",p[k].size);

k=k+1;

}

}

if(bfilled==0)

{

printf("\nNo packets to transmitte");

}

else if(bfilled>=outrate)

{

bfilled=bfilled-outrate;

printf("\n%d bytes transfered",outrate);

}

else

{

printf("\n%d bytes transfered",bfilled);

bfilled=0;

}

printf("\nPackets in the bucket %d byte\n",bfilled);

i++;

}

return 0;

}