

```

program bardia
dimension x(10000),y(10000)
character*20 file1
character*20 file2
read(*,'(a20)')file1
read(*,'(a20)')file2
open(1,file=file1)
open(2,file=file2)
c
do 10 i=1,10000
  read(1,*,END=11) x(i),y(i)
10 continue
11 n=i-1
x(0)=2*x(1)-x(2)
y(0)=y(1)
x(n+1)=2*x(n)-x(n-1)
y(n+1)=y(n)
do 20 i=1,n+1
  write(2,*) (x(i)+x(i-1))/2,y(i-1)
  write(2,*) (x(i)+x(i-1))/2,y(i)
20 continue
close(1)
close(2)
end

```