1. Matrix multiplication

```
! Operation and some results

[ese-jianqh@login03 fortran_demo1]$ gfortran Matrix_multip.f90 Main.f90 -o Q1.x
[ese-jianqh@login03 fortran_demo1]$ ./Q1.x
 M is following:
   19.480000000000000        15.789999999999999        19.280000000000001
   19.280000000000001        12.920000000000000        15.859999999999999
   15.859999999999999        11.289999999999999        14.039999999999999
   11.930000000000000        18.600000000000001        18.230000000000000
   19.280000000000001        12.920000000000000        15.859999999999999
 N is following:
   7.7199999999999998        4.1100000000000003        1.4399999999999999
 4.7999999999999998        5.5499999999999998
   5.5499999999999998        4.7999999999999998        4.0400000000000000
0.58999999999999997        8.5800000000000001
  0.58999999999999997        8.5800000000000001        2.2599999999999998
 7.7199999999999998        4.1100000000000003
 MN is following:
   249.39530000000002        321.27719999999999        135.41559999999998
 251.66170000000000        322.83299999999997
   229.90499999999997        277.33560000000000        115.80360000000000
 222.60599999999999        283.04219999999998
   193.38229999999999        239.83980000000000        100.18039999999999
 191.17789999999999        242.59559999999996
   206.08529999999999        294.72569999999996        133.52300000000000
 208.97360000000000        300.72480000000002
   229.90499999999997        277.33560000000000        115.80360000000000
 222.60599999999999        283.04219999999998
[ese-jianqh@login03 fortran_demo1]$ nano MN.dat
```

```
 GNU nano 2.3.1                                          File: MN.dat

  249.40   321.28   135.42   251.66   322.83
  229.90   277.34   115.80   222.61   283.04
  193.38   239.84   100.18   191.18   242.60
  206.09   294.73   133.52   208.97   300.72
  229.90   277.34   115.80   222.61   283.04
```

2.Calculate the Solar Elevation Angle

2.1 Declination_angle

Better formula

The following equation gives a more accurate value of the declination angle.

$$\delta = \sin^{-1}\left[\sin(-23.44^\circ)\cos\left(\frac{360}{365.24}(d+10)+\frac{360}{\pi}\times 0.0167\sin\left(\frac{360}{365.24}(d-2)\right)\right)\right]$$

2.2 Solar_hour_angle

见网站公式

2.3 Solar_elevation_angle.f90

见网站公式

本答案未跑通，仅提交f90文件