```
C:\Users\97250\AppData\Local\Programs\Python\Python38\python.exe "C:/Users/97250/PycharmProjects/Graphical Models/main.py"
Exercise 3 (2x2 lattice):
    Z(temp=1  )  =  121.23293134406595
    Z(temp=1.5)  =  40.922799092745386
    Z(temp=2  )  =  27.048782764334526


Exercise 4 (3x3 lattice):
    Z(temp=1  )  =  365645.74913577037
    Z(temp=1.5)  =  10565.421983514265
    Z(temp=2  )  =  2674.518123060087


Exercise 5 (2x2 lattice):
    Z(temp=1  )  =  121.23293134406595
    Z(temp=1.5)  =  40.922799092745386
    Z(temp=2  )  =  27.048782764334526


Exercise 6: (3x3 lattice)
    Z(temp=1  )  =  365645.7491357704
    Z(temp=1.5)  =  10565.421983514265
    Z(temp=2  )  =  2674.518123060087


Exercise 7: Printing images... (8x8 lattice)
    Printed successfully!


Exercise 8: Calculating empirical expectations (exact sampling)...
    E_(temp=1  )(x11,x22)  =  0.9508
    E_(temp=1  )(x11,x88)  =  0.9038
    E_(temp=1.5)(x11,x22)  =  0.7566
    E_(temp=1.5)(x11,x88)  =  0.5446
    E_(temp=2  )(x11,x22)  =  0.5230
    E_(temp=2  )(x11,x88)  =  0.1236


Exercise 9:
    Calculating empirical mean (Independent method)...
```

```
        E_(temp=1  )(x11,x22)  =  0.9322000000000004
        E_(temp=1  )(x11,x88)  =  0.5416000000000004
        E_(temp=1.5)(x11,x22)  =  0.7484000000000007
        E_(temp=1.5)(x11,x88)  =  0.3548000000000008
        E_(temp=2  )(x11,x22)  =  0.5027999999999988
        E_(temp=2  )(x11,x88)  =  0.10099999999999969
    Calculating empirical mean (Ergodicity method)...
        E_(temp=1  )(x11,x22)  =  0.9518072289156628
        E_(temp=1  )(x11,x88)  =  0.9034538152610445
        E_(temp=1.5)(x11,x22)  =  0.7722891566265037
        E_(temp=1.5)(x11,x88)  =  0.5562248995983924
        E_(temp=2  )(x11,x22)  =  0.5146184738955778
        E_(temp=2  )(x11,x88)  =  0.12497991967871501


Total runtime: 6 minutes and 46 seconds.

Process finished with exit code 0

```