model {

for (i in 1:N){

for (tt in 1:T){

y[i,tt]~dpois(mu[i,tt])

log.rates[i,tt]<-log(rates[i,tt])

log(mu[i,tt])<-log(n[i,tt])+log.rates[i,tt]

log.rates[i,tt]~dnorm(theta[i,tt],tau)

theta[i,tt]<-U[i]+gamma\_overall[tt]+gamma[i,tt]+gllc[i,tt]\*beta1+beta2\*cshl[i,tt]+beta3\*wengmang[i,tt]+midu[i,tt]\*beta4+beta5\*chuang[i,tt]+beta7\*jishu[i,tt]+beta8\*GDP[i,tt]+beta6\*bing[i,tt]

}

mu.u[i]<-alpha+s[i]

U[i]~dnorm(mu.u[i],tau\_U)

r[i]<-exp(s[i])

}

r1<-exp(beta1)

r2<-exp(beta2)

r3<-exp(beta3)

r4<-exp(beta4)

r5<-exp(beta5)

r6<-exp(beta6)

r7<-exp(beta7)

r8<-exp(beta8)

beta1~dnorm(0,0.001)

beta2~dnorm(0,0.001)

beta3~dnorm(0,0.001)

beta4~dnorm(0,0.001)

beta5~dnorm(0,0.001)

beta6~dnorm(0,0.001)

beta7~dnorm(0,0.001)

beta8~dnorm(0,0.001)

s[1:N]~car.normal(adj[],weights[],num[],tau\_s)

for (k in 1:sumNumNeigh){weights[k]<-1}

sigma\_s~dnorm(0,10)I(0,)

tau\_s<-pow(sigma\_s,-2)

sigma\_U~dnorm(0,10)I(0,)

tau\_U<-pow(sigma\_U,-2)

sigma~dnorm(0,10)I(0,)

tau<-pow(sigma,-2)

alpha~dflat()

st<-mean(gamma\_overall\_temp[1:T])

for(tt in 1:T){

gamma\_overall[tt]<-gamma\_overall\_temp[tt]-st

gamma\_overall\_temp[tt]~dnorm(mu\_gamma\_overall[tt],tau\_gamma\_overall)

mu\_gamma\_overall[tt]<-b0\*(tt-mt)

a[tt]<-exp(gamma\_overall[tt])

}

tau\_gamma\_overall<-pow(sigma\_gamma\_overall,-2)

sigma\_gamma\_overall~dnorm(0,10)I(0,)

for(i in 1:N) {

b1[i]~dnorm(mu\_beta\_sp[i],tau\_b1)

mu\_beta\_sp[i]<-beta\_sp[i]

for(tt in 1:T) {gamma[i,tt] <-b1[i]\*(tt-mt)}

}

beta\_sp[1:N]~car.normal(adj[],weights[],num[],tau\_beta\_sp)

sigma\_beta\_sp~dnorm(0,10)I(0,)

tau\_beta\_sp<-pow(sigma\_beta\_sp,-2)

sigma\_b1~dnorm(0,10)I(0,)

tau\_b1<-pow(sigma\_b1,-2)

b0~dflat()

for(tt in 1:T) {time[tt]<-tt}

mt<-mean(time[1:T])

}