Developer Documentation for Two-Dimensional Black-Scholes pricer

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1 Analysis of `PriceAmerican` function

Part of the project brief is to analyse the function `PriceAmerican`. Not sure what you mean by that, Alet. Here's the code from `Project.h`.

```
inline double PriceAmerican (const CorrBinModel& model,
                             const Payoff& payoff,
                             int N)
{
    vector<vector<double> > v,pv;
    vector<double> q = model.Get_q();
    double d = exp(-model.Get_r()*model.Get_h()),
           q00d = d*(1-q[0])*(1-q[1]),
           q01d = d*(1-q[0])*q[1],
           q10d = d*q[0]*(1-q[1]),
           q11d = d*q[0]*q[1];
    double ev,cv;
    v.resize(N+1);
    for(int j0=0; j0<=N; j0++)
    {
        v[j0].resize(N+1);
        for(int j1=0; j1<=N; j1++)
            v[j0][j1] = payoff.Value(model.S(N,j0,j1));
    }
    for(int n=N-1; n>=0; n--)
    {
        pv=v;
        for(int j0=0;j0<=n;j0++)
            for(int j1=0; j1 <= n; j1++)
            {
                ev = payoff.Value(model.S(n,j0,j1));
                cv = q00d*pv[j0][j1]
                    + q01d*pv[j0][j1+1]
                    + q10d*pv[j0+1][j1]
                    + q11d*pv[j0+1][j1+1];
                v[j0][j1] = (ev>cv)?ev:cv;
            }
    }
```

```
    return v[0][0];
};
```