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Input parameters:

- SpaceStepNumber N
- TimeStepNumber M

Output parameters:

- Price
- Delta

/*Time Step/*
Define the time step $k = \dfrac{T}{N}$.

/*Space localisation/*
Define the integration domain $D = [-l, l]$ using inequality there.

/*Space Step/*
Define the space step $h = \dfrac{2l}{M}$.
At each time, we have to solve the linear complementarity problem cf. there

/*Peclet Condition*/
If $|r - \delta| / \sigma^2$ is not small, then a more stable finite difference approximation is used. there.

/*Neumann Boundary Conditions/*

/*Lhs factor of implicit scheme/*
Initialize the matrix M issued from the totally implicit method in the cases of Neumann Boundary conditions. there

/*Gauss algorithm/*
This procedure transforms the tridiagonal matrix M in the lower triangular matrix $\tilde{M}$

/*Terminal value/*
Put the value of the payoff saved in *Obst* into a vector P which will be used to save the option value.

/*Finite difference Cycle/*
At any time step, described by the loop in the variable *TimeIndex*, we have to solve the linear complementarity problem cf. there

> **/*First Loop/***
> Compute the right hand side $\tilde{G}$ of the linear complementarity problem cf. there and save it in P.
>
> **/*Second Loop/***
> Solve the algorithm cf. there and save the option value in P.

/*Price*/

/*Delta*/

/*Memory Desallocation*/