

Matemática Aplicada a la Computación

Determinantes

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Ejecutando la función para hallar la inversa de una matriz usando la adjunta (metodo de cofactores):

$$A^{-1} = \frac{1}{|A|} \cdot (A^*)^t$$

The screenshot shows the Qt Creator IDE with a C++ project named 'Determinante'. The main file, 'squarematrix.cpp', contains functions for creating a matrix, calculating its determinant recursively, finding its adjugate, and finally calculating its inverse. The 'Terminal' window displays the output of the program, showing the original 3x3 matrix and its inverse.

```
105 }
106
107 float **SquareMatrix::adjunta(float **matriz, int din)
108 {
109     float **res = create_matrix(din);
110     for(int i=0; i<din; i++)
111     {
112         for(int j=0; j<din; j++)
113         {
114             float **Mtemp = create_matrix(din-1);
115             int ii=0;
116             for(int x=0; x<din; x++)
117             {
118                 int jj=0;
119                 if(x!=i)
120                 {
121                     for(int y=0; y<din; y++)
122                     {
123                         if(y!=j)
124                         {
125                             Mtemp[ii][jj] = matriz[x][y];
126                             jj++;
127                         }
128                     }
129                     ii++;
130                 }
131             }
132             res[i][j] = pow(-1, (i+1)+(j+1)) * det_Recursive(Mtemp, din-1);
133             delete Mtemp;
134         }
135     }
136     return res;
137 }
138
139 float **SquareMatrix::inversa(float **matriz, int din)
140 {
141     float **res = create_matrix(din);
142     float **adj = adjunta(matriz, din);
143     float det = det_Recursive(matriz, din);
144
145     for(int i=0; i<din; i++)
146     {
147         for(int j=0; j<din; j++)
148         {
149             res[i][j] = (1.0/detM) * adj[i][j];
150         }
151     }
152 }
```

Terminal Output:

```
Archivo Editar Ver Buscar Terminal Ayuda
2
0
1
3
0
0
5
1
1
-----MATRIZ ORIGINAL-----
2.00 0.00 1.00
3.00 0.00 0.00
5.00 1.00 1.00
-----MATRIZ INVERSA-----
0.00 0.33 0.00
-1.00 -1.00 1.00
1.00 -0.67 0.00
Press <RETURN> to close this window...
```