```c
1  #include <stdio.h>
2  #include <stdlib.h>
3
4  #define FIL 10
5  #define COL 10
6
7  /* PROTOTIPOS */
8  void cargarMatriz(int (*)[], int, int, int);
9  void verMatriz(int (*)[], int, int);
10 int extraeColumnaMaximo(int (*)[], int, int, int *);
11 void verColumna(int *, int);
12
13
14 /* FUNCION PRINCIPAL */
15 int main(void) {
16     int mat[FIL][COL], vec[FIL],
17         fil, col, num;
18
19     puts("=================================");
20     puts("      EXTRAER COLUMNA MÁXIMO      ");
21     puts("=================================");
22
23     do{
24         printf("\nIntroduce FILAS (entre 1 y %d): ", FIL);
25         scanf("%d", &fil);
26     } while(fil < 1 || fil > FIL);
27
28     do{
29         printf("Introduce COLUMNAS (entre 1 y %d): ", COL);
30         scanf("%d", &col);
31     } while(col < 1 || col > COL);
32
33     do{
34         printf("Introduce un valor aleatorio (entero entre 1 y %d): ",
   FIL*COL);
35         scanf("%d", &num);
36     } while(num < 1 || num > FIL*COL);
37
38     cargarMatriz(mat, fil, col, num);
39     verMatriz(mat, fil, col);
40
41     puts("\n\nVector columna máxima: ");
42
43     extraeColumnaMaximo(mat, fil, col, vec);
44     verColumna(vec, fil);
45
46     puts("");
47     system("pause");
48     return 0;
49 }
50
51 void cargarMatriz(int (*m)[COL], int nfil, int ncol, int num) {
52     int v = 3, valor, flag = 0;
53
54     for(int f = 0; f < nfil; f++) {
55         for(int c = 0; c < ncol; c++) {
56             if(f == 0 && c == 0) {
57                 m[f][c] = num;
58                 valor = num;
59                 flag = 1;
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```c
  60              } else if (flag == 1) {
  61                  m[f][c] = valor + v;
  62                  valor = m[f][c];
  63                  flag = 0;
  64                  v++;
  65              } else if (flag == 0) {
  66                  m[f][c] = valor - v;
  67                  valor = m[f][c];
  68                  flag = 1;
  69                  v++;
  70              }
  71          }
  72      }
  73 }
  74
  75 void verMatriz(int (*m)[COL], int nfil, int ncol) {
  76      for(int f = 0; f < nfil; f++) {
  77          puts("");
  78          for(int c = 0; c < ncol; c++) {
  79              printf("%5d", m[f][c]);
  80          }
  81      }
  82 }
  83
  84 int extraeColumnaMaximo(int (*m)[COL], int nfil, int ncol, int *v) {
  85      int max = m[0][0], mCol;
  86
  87      if(v == NULL || m == NULL || nfil <= 0 || nfil > FIL || ncol <= 0 || ncol
     > COL) return -1;
  88
  89      for(int f = 0; f < nfil; f++) {
  90          for(int c = 0; c < ncol; c++) {
  91              if(m[f][c] > max && (f != 0 && c != 0)) {
  92                  max = m[f][c];
  93                  mCol = c;
  94              }
  95          }
  96      }
  97
  98      for(int f = 0; f < nfil; f++) {
  99          v[f] = m[f][mCol];
 100      }
 101
 102      return 0;
 103 }
 104
 105 void verColumna(int *v, int dim) {
 106      for(int i = 0; i < dim; i++) printf("%5d", v[i]);
 107 }
```