


```
/

This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program. If not, see <http://www.gnu.org/licenses/>.
*/
////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
/

////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
/

// DEBUT DU PROGRAMME

////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
/

#include <Minitel1B_Hard.h>

Minitel minitel(Serial2); // Le port utilisé sur ESP32

int wait = 10000;

////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
/

void setup() {
  Serial.begin(115200); // Le port de debug
  minitel.changeSpeed(minitel.searchSpeed());
}

////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
/

void loop() {
  demoCaracteres();
  demoGraphic();
  demoTailles();
}
```

```

demoCouleurs();
demoCurseur();
}

////////////////////////////////////
/

void newPage(String titre) {
  minitel.newScreen();
  minitel.println(titre);
  for (int i=1; i<=40; i++) {
    minitel.writeByte(0x7E);
  }
  minitel.moveCursorReturn(1);
}

////////////////////////////////////
/

void demoCaracteres() {
  newPage("LES CARACTERES");

  // Mode texte

  minitel.println("MODE TEXTE SANS LIGNAGE :");
  for (int i=0x20; i<=0x7F; i++) {
    minitel.writeByte(i);
  }
  minitel.moveCursorReturn(2);

  minitel.println("MODE TEXTE AVEC LIGNAGE :");
  minitel.attributs(DEBUT_LIGNAGE); // En mode texte, le lignage est
  déclenché par le premier espace rencontré (0x20).
  for (int i=0x20; i<=0x7F; i++) {
    minitel.writeByte(i);
  }
  minitel.attributs(FIN_LIGNAGE);
  minitel.moveCursorReturn(2);

  // Mode semi-graphique

  minitel.textMode();
  minitel.println("MODE SEMI-GRAPHIQUE SANS LIGNAGE :");
  minitel.graphicMode();
  for (int i=0x20; i<=0x7F; i++) {
    minitel.writeByte(i);
  }
  minitel.moveCursorReturn(2);

  minitel.textMode();
  minitel.println("MODE SEMI-GRAPHIQUE AVEC LIGNAGE :");
}

```

```
minitel.graphicMode();
minitel.attributs(DEBUT_LIGNAGE);
for (int i=0x20; i<=0x7F; i++) {
    minitel.writeByte(i);
}
minitel.attributs(FIN_LIGNAGE);
minitel.moveCursorReturn(2);

delay(wait);
}

////////////////////////////////////
/

void demoGraphic() {
    newPage("LA FONCTION GRAPHIC");
    minitel.textMode();
    minitel.println("Un caractère semi-graphique est composé de 6 pseudo-
pixels :");
    minitel.println();
    minitel.graphicMode();
    minitel.attributs(DEBUT_LIGNAGE);
    minitel.writeByte(0x7F);
    minitel.attributs(FIN_LIGNAGE);
    minitel.textMode();
    minitel.print(" avec lignage ou ");
    minitel.graphicMode();
    minitel.writeByte(0x7F);
    minitel.textMode();
    minitel.println(" sans lignage.");
    minitel.println();
    String chaine = "";
    chaine += "minitel.graphic(0b101011) donne ";
    minitel.textMode();
    minitel.print(chaine);
    minitel.graphicMode();
    minitel.graphic(0b101011);
    minitel.textMode();
    minitel.println();
    minitel.println();
    chaine = "";
    chaine += "minitel.graphic(0b110110,30,15) donne ";
    minitel.print(chaine);
    minitel.graphicMode();
    minitel.graphic(0b110110,30,15);
    minitel.noCursor();
    delay(2*wait);
}
```

```

////////////////////////////////////
/

void demoTailles() {
  newPage("LES TAILLES");
  minitel.println("GRANDEUR_NORMALE");
  minitel.attributs(DOUBLE_HAUTEUR);
  minitel.print("DOUBLE_HAUTEUR");
  minitel.attributs(DOUBLE_LARGEUR);
  minitel.println();
  minitel.println("DOUBLE_LARGEUR");
  minitel.attributs(DOUBLE_GRANDEUR);
  minitel.println("DOUBLE_GRANDEUR");
  minitel.println();
  minitel.attributs(GRANDEUR_NORMALE);
  minitel.attributs(DEBUT_LIGNAGE); // En mode texte, le lignage est
  déclenché par le premier espace rencontré (0x20).
  minitel.println("SEULEMENT EN MODE TEXTE");
  minitel.attributs(FIN_LIGNAGE);
  minitel.println();
  delay(wait);
}

////////////////////////////////////
/

void demoCouleurs() {
  newPage("LES COULEURS");
  for (int i=0; i<=1; i++) {
    if (i==0) { minitel.textMode(); }
    if (i==1) { minitel.graphicMode(); }
    minitel.attributs(INVERSION_FOND);
    minitel.print("CARACTERE_NOIR, FOND_BLANC");
    minitel.attributs(FOND_NORMAL);
    minitel.println(" (INVERSION)");
    minitel.attributs(CARACTERE_ROUGE);
    minitel.println("CARACTERE_ROUGE");
    minitel.attributs(CARACTERE_VERT);
    minitel.println("CARACTERE_VERT");
    minitel.attributs(CARACTERE_JAUNE);
    minitel.println("CARACTERE_JAUNE");
    minitel.attributs(CARACTERE_BLEU);
    minitel.println("CARACTERE_BLEU");
    minitel.attributs(CARACTERE_MAGENTA);
    minitel.println("CARACTERE_MAGENTA");
    minitel.attributs(CARACTERE_CYAN);
    minitel.println("CARACTERE_CYAN");
    minitel.attributs(CARACTERE_BLANC);
    minitel.println("CARACTERE_BLANC");
    minitel.println();
  }
}

```

```
delay(wait);
}

/////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
/

void demoCurseur() {
  minitel.cursor();
  newPage("DEPLACER LE CURSEUR");
  minitel.moveCursorXY(20,12);
  for (int i=1; i<=100; i++) {
    delay(100);
    switch (random(4)) {
      case 0: minitel.moveCursorRight(1+random(3)); break;
      case 1: minitel.moveCursorLeft(1+random(3)); break;
      case 2: minitel.moveCursorDown(1+random(3)); break;
      case 3: minitel.moveCursorUp(1+random(3)); break;
    }
  }
  newPage("POSITIONNER LE CURSEUR");
  minitel.textMode();
  for (int i=1; i<1000; i++) {
    minitel.moveCursorXY(1+random(40),3+random(22));
    minitel.writeByte(0x20 + random(0x60));
  }

  minitel.newScreen();
  minitel.textMode();
  minitel.noCursor();
  for (int i=1; i<1000; i++) {
    if (random(4)<3) { minitel.textMode(); }
    else {
      minitel.graphicMode();
      minitel.attributs(DEBUT_LIGNAGE);
    }
    minitel.attributs(0x4C+random(5));
    minitel.writeByte(0x20 + random(0x60));
    minitel.attributs(FIN_LIGNAGE);
  }
}

/////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////
/
```

Arduino_Minitel.ino

```
#include <SoftwareSerial.h>
SoftwareSerial mySerial(2, 3);
```

```
byte gauche = 8;
byte droite = 9;
byte bas = 10;
byte haut = 11;
byte debutDeLigne = 13;
byte hautGauche = 30;
byte hautGaucheEfface = 12;
byte separateurDeSousArticle = 31;
byte remplissageEspace = 24; //Remplit le reste de la rangée avec des
//espaces
byte CBleu = 68; // caractère niveau gris bleu
byte CBlanc = 71; // caractère couleur blanche
byte Clignote = 72 ; // caractère clignote
byte Fixe = 73 ; // caractère fixe
byte NormalH = 76 ; // taille caractère normal
byte DoubleH = 77 ; // double hauteur
byte Ligne = 90 ; // caractère souligné
byte SLigne = 89; // annule souligné

short incomming;
char inascii = » »;
short outcomming;
int TS = 0; // touche spéciale
String TSS = « »; // touche spéciale texte

void setup() {

Serial.begin(1200); // port serie vers le PC
mySerial.begin(1200); // port serie vers le minitel

mySerial.write(hautGaucheEfface); //efface l'écran
// serialprint7(0x0E); // passe en mode graphique
delay(500);
sendMessage(« BONJOUR »);
CR();
sendMessage(« BONSOIR »);
Gauche(3);
sendMessage(« REBONSOIR »);
Droite(3);
delay(1000);
sendMessage(« JOUR »);
CR();
ESC(Clignote);
sendMessage(« BONJOUR »);
ESC(Fixe);
CR();
CR();
ESC(DoubleH);
sendMessage(« BONJOUR »);
CR();
```

```
ESC(NormalH);
ESC(CBleu);
sendMessage(« BONJOUR »);
CR();
ESC(CBlanc);
sendMessage(« BONJOUR »);
CR();
ESC(Ligne);
sendMessage( » BONJOUR »);
CR();
ESC(SLigne);
sendMessage(« BONJOUR »);
CR();
Serial.println( » « );
}

char modifyParity(char c) {
char i = 1 << 6;
boolean p = false;
c &= B01111111;
while (i) {
if (c & i) {
p = !p;
}
i >>= 1;
}
c |= p << 7;
return c;
}

void sendMessage(char *msg) {
int i = 0;
while (msg[i]) {
serialprint7(msg[i]);
i++;
}
Serial.write(msg);
Serial.flush();
}

void serialprint7(byte b) // permet d'ecrire en 7 bits + parité sur le
software serial
{
boolean i = false;
for (int j = 0; j < 8; j++)
{
if (bitRead(b, j) == 1) i = !i; //calcul de la parité
}
if (i) bitWrite(b, 7, 1); //écriture de la partié
```

```
else bitWrite(b, 7, 0); //écriture de la partié
mySerial.write(b); //écriture du byte sur le software serial
}

void Gauche(int g) {
for (int i = 0; i <= g; i++) {
serialprint7(9);
}
}

void Droite(int g) {
for (int i = 0; i <= g; i++) {
serialprint7(8);
}
}

void Haut(int g) {
for (int i = 0; i <= g; i++) {
serialprint7(11);
}
}

void ESC(int c){
serialprint7(27);
serialprint7(c);
}

void CR() {
serialprint7(13);
serialprint7(10);
}

void loop() //tout ce que je recois sur le port serie, je le renvoi sur
le software serial
{

// Serial.println(« loop »);
if (Serial.available()) {
outcomming = Serial.read();
Serial.print(« saisie arduino: »);
Serial.println (outcomming);
// serialprint7(incomming);
serialprint7(outcomming);
}

if (mySerial.available()) {
incomming = mySerial.read() & B01111111; // ignore parity check //
ignore parity check
Serial.print(« saisie minitel : »);
inascii = char(incomming);
Serial.println (inascii);
}
```

```
if (TS == 1) {
  touchespeciales();
  TS = 0;
}
if (incomming == 19) {
  TS = 1;
}

}

}

void touchespeciales() {
  switch (incomming) {
  case 70:
    Serial.println (« Sommaire »);
    TSS = « Sommaire »;
    break;
  case 69:
    Serial.println (« Annulation »);
    TSS = « Annulation »;
    break;
  case 66:
    Serial.println (« Retour »);
    TSS = « Retour »;
    break;
  case 67:
    Serial.println (« Repetition »);
    TSS = « Repetition »;
    break;
  case 68:
    Serial.println (« Guide »);
    TSS = « Guide »;
    break;
  case 71:
    Serial.println (« Correction »);
    TSS = « Correction » ;
    break;
  case 72:
    Serial.println (« Suite »);
    TSS = « Suite »;
    break;
  case 65:
    Serial.println (« Envoi »);
    TSS = « Envoi »;
    break;
  case 89:
    Serial.println (« Connexion »);
    TSS = « Connexion »;
```

```
break;  
  
}  
}
```

Programme 2 Minitel1B_ChessUI.ino

Minitel1B_ChessUI.ino

```
// programme à Tester ???  
  
#include <Minitel1B_Hard.h>  
  
#define MINITEL_PORT Serial2 //for ESP32  
//#define MINITEL_PORT Serial1 //for Leonardo  
  
#define DEBUG true  
#define DEBUG_PORT Serial  
  
#if DEBUG // Debug enabled  
  #define debugBegin(x)    DEBUG_PORT.begin(x)  
  #define debugPrint(x)   DEBUG_PORT.println(x)  
  #define debugPrintHEX(x) DEBUG_PORT.println(x,HEX)  
  #define debugPrintBIN(x) DEBUG_PORT.println(x,BIN)  
#else // Debug disabled : Empty macro functions  
  #define debugBegin(x)  
  #define debugPrint(x)  
  #define debugPrintHEX(x)  
  #define debugPrintBIN(x)  
#endif  
  
#define CASE_WIDTH 4  
#define CASE_HEIGHT 3  
#define BOARD_TOP 1  
#define BOARD_LEFT 1  
#define PIECE_WIDTH 3  
#define PIECE_HEIGHT 3  
  
#define SCORE_TOP 1  
#define SCORE_LEFT 33  
#define SCORE_WIDTH 8  
#define SCORE_HEIGHT 24  
#define SCORE_BLACK_TOP 1  
#define SCORE_WHITE_TOP 16  
#define SCORE_HEIGHT_2 9 // indiv. score frame  
#define SCORE_MOVE_TOP 10  
#define SCORE_HEIGHT_3 6 // move frame
```

```
Minitel minitel(MINITEL_PORT);

enum { VOID, PAWN, ROOK, KNIGHT, BISHOP, QUEEN, KING};
enum {_BLACK = 0, _WHITE = 128};

byte piece[7][PIECE_WIDTH*PIECE_HEIGHT] = {
    // pieces en caractères semi-graphiques 3 par 3 décrites par lignes
    // de haut-gauche à bas-droite
    {0b000000, 0b000000, 0b000000, 0b000000, 0b000000, 0b000000,
    0b000000, 0b000000, 0b000000}, // VOID
    {0b000000, 0b000000, 0b000000, 0b000101, 0b101111, 0b000000,
    0b000100, 0b101100, 0b000000}, // PAWN
    {0b000010, 0b000010, 0b000010, 0b110101, 0b111101, 0b100000,
    0b011100, 0b011100, 0b001000}, // ROOK
    {0b000000, 0b000111, 0b000010, 0b011110, 0b011101, 0b101010,
    0b001100, 0b111100, 0b001000}, // KNIGHT
    {0b000001, 0b001011, 0b000000, 0b111111, 0b101111, 0b101010,
    0b011100, 0b111100, 0b001000}, // BISHOP
    {0b001001, 0b000011, 0b001000, 0b000111, 0b101111, 0b000010,
    0b111100, 0b011100, 0b101000}, // QUEEN
    {0b000001, 0b001011, 0b000000, 0b000111, 0b101111, 0b000010,
    0b111100, 0b011100, 0b101000} // KING
};

byte board[8][8] { //top-left to bottom-right - _BLACK or _WHITE added
later
    /*{ROOK,    KNIGHT, BISHOP, QUEEN, KING,    BISHOP, KNIGHT, ROOK },
    {PAWN,    PAWN,    PAWN,    PAWN,    PAWN,    PAWN,    PAWN,    PAWN },
    {VOID,    VOID,    VOID,    VOID,    VOID,    VOID,    VOID,    VOID },
    {VOID,    VOID,    VOID,    VOID,    VOID,    VOID,    VOID,    VOID },
    {VOID,    VOID,    VOID,    VOID,    VOID,    VOID,    VOID,    VOID },
    {VOID,    VOID,    VOID,    VOID,    VOID,    VOID,    VOID,    VOID },
    {PAWN,    PAWN,    PAWN,    PAWN,    PAWN,    PAWN,    PAWN,    PAWN },
    {ROOK,    KNIGHT, BISHOP, QUEEN, KING,    BISHOP, KNIGHT, ROOK }*/
};

int cx = 0; // 0-7 > A-H
int cy = 7; // 0-7 > 8-1

int scx = -1; // first case selected
int scy = -1; //

String moveStr = "  - ";
String lastStr = "  - ";

byte player = _WHITE;

void setup() {
```

```
debugBegin(115200);
debugPrint("> Debug start");

delay(500);

// Minitel setup
int baud = minitel.searchSpeed();
debugPrint("> Minitel is at " + String(baud) + "bds");
if (baud != 4800) {
  debugPrint("> Set to 4800 bauds");
  if (minitel.changeSpeed(4800) < 0) { // try set speed to 4800 if
needed
    debugPrint(" *** Failed to change speed ***");
    minitel.searchSpeed(); // search back if failed
  }
}

//minitel.modeVideotex();
minitel.echo(false);
minitel.extendedKeyboard(); //need arrows
minitel.clearScreen();
minitel.moveCursorXY(1,1);
minitel.noCursor();
minitel.attributes(FIXE);
debugPrint("> Minitel setup done");

// Intialize game board
initBoard();
drawBoard();
drawAllPieces();
drawScoreBoard();

//hoverCase(cx,cy, true);
}

String keyboardInput = "";

void loop() {

  char c = 0;

  c = getKeyboardInput();

  switch (c) {
    // nothing
    case 0: break;

    // move on board
```

```
case UP:    moveUp();    break;
case DOWN:  moveDown();  break;
case LEFT:  moveLeft();  break;
case RIGHT: moveRight(); break;

// cancel selection
case DEL:
case CAN:
    if (scx != -1) { // cancel selection
        selectCase(scx, scy, false);
        scx = -1; scy = -1;
        moveStr = "  -  ";
        writeMove();
    }
    break;

// move selection
case CR:
    if (scx == -1 || scy == -1) {
        // first case selection
        scx = cx;
        scy = cy;
        selectCase(cx, cy, true);
        moveStr.setCharAt(1, cx+65); // A(65)-H
        moveStr.setCharAt(2, 56-cy); // 8(56)-1
        writeMove();
    }
    else {
        if (cx == scx && cy == scy) {
            // cancel first case selection
            selectCase(cx, cy, false);
            moveStr = "  -  ";
            writeMove();
            scx = -1; scy = -1;
        }
        else {
            // second case selection
            //TODO: verify legal move
            moveStr.setCharAt(4, cx+65); // A(65)-H
            moveStr.setCharAt(5, 56-cy); // 8(56)-1
            writeMove();
            board[cx][cy] = board[scx][scy];
            board[scx][scy] = VOID;
            erasePiece(scx, scy);
            selectCase(scx, scy, false);
            drawPiece(cx, cy, board[cx][cy]);
            scx = -1; scy = -1;
            if (player == _WHITE) player = _BLACK;
            else player = _WHITE;
        }
    }
}
```

```

        lastStr = moveStr;
        moveStr = "  - ";
        redrawMove();
    }
}
break;
}
}

void initBoard() {
    for (int i = 0; i < 5; i++) board[i][0] = (i+2) + _BLACK;
    for (int i = 5; i < 8; i++) board[i][0] = (5-i+4) + _BLACK;
    for (int i = 0; i < 8; i++) board[i][1] = PAWN + _BLACK;
    for (int j = 2; j < 6; j++) {
        for (int i = 0; i < 8; i++) board[i][j] = VOID;
    }
    for (int i = 0; i < 5; i++) board[i][7] = (i+2) + _WHITE;
    for (int i = 5; i < 8; i++) board[i][7] = (5-i+4) + _WHITE;
    for (int i = 0; i < 8; i++) board[i][6] = PAWN + _WHITE;
}

void drawBoard() {

    minitel.textMode();
    minitel.attributs(GRANDEUR_NORMALE);

    minitel.graphicMode();
    minitel.moveCursorXY(BOARD_LEFT, BOARD_TOP);
    bool dark = false;
    int cy = 8;
    while (cy > 0) {
        int row = 1;
        while (row <= CASE_HEIGHT) {
            int cx = 1;
            while (cx < 9) {
                if (dark) minitel.attributs(FOND_BLEU);
                else minitel.attributs(FOND_VERT);
                minitel.graphic(0b000000);
                minitel.repeat(CASE_WIDTH - 1);
                if (row < 3) {
                    minitel.moveCursorLeft(CASE_WIDTH);
                    minitel.textMode();
                    if (dark) minitel.attributs(CARACTERE_BLEU);
                    else minitel.attributs(CARACTERE_VERT);
                    minitel.attributs(INVERSION_FOND);
                    if (row == 1) minitel.printChar(cx+64); // A-H
                    else minitel.printChar(cy+48); // 1-8
                    minitel.moveCursorRight(CASE_WIDTH - 1);
                    minitel.graphicMode();
                }
                dark = !dark;
            }
            row++;
        }
        cy--;
    }
}

```

```
        CX++;
    }
    minitel.moveCursorLeft(CASE_WIDTH*8);
    minitel.moveCursorDown(1);
    row++;
}
dark = !dark;
cy--;
}
}

void drawScoreBoard() {

    drawBackground();

    drawFrame(SCORE_LEFT, SCORE_BLACK_TOP, SCORE_WIDTH, SCORE_HEIGHT_2,
    _BLACK);
    //drawFrame(SCORE_LEFT, SCORE_MOVE_TOP, SCORE_WIDTH, SCORE_HEIGHT_3,
    _WHITE);
    drawFrame(SCORE_LEFT, SCORE_WHITE_TOP, SCORE_WIDTH, SCORE_HEIGHT_2,
    _WHITE);

    minitel.textMode();
    minitel.attributs(GRANDEUR_NORMALE);
    int sx = SCORE_BLACK_TOP;
    minitel.attributs(CARACTERE_NOIR);
    minitel.attributs(INVERSION_FOND);
    sx++;
    minitel.moveCursorXY(SCORE_LEFT+1,sx);
    minitel.print("BLACK ");
    minitel.attributs(FOND_NORMAL);
    sx+=2;
    minitel.moveCursorXY(SCORE_LEFT+1,sx);
    minitel.print("time:");
    minitel.attributs(INVERSION_FOND);
    sx++;
    minitel.moveCursorXY(SCORE_LEFT+1,sx);
    minitel.print(" --:--");
    minitel.attributs(FOND_NORMAL);
    sx+=2;
    minitel.moveCursorXY(SCORE_LEFT+1,sx);
    minitel.print("str:");
    minitel.attributs(INVERSION_FOND);
    sx++;
    minitel.moveCursorXY(SCORE_LEFT+1,sx);
    minitel.print("  --");

    sx = SCORE_MOVE_TOP;
    minitel.attributs(CARACTERE_BLANC);
```

```
minitel.attributs(FOND_NORMAL);
sx++;
minitel.moveCursorXY(SCORE_LEFT+1,sx);
minitel.print("move:");
minitel.attributs(CARACTERE_BLANC);
minitel.attributs(INVERSION_FOND);
sx++;
minitel.moveCursorXY(SCORE_LEFT+1,sx);
minitel.print(moveStr);
minitel.attributs(CARACTERE_NOIR);
minitel.attributs(FOND_NORMAL);
sx++;
minitel.moveCursorXY(SCORE_LEFT+1,sx);
minitel.print("last:");
minitel.attributs(CARACTERE_NOIR);
minitel.attributs(INVERSION_FOND);
sx++;
minitel.moveCursorXY(SCORE_LEFT+1,sx);
minitel.print(lastStr);

sx = SCORE_WHITE_TOP;
minitel.attributs(CARACTERE_BLANC);
minitel.attributs(INVERSION_FOND);
sx++;
minitel.moveCursorXY(SCORE_LEFT+1,sx);
minitel.print("WHITE ");
minitel.attributs(FOND_NORMAL);
sx+=2;
minitel.moveCursorXY(SCORE_LEFT+1,sx);
minitel.print("time:");
minitel.attributs(INVERSION_FOND);
sx++;
minitel.moveCursorXY(SCORE_LEFT+1,sx);
minitel.print(" --:--");
minitel.attributs(FOND_NORMAL);
sx+=2;
minitel.moveCursorXY(SCORE_LEFT+1,sx);
minitel.print("str:");
minitel.attributs(INVERSION_FOND);
sx++;
minitel.moveCursorXY(SCORE_LEFT+1,sx);
minitel.print("  --");
}

void drawBackground() {
  int sy = SCORE_TOP;
  minitel.graphicMode();
  minitel.attributs(FOND_MAGENTA);
  while (sy < SCORE_TOP + SCORE_HEIGHT) {
    minitel.moveCursorXY(SCORE_LEFT,sy);
```

```
    minitel.graphic(0b000000);
    minitel.repeat(SCORE_WIDTH-1);
    sy++;
  }
}

void writeMove() {
  minitel.textMode();
  if (player == _WHITE) {
    minitel.attributs(CARACTERE_BLANC);
    minitel.attributs(INVERSION_FOND);
  }
  minitel.moveCursorXY(SCORE_LEFT+1,SCORE_MOVE_TOP+2);
  minitel.print(moveStr);
}

void redrawMove() {
  int sx = SCORE_MOVE_TOP;
  minitel.textMode();
  if (player == _WHITE) minitel.attributs(CARACTERE_BLANC);
  else minitel.attributs(CARACTERE_NOIR);
  minitel.attributs(FOND_NORMAL);
  sx++;
  minitel.moveCursorXY(SCORE_LEFT+1,sx);
  minitel.print("move:");
  if (player == _WHITE) minitel.attributs(CARACTERE_BLANC);
  else minitel.attributs(CARACTERE_NOIR);
  minitel.attributs(INVERSION_FOND);
  sx++;
  minitel.moveCursorXY(SCORE_LEFT+1,sx);
  minitel.print(moveStr);
  if (player == _WHITE) minitel.attributs(CARACTERE_NOIR);
  else minitel.attributs(CARACTERE_BLANC);
  minitel.attributs(FOND_NORMAL);
  sx++;
  minitel.moveCursorXY(SCORE_LEFT+1,sx);
  minitel.print("last:");
  if (player == _WHITE) minitel.attributs(CARACTERE_NOIR);
  else minitel.attributs(CARACTERE_BLANC);
  minitel.attributs(INVERSION_FOND);
  sx++;
  minitel.moveCursorXY(SCORE_LEFT+1,sx);
  minitel.print(lastStr);
}

void drawFrame(int x, int y, int w, int h, int c) {
```

```

int sy = y;
minitel.graphicMode();
minitel.attributs(FOND_MAGENTA);
if (c == _BLACK) minitel.attributs(CARACTERE_NOIR);
else minitel.attributs(CARACTERE_BLANC);
minitel.moveCursorXY(x, sy);
minitel.graphic(0b000001);
minitel.graphic(0b000011);
minitel.repeat(w-3);
minitel.graphic(0b000010);
sy++;
while (sy < y + h - 1) {
    minitel.moveCursorXY(x, sy);
    minitel.graphic(0b010101);
    minitel.graphic(0b000000);
    minitel.repeat(w-3);
    minitel.graphic(0b101010);
    sy++;
}
minitel.moveCursorXY(x, sy);
minitel.graphic(0b010000);
minitel.graphic(0b110000);
minitel.repeat(w-3);
minitel.graphic(0b100000);
}

void drawPiece(int cx, int cy, byte pc) {
    // x : from 0 to 7 - left to right
    // y : from 0 to 7 - top to bottom
    int x = cx * CASE_WIDTH + 1;
    int y = cy * CASE_HEIGHT + 1;

    byte color = _BLACK;
    if (pc > _WHITE) color = _WHITE;
    byte p = pc - color;

    minitel.graphicMode();

    if (color == _WHITE) {
        minitel.attributs(DEBUT_LIGNAGE);
        minitel.attributs(CARACTERE_BLANC);
    }
    else { // _BLACK
        minitel.attributs(CARACTERE_NOIR);
    }
    if ((cx+cy)%2 == 1) minitel.attributs(FOND_BLEU);
    else minitel.attributs(FOND_VERT);

    for (int j = 0; j < PIECE_HEIGHT; j++) {
        minitel.moveCursorXY(x+1, y+j);
        for (int i = 0; i < PIECE_WIDTH; i++) {

```

```
        minitel.graphic(piece[p][i+j*PIECE_WIDTH]);
    }
}
if (color == _WHITE) {
    minitel.attributs(FIN_LIGNAGE);
}
}

void erasePiece(int cx, int cy) {
    // x : from 0 to 7 - left to right
    // y : from 0 to 7 - top to bottom
    drawPiece(cx, cy, VOID);
}

void drawAllPieces() {
    for (int i = 0; i < 8; i++) {
        for (int j = 0; j < 8; j++) {
            if (j<2 || j>5) drawPiece(i, j, board[i][j]);
        }
    }
}

void hoverCase(int cx, int cy, bool hover) {
    if (cx == scx && cy == scy) selectCase(cx, cy, true);
    else {
        int x = cx*CASE_WIDTH + 1;
        int y = cy*CASE_HEIGHT + 3;
        bool dark = false;
        if ((cx+cy)%2 == 1) dark = true;
        minitel.moveCursorXY(x,y);
        minitel.graphicMode();
        if (dark) minitel.attributs(FOND_BLEU);
        else minitel.attributs(FOND_VERT);
        if (hover) {
            minitel.attributs(CARACTERE_BLANC);
            minitel.graphic(0b111111);
        }
        else minitel.graphic(0b000000);
    }
}

void selectCase(int cx, int cy, bool sel) {
    int x = cx*CASE_WIDTH + 1;
    int y = cy*CASE_HEIGHT + 3;
    bool dark = false;
    if ((cx+cy)%2 == 1) dark = true;
    minitel.moveCursorXY(x,y);
    minitel.graphicMode();
    if (dark) minitel.attributs(FOND_BLEU);
```

```
else minitel.attributs(FOND_VERT);
if (sel) {
    minitel.attributs(CARACTERE_NOIR);
    minitel.graphic(0b111111);
}
else {
    minitel.graphic(0b000000);
}
}

void moveUp() {
    if (cy > 0) {
        hoverCase(cx,cy, false);
        cy--;
        hoverCase(cx,cy, true);
    }
}

void moveDown() {
    if (cy < 7) {
        hoverCase(cx,cy, false);
        cy++;
        hoverCase(cx,cy, true);
    }
}

void moveLeft() {
    if (cx > 0) {
        hoverCase(cx,cy, false);
        cx--;
        hoverCase(cx,cy, true);
    }
}

void moveRight() {
    if (cx < 7) {
        hoverCase(cx,cy, false);
        cx++;
        hoverCase(cx,cy, true);
    }
}

char getKeyboardInput() {

    unsigned long key = minitel.getKeyCode();
    if (key != 0) {
        debugPrintHEX(key);
        // key redirection/inhibition
        switch (key) {

            // cancel selection
```

```
case CORRECTION:
case ANNULATION:
case RETOUR:
case ESC:
                                return CAN; break;

// validate selection
case ENVOI:
case SP:
                                return CR; break;

// navigate
case TOUCHE_FLECHE_HAUT: return UP; break;
case TOUCHE_FLECHE_BAS: return DOWN; break;
case TOUCHE_FLECHE_DROITE: return RIGHT; break;
case TOUCHE_FLECHE_GAUCHE: return LEFT; break;

// inhibited
case CONNEXION_FIN:
case SOMMAIRE:
case REPETITION:
case GUIDE:
case SUITE:
                                return 0; break;

default: return key;

}
}
else return 0;
}
```

From: <https://www.fablab37110.chanterie37.fr/> - **Castel'Lab le Fablab MJC de Château-Renault**

Permanent link: <https://www.fablab37110.chanterie37.fr/doku.php?id=start:arduino:minitel:programme&rev=1658763992>

Last update: **2023/01/27 16:08**

