

<<singleton>>
Count

```
int _nodes
int _bitboards
int _bitboardsC4
int _nbleaves
int _nodes_created
int _nodes_saved
int _bitboards_saved
int _bitboardsC4_saved
int _nbleaves_saved
int _max_depth
static Count* UniqueInstance
```

```
Count()
~Count()
int ratio(int&, int&)
Public :
static Count* I()
void addNode()
void rmNode()
void createNode(int)
void addBitBoards()
void rmBitBoards()
void addBitBoardsC4()
void rmBitBoardsC4()
void saveNbLeaves(int)
void saveMaxDepth(int)
void clear()
std::ostream& operator<< (std::ostream&, Count*)
```

<<singleton>>
Random

```
static uint64_t _seed
static Random* UniqueInstance
static std::mt19937_64 rng
Random(uint64_t)
~Random()
Public :
static Random* I(uint64_t)
int getNum(int, int)
```

Move

```
std::string _data
Public :
Move()
Move(std::string)
Move(int)
~Move()
int getInt()
std::string getMove()
void set(std::string)
std::string get()
bool compare(const Move) const
std::ostream& operator<< (std::ostream&, Move&)
std::istream& operator>> (std::istream&, Move&)
bool operator== (const Move&, const Move&)
```

<<Interface>>

TheGame

```
Public :
~TheGame()
int end(const Bitboard*)
void play(Move&, Bitboard*)
void displayBoard(const Bitboard*)
std::list<Move> listPossibleMoves(Bitboard*)
int playRandomMoves(Bitboard*)
```

Connect4

```
Public :
Connect4()
~Connect4()
int end(const Bitboard*)
void play(Move&, Bitboard*)
void displayBoard(const Bitboard*)
std::list<Move> listPossibleMoves(Bitboard*)
int playRandomMoves(Bitboard*)
```

Bitboard

```
std::vector<uint64_t> _boards
short _toplay
short _number
short _sizeX
short _sizeY
Public :
Bitboard()
Bitboard(int, int, int, int)
~Bitboard()
Bitboard* clone() const
int getSizeX() const
int getSizeY() const
int getBit(int n, int x, int y) const
int getBit(int n, int pos) const
void setBit(int n, int x, int y)
void setBit(int n, int pos)
void clearBit(int n, int x, int y)
void clearBit(int n, int pos)
uint64_t getBoard(int n) const
std::list<int> getEmpty(int n) const
std::list<int> getOccupied(int n)
int getPlayer() const
void play()
```

BitboardConnect4

```
Public :
BitboardConnect4()
~BitboardConnect4()
BitboardConnect4* clone() const
std::list<int> getEmpty(int n) const
```