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| <pre> template<class Sq> class Game //classe abstraite </pre> | |
| <pre> public: Game(int,int); //dimensions virtual void play(); virtual void demo(); virtual ~Game(); protected: const int height; const int width; vector<Sq>* plateau; long long score; </pre> | <pre> private: bool quit; virtual void init()=0; virtual bool is_over() const=0; virtual void move(Direction)=0; virtual void print_board(ostream& o=cout) const; friend ostream& operator<<(ostream& o, const Game<Sq>& game); virtual void move_up(); virtual void move_down(); virtual void move_left(); virtual void move_right(); virtual bool is_stuck() const; </pre> |

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enum class Direction { up, down, left, right }
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enum class Square_Sokoban { empty, wall, pers, crate, target, crate_target, pers_target }
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ostream& operator<<(ostream& out, Square_Sokoban const& c);
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enum class Action_2048 { none, mult, destroy }
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string to_string(Action_2048 action);
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| <pre> class Game_2048 : public Game<Square_2048> </pre> | <pre> template <class C> class Taquin : public Game<Square_Taquin<C>> </pre> | <pre> class Sokoban : public Game<Square_Sokoban> </pre> |
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| <pre> public: Game_2048(int height); protected: vector<long long> values; vector<Action_2048> actions; virtual bool mergeable(Square_2048&, Square_2048&) const; private: bool board_change; vector<pair<int, int>> empty_squares; virtual void init(); virtual void move(Direction dir); virtual bool is_over() const; void transpose_board(); void pop_up_new_square(); void slide_line(int i, Direction dir); void merge_line(int i, Direction dir); void add_empty_square(int i, int j); template<class It> int slide_line_template(It begin, It end); void slide_board(Direction dir, bool transpose); template<class It> void merge_line_template(It begin, It end); template<class It> int slide_merged_line(It begin, It end); virtual Square_2048 merge(Square_2048&, Square_2048&); </pre> | <pre> public: static const Square_Taquin<C> empty; Taquin(int,int); virtual ~Taquin(); protected: int pos_empty_w; int pos_empty_h; virtual void init(); virtual bool is_over() const; virtual void move(); void fill(); void mix(); </pre> | <pre> public: Sokoban(int h,int w, int nb_crates=-1); virtual ~Sokoban(); protected: static const int min_height=10; static const int min_width=10; int nb_crates; int pos_h; int pos_w; int i_top_left; int j_top_left; int i_top_right; int j_top_right; int i_bottom_left; int j_bottom_left; int i_bottom_right; int j_bottom_right; virtual void print_board(ostream& o=cout) const; virtual void init(); virtual void set_walls(); virtual void setExternalWalls(); virtual void setInternalWalls(); virtual void set_target_crates(); virtual bool free_zone(int h_c, int l_c) const; virtual bool outsideOfWalls(int h_c, int l_c) const; virtual void move(Direction s); virtual void set_pers(); virtual bool is_over() const; virtual bool is_stuck() const; </pre> |

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| class Printable //classe abstraite |
| public: friend ostream& operator<<(ostream& out, const Printable& object); private: virtual void print(ostream& out) const = 0 ; |

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| class Square_2048 : public Printable | template<class C> class Square_Taquin : public Printable |
| public: static const Square_2048 empty; static Square_2048 random(vector<long long>, vector<Action_2048>) const; Square_2048(Square_2048_action action = none, long long value =0); bool operator==(const Square_2048& sq) const; bool operator!=(const Square_2048& sq) const; bool dest_possible(const Square_2048& sq) const; bool mult_possible(const Square_2048& sq) const; bool is_opposite(const Square_2048& sq) const; bool same_action(const Square_2048& sq) const; bool same_value(const Square_2048& sq) const; Square_2048& operator=(const Square_2048& sq) const; void set_value(unsigned long long value); unsigned long long get_value() const; void swap(Square_2048& sq); bool is_empty() const; private: Action_2048 action; long long value; virtual void print(ostream& out) const; | public: static const Square_Taquin<C> empty; Square_Taquin(unsigned int l=0); Square_Taquin(const Square_Taquin<C>& sq); bool operator==(const Square_Taquin<C>& sq) const; bool operator!=(const Square_Taquin<C>& sq) const; bool operator<(const Square_Taquin<C>& sq) const; bool operator<=(const Square_Taquin<C>& sq) const; bool operator>(const Square_Taquin<C>& sq) const; bool operator>=(const Square_Taquin<C>& sq) const; Square_Taquin& operator=(Square_Taquin<C>& sq); Square_Taquin& operator++(); Square_Taquin& operator++(int); Square_Taquin& operator--(); Square_Taquin& operator--(int); private: virtual void print(ostream& o) const; unsigned int value; |