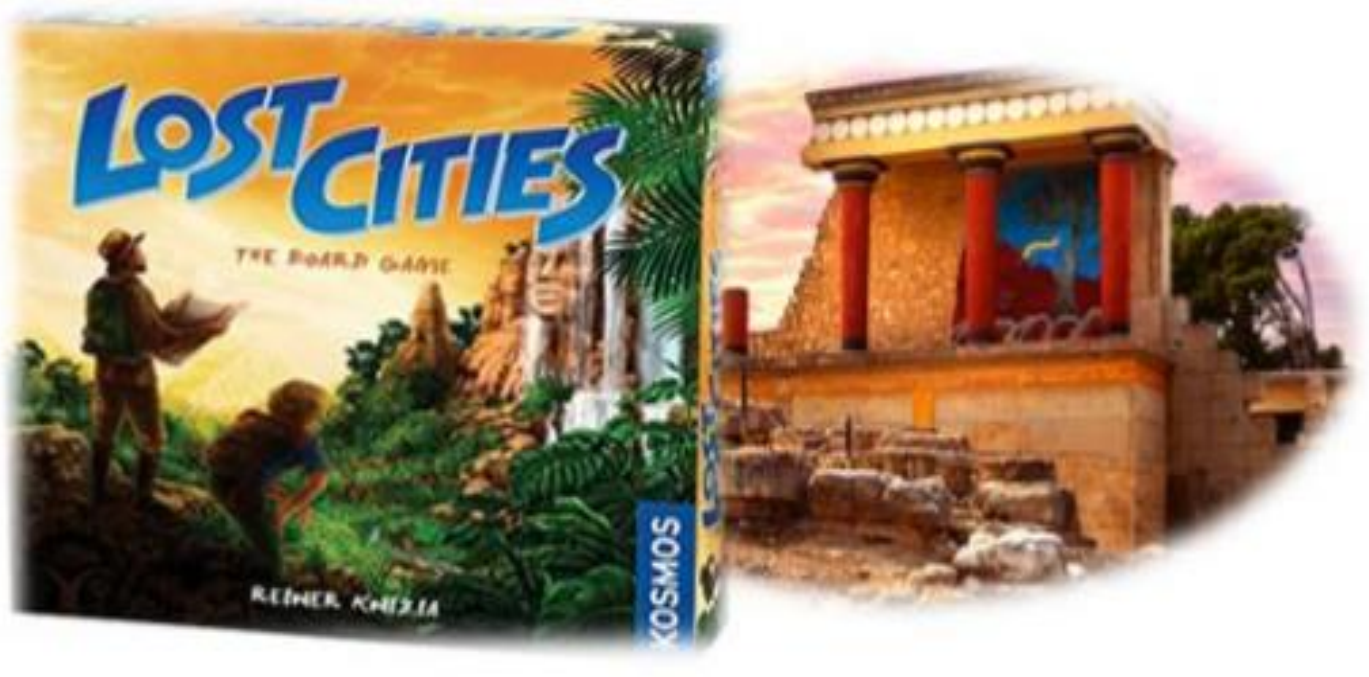
ΑΝΑΖΗΤΩΝΤΑΣ ΤΑ ΧΑΜΕΝΑ ΜΙΝΩΙΚΑ ΑΝΑΚΤΟΡΑ

Σαμαριτάκη Γεωργία ΑΜ3840

Project| Hy252 -Αντικειμενοστραφής Προγραμματισμός|
Δεκέμβριος 2017



Σχεδιασμός

Η υλοποίηση της εργασίας θα βασιστεί πάνω στο μοντέλο MVC (Model View Controller).
Έτσι , σκοπός μας είναι ο Controller να είναι ο συνδετικός κρίκος των Model και view. Οπότε στη συνέχεια της αναφοράς μας θα αναλύσουμε τα κομμάτια του Model και Controller που είναι σημαντικά για αυτή τη φάση και τέλος θα αναφερθούμε και λίγο στο view.

Contents

Model Package

Enum Palace

Αποτελείται από τα 4 μινωικά ανάκτορα του παιχνιδιού

Knossos,Malia,Phaistos,Zakros enumeration values

και χρησιμοποιείται σχεδόν από όλες τις υπόλοιπες κολάσεις.

Methods:

public String to String(); //Overridden method to String

returns the String name of the Palace

Abstract Card Class and subclasses

Attributes:

- Palace palace; //common characteristic of all cards - The palace they belong to
- Private String image;

Methods:

public abstract boolean matchCard(Card c);	Observer Check if the card c can be played over this card
public Palace getPalace();	Accessor Returns the palace this card belongs in
public boolean isSpecial();	Observer Returns true for special cards
public abstract String to String();	Accessor(overridden) Returns the name of the card
Setimage(String image) – Getimage()	Methods for graphics

NumberedCard(extends Card)

Cards with numeric value 1-10 20 for each palace

Attributes:

- private final int value; //The value of the numbered card

Methods:

public int getValue();	Accessor Returns the value of the card
public boolean matchCard(Card c);	Observer Returns true if the card c equal or more of the last card played or
public boolean isSpecial()	Overridden method Returns false always
public String toString()	Returns String “NumberedCard of value” with value of card

Abstract Class SpecialCard(extends Card)

SpecialCard consists of its two subclasses Ariadne and Minotaur

Methods:

public boolean isSpecial()	Observer Returns true overriding super
public boolean isMinotaur()	Observer Returns false unless overridden
public boolean isAriadne()	Observer Returns false unless overridden

❖ Minotaur(extends SpecialCard)

Methods:

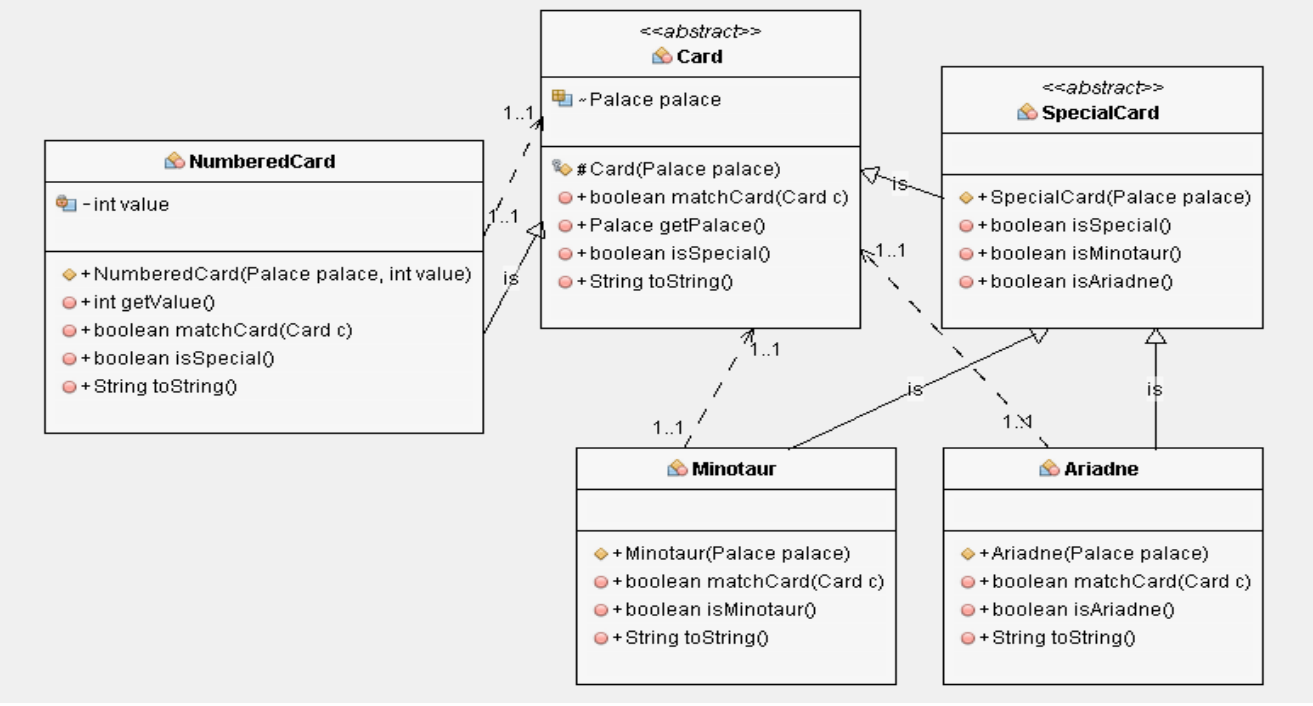
public boolean matchCard(Card c)	Observer Checks if Card c can be played over minotaur
public boolean isMinotaur()	Observer Returns true
public String toString()	Accessor Returns "Minotaur Card" with card's palace

❖ Ariadne(extends SpecialCard)

Methods:

public boolean matchCard(Card c)	Observer Returns true because Ariadne can be played over all the cards
public boolean isAriadne ()	Observer Returns true
public String toString ()	Accessor Returns "Ariadne Card" with card's palace

CardUML



Interface Finding

Acts as a connection between subclasses Fresco,RareFinding,SnakeGoddess

Methods: public boolean isStatue();

Methods for encapsulation of image and description of each finding

Enum RareFinding(implements Finding)

Consists of the 4 rare findings as Finding(value)

DiskOfFaistos(35), RingOfMinoa(25), JewelOfMalia(25), RhytonOfZakros(25);

Attributes:

- final private int value; //value of the finding
- String image,description;

Methods: All methods inherited plus

public String toString()	Accessor Returns the name of the enum
public int getValue()	Accessor Returns the value fo the rare finding
public boolean isStatue()	Observer Returns false

Enum Fresco(implements Finding)

Consists of the 6 frescos according to the strg image given

Fresco1(20), fresco2(20), fresco3(15), fresco4(20), fresco5(15), fresco6(15);

Attributes:

- final private int value; //value of the finding
- String image,description;

Methods: All methods inherited plus

public String toString()	Accessor Returns the name of the enum
public int getValue()	Accessor Returns the value of the rare finding
public boolean isStatue()	Observer Returns false

Class SnakeGoddess

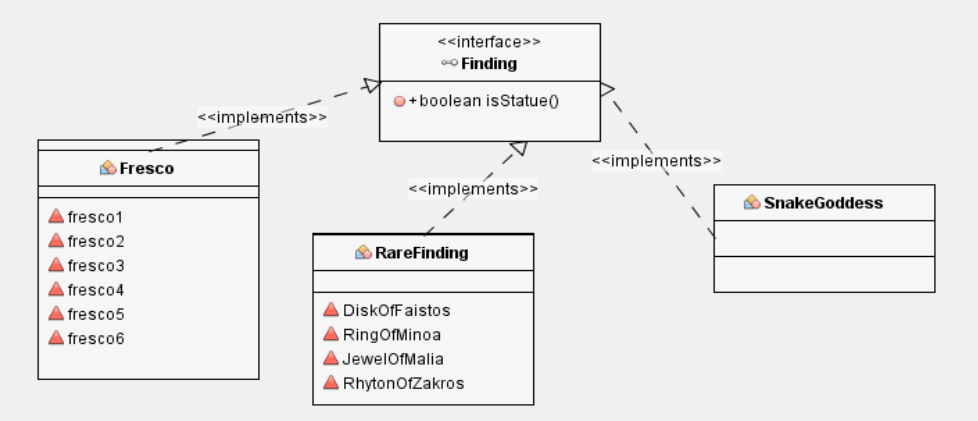
Attributes:

- String image,description;

Method: All Methods inherited plus

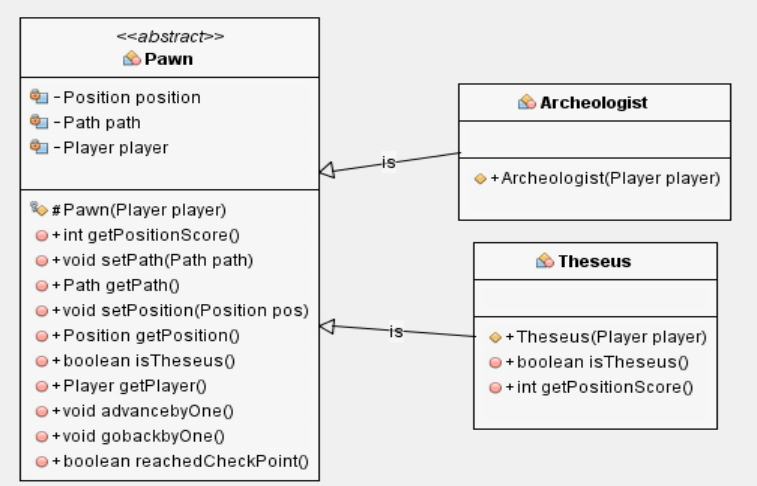
Public boolean isStatue() // Observer Returns true

FindingUML



Abstract Class Pawn

PawnUML



Attributes:

- private Position position;
  //the position the pawn is on
- private Path path;
  //the path the pawn is on
- private final Player player;
  //the owner of the piece

Methods:

public int getPositionScore()	Accessor Returns the points of the position the pawn is on
public void setPath(Path path)	Transformer Sets the path the pawn is on to path
public Path getPath()	Accessor Returns the path the pawn is on
public void setPosition(Position pos)	Transformer Sets the pawns position to pos
public Position getPosition()	Accessor Returns the position of the pawn
public boolean isTheseus()	Observer True if the pawn is an instance of theseus
public Player getPlayer()	Accessor Returns the owner of the pawn
public void advancebyOne()	Transformer Advances pawn by one in the path providing that its not in the last place
public void gobackbyOne()	Transformer Returns pawn one place back providing its not in the last place
public boolean reachedCheckPoint()	Observer Returns true if the pawn has passed position 7 of the path providing it has begun a path

Class Theseus(extends Pawn)

Methods:

public boolean isTheseus()	Observer Returns always true
public int getPositionScore()	Accessor Returns the position score doubled (theseus earns double the value of the position)

Class Archeologist(extends Pawn)

Abstract class Position

Attributes:

- ❖ private final int points;
- ❖ private final int posnumber; //position number in path
- ❖ private final Path path;

Methods:

public int getPoints()	Accessor Returns the points specified in this position Using posnumber(in path)
public Path getPath()	Accessor Returns Path the path the position belongs to
public abstract void availableMoves()	Observer Informs about the available moves

- **Class FindingPosition**

Attributes:

- Finding finding; // the finding buried in this position

Methods:

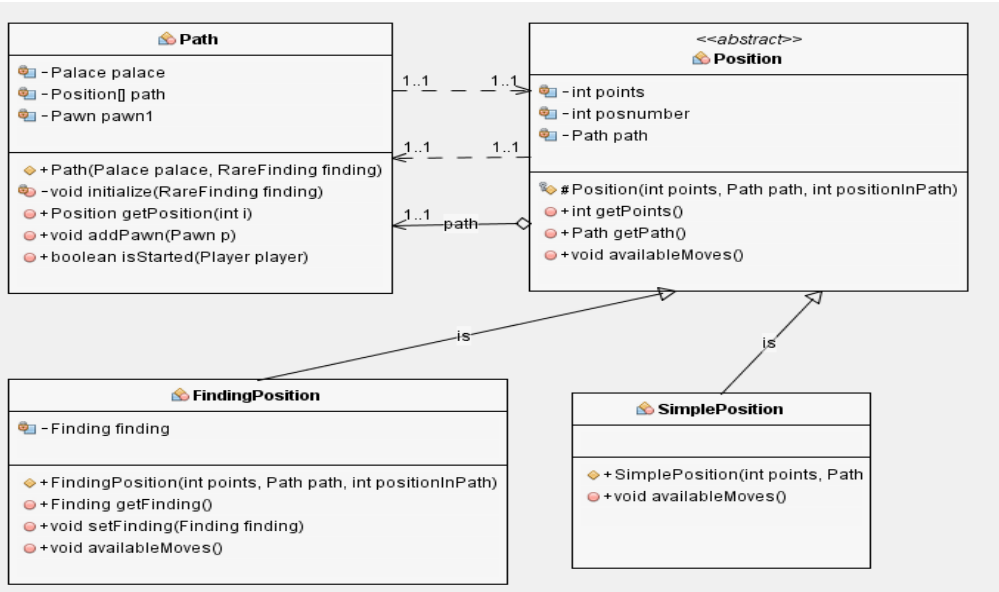
public Finding getFinding()	Accessor Returns finding in the current position
public void setFinding(Finding finding)	Transformer Puts the finding in this position
public void availableMoves()	Accessor Informs about the available moves of the pawn in this position

- **Class SimplePosition**

Methods: public void availableMoves()

Observer there are no available moves in this position

UMLPosition+Path



Class Path

Attributes:

- private final Palace palace;
- private final Position []path = new Position[9];
- private ArrayList<Pawn> pawns;

Methods:

private void initialize(RareFinding finding)	Transformer Sets position 2,4,6,8,9 to special and rest to simple Adds rare finding randomly to one of FindingPositions
public Position getPosition(int i)	Accessor Returns the i th position of the path
public void addPawn(Pawn p)	Transformer Adds pawn to path
public boolean isStarted(Player player)	Observer Returns true if the player has placed a pawn on this path false

Class Deck

Attributes:

- private final ArrayList<Card> deck;

Methods:

private void initialize()	Transformer Initializes all cards of deck
public ArrayList getDeck()	Accessor Returns the array list with the deck
public void shuffleDeck()	Transformer Shuffles card of deck
public Card drawCard()	Accessor && Transformer Draws card from deck removes it and returns it
public boolean isEmpty()	Observer Returns true if there are no more available cards
public int availableCards()	Accessor Returns the number of available cards in deck

Class Player

Attributes:

- private final Card hand[];
- private final NumberedCardT LastPlayed[];
- private ArrayList<Finding> Syllogi;
- private ArrayList<Finding> Fresco;
- private final Pawn pawns[];
- private int Score;
- private int NumOfStatues;

Methods:

public Card[] getCards()	Accessor Returns a new array with the available cards in deck
public void playCard(Card c)	Transformer Precondition: Card can be played over the previous card in path and card has to be contained in players hand Postcondition: Sets the card the play
public void playPawn(Pawn p, Path path)	Transformer Precondition: Player has available pawns Postcondition: Plays pawn on specified path && adds pawn to path
public void discardCard(Card c)	Transformer Removes card c from hand and returns it to be added to discard pile
public Card getLastCard(Palace palace)	Accessor Returns the last card played on each palace
public void AddCard(Card C)	Transformer Precondition: Player does not have 8 card on hand Postcondition: Adds card c to palyers hand
private void AddStatue()	Transformer Increases number of statues by one
private boolean hasPhotographed(Fresco fresco)	Observer Checks if the fresco is in the frescos of the player, if it is returns true
private void photographFresco(Fresco fresco)	Transformer Precondition: The fresco has not been photographed Postcondition: Adds fresco to fresco ArrayList
private void addRareFinding(RareFinding finding)	Transformer Takes the rare finding from its posiition and adds it to Syllogi
public void takeFinding(FindingPosition pos)	Transformer Precondition: It's the players turn

	Postcondition : Checks the type of the finding in position and calls the relevant private method above
private void updateScore()	Transformer Calculates the sum of pawn's positions rare findings values and frescos values and updates Scores
public int getScore()	Accessor Returns score
public Pawn[] availablePawns()	Accessor Returns a pawn array of the pawns that have yet to be played
public Path[] unplayedPaths()	Accessor Returns A path array of the path that the player has not put a pawn on

Class Board

Attributes:

- private final Path paths[] = new Path[4];
- private ArrayList<Card> DiscardPile;

Methods:

private void distributeFindings()	Transformer Creates all frescos and statues and distributes them randomly
public int checkPointsReached()	Accessor Calculates from the player's pawns how many checkpoints have been reached
public void discardCard(Card c)	Transformer Moves card c to discardpile

Model Controller

Class Controller

Attributes:

- private final Player player1, player2;
- private final Board board;
- private Deck deck;
- View view;
- private boolean turn;

Methods:

private void init_player_cards()	Transformer Draws 8 cards for each player and adds them to his hands
public Player getTurn()	Observer Returns the player who plays
public void endTurn()	Transformer Switches turn
public boolean isFinished()	Observer Returns True if 4 checkpoints have been reached or the deck has been emptied
public Player getWinner()	Accessor PreCondition: The game has ended Postcondition Returns the winner comparing the two scores

Listeners:

private class Player1Listener implements ActionListener	Actions for player 1 Left Click on card plays card Right Click Discards card
private class Player2Listener implements ActionListener	Actions for player2 As above
private class DeckListener implements ActionListener	Left Click draws card
private class FrescoListener implements ActionListener	Fresco button shoes frescos of each player
private class FindingInfoListener implements ActionListener	Hovering over rare findings shows description

Model View

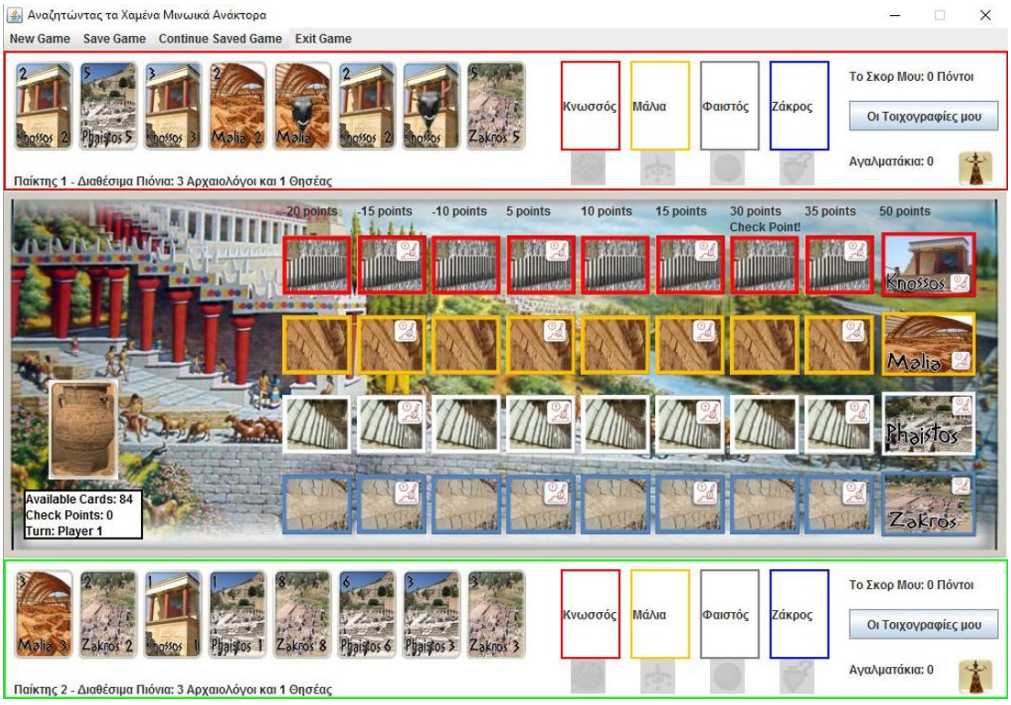
Class View extends JFrame

Attributes:

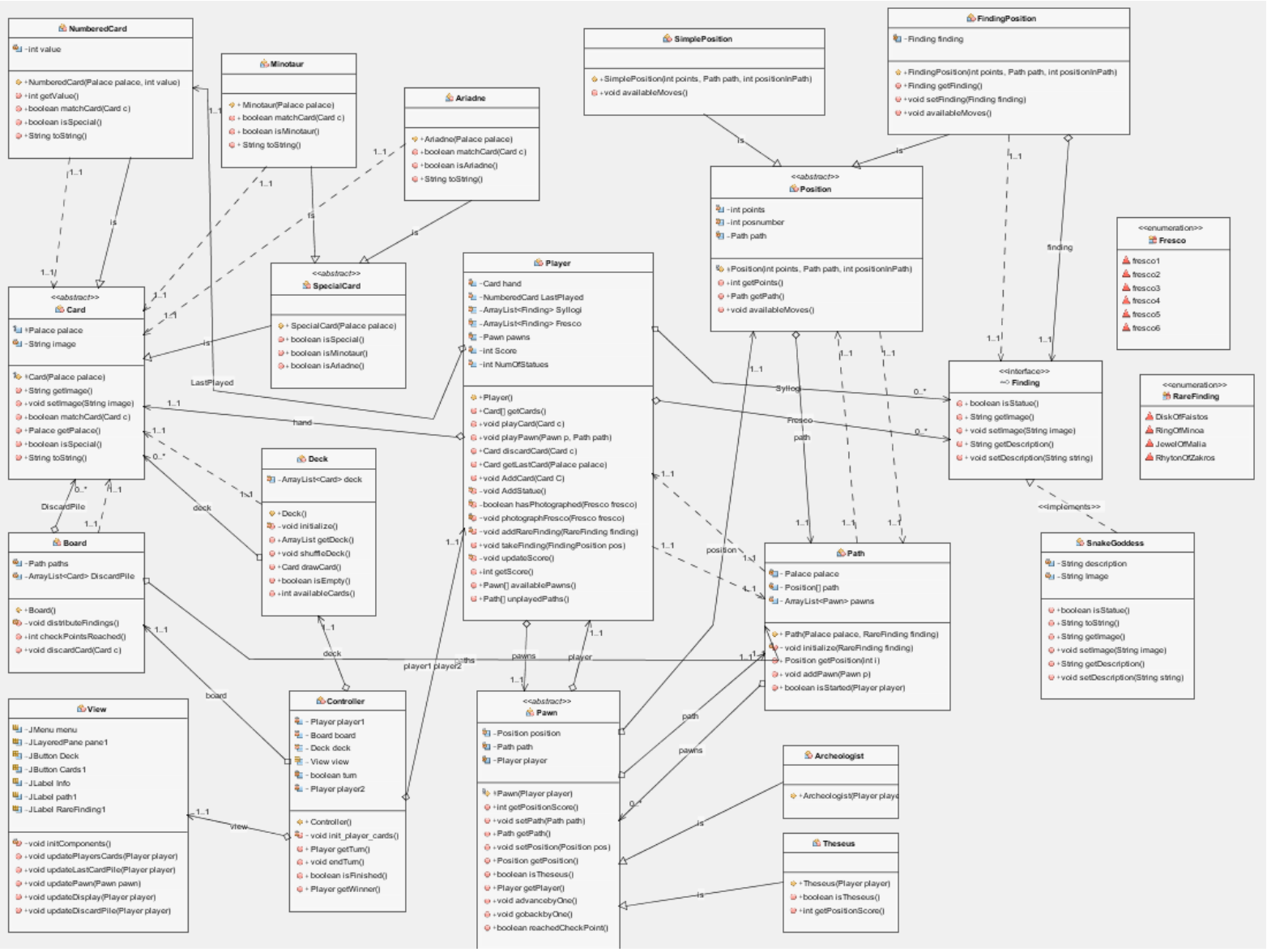
- JMenu menu;
- JLayeredPane pane1, pane2, mainpane;
- JButton Deck, Frescos1, Frescos2;
- JButton Cards1[], Cards2[];
- JLabel Info, pawns1[], pawns2[], availablePawns1[], availablePawns2[], Score1, Score2, Statues1, Statues2;
- JLabel path1[], path2[], path3[], path4[];
- JLabel RareFinding1[], RareFinding2[];

Methods:

private void initComponents()	Transformer Initializes buttons and labels
public void updatePlayersCard(Player player)	Transformer Updates the cards of player in display
public void updateLastCardPile(Player player)	Transformer Updates Last card of player
public void updatePawn(Pawn pawn)	Transformer Updates the position of pawn (removes previous occurrence and repaints)
public void updateDisplay(Player player)	Transformer Updates labels of player
public void updateDiscardPile(Player player)	Transformer Updates discard pile in display



Project UML



Τέλος