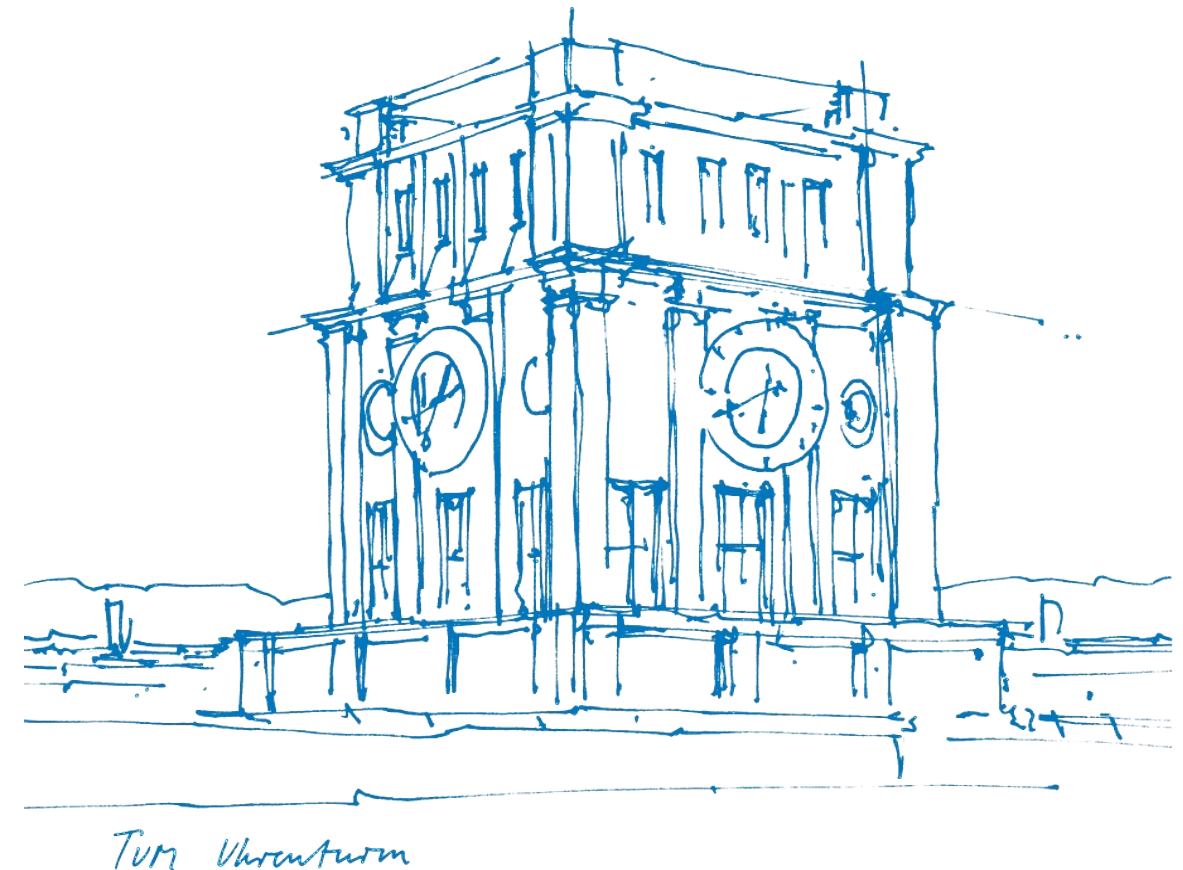# XML Praktikum

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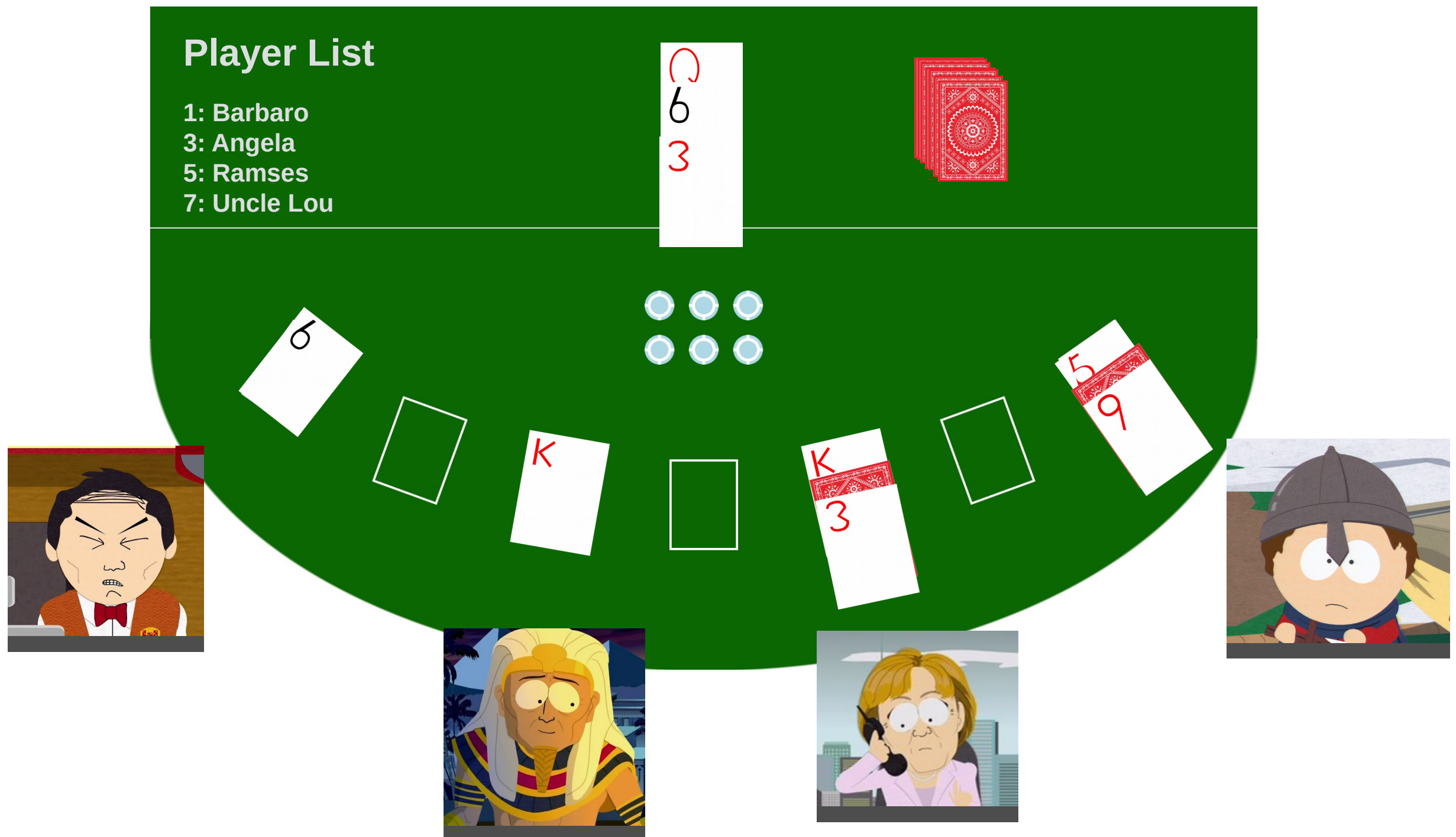
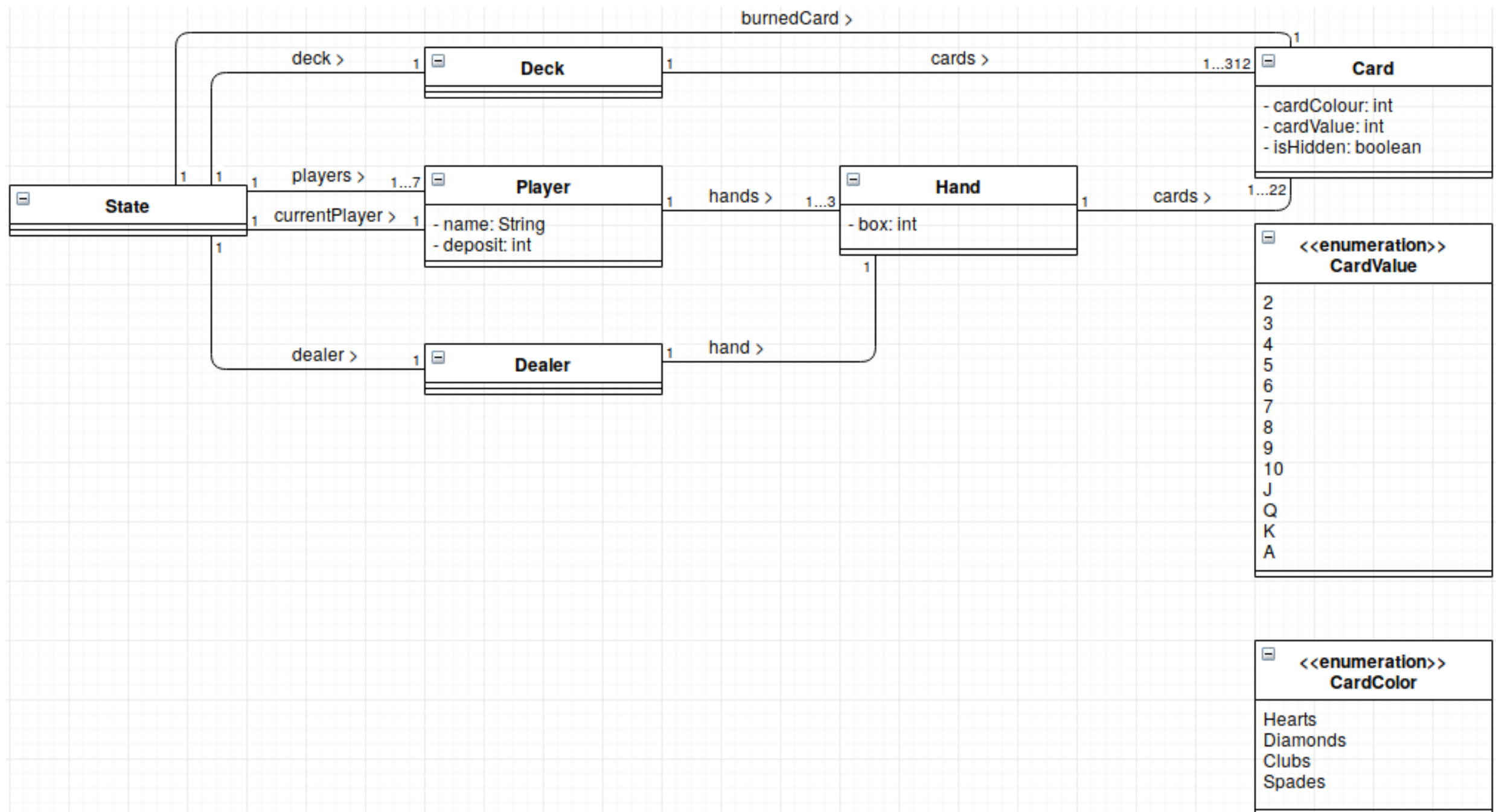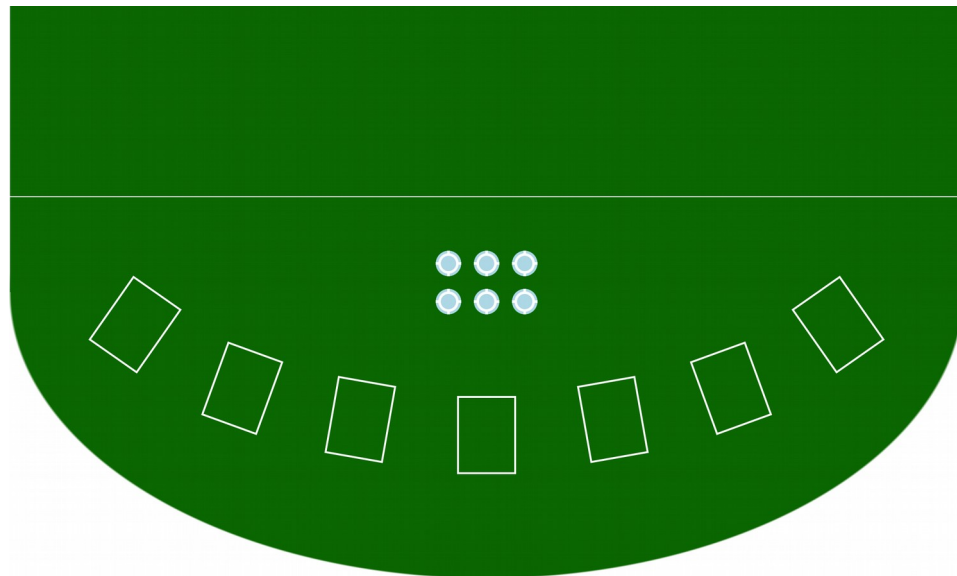Lehrstuhl für Angewandte Informatik/ Kooperative Systeme
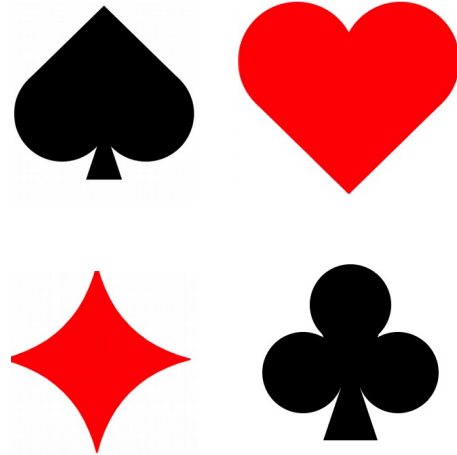
München, 20. Mai 2019

TUM Uhrenturm

UML class diagram

SVG - cards deck and the gaming table

Snippet from SVG

- **Jede Karte besteht aus 3 Komponenten: Kartenhintergrund, Kartenfarbe und Kartenzahl, die durch "xlink:href" referenziert werden.**

```xml
<svg width="160" height="220" version="1.1" xmlns="http://www.w3.org/2000/svg"
    xmlns:xlink="http://www.w3.org/1999/xlink" viewBox="0 0 160 220">
    <g>
        <image x="0" y="0" preserveAspectRatio="xMinYMin slice"
                width="160" height="220" xlink:href="./cardBackground.svg"/>
    </g>
    <g>
        <image x="60" y="90" preserveAspectRatio="xMinYMin slice"
                width="40" height="40" xlink:href="./Diamonds.svg"/>
    </g>
    <g>
        <image x="10" y="15" preserveAspectRatio="xMinYMin slice"
                width="40" height="40" xlink:href="./RedA.svg"/>
    </g>
    <g transform="translate(30,35) rotate(180) translate(-125, -180)" >
        <image  x="10" y="15" width="40" height="40"
                preserveAspectRatio="xMinYMin slice"  xlink:href="./RedA.svg"/>
    </g>
</svg>
```
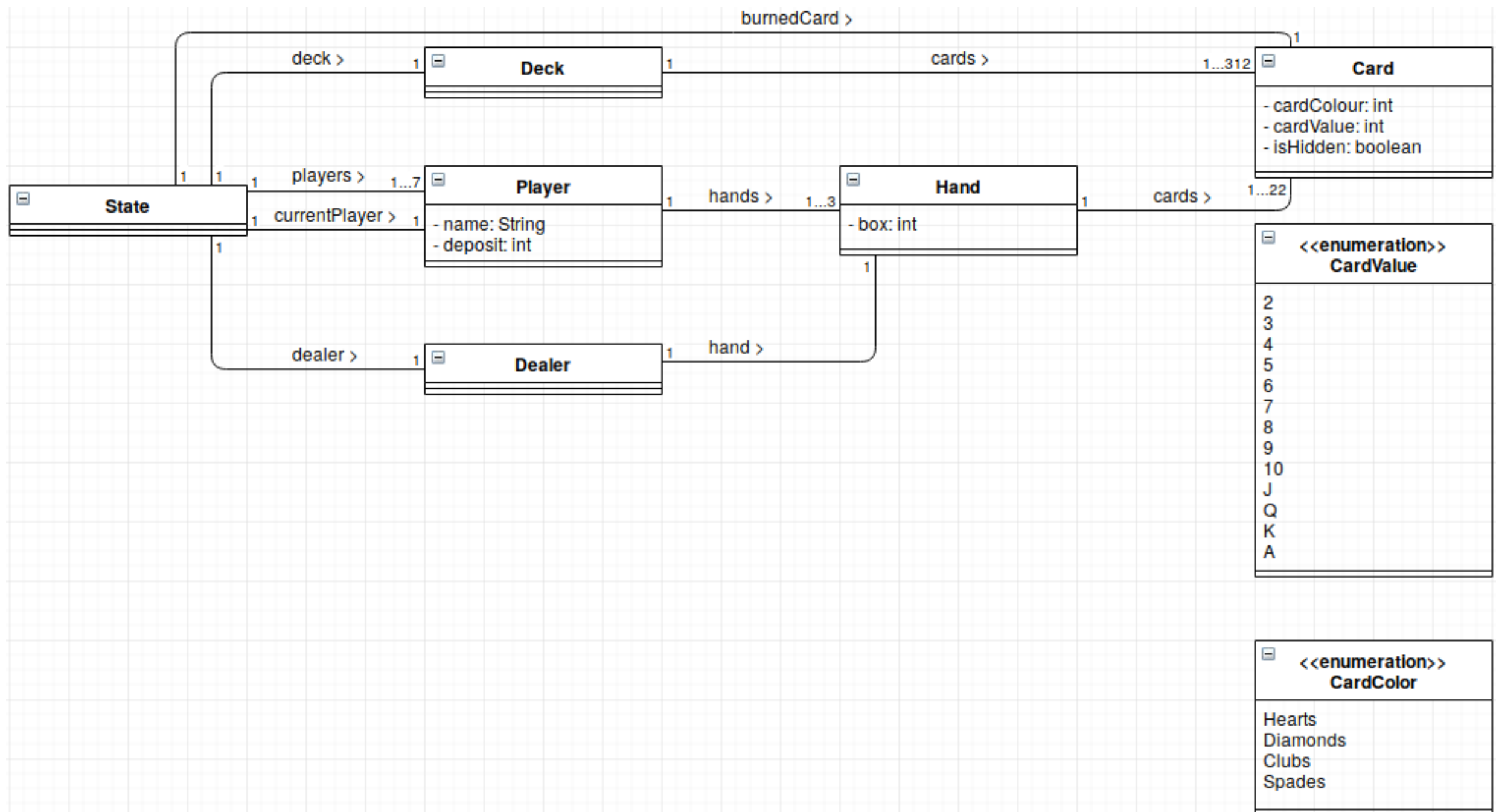
Snippet from SVG

■ **Solche Komponenten werden durch SVG-Elemente gemalt. Dabei ist das Element "path" sehr leicht zu benutzen.**

```xml
<?xml version="1.0" standalone="no"?>
<!DOCTYPE svg PUBLIC "-//W3C//DTD SVG 1.1//EN"
        "http://www.w3.org/Graphics/SVG/1.1/DTD/svg11.dtd">
<svg width="160" height="220" version="1.1" xmlns="http://www.w3.org/2000/svg">
    <title>cardBackground</title>
    <rect x="2.5" y="2.5" width="155" height="212.5" fill="grey"/>
    <rect x="5" y="5" width="150" height="207.5" fill="white"/>
</svg>
```

```xml
<svg width="150" height="150" version="1.1" xmlns="http://www.w3.org/2000/svg">
    <title>BlackNumber5</title>
    <path d="M65,25 L53,65 L59,66 L72,25"
          fill="black"/>
    <rect x="65" y="30" width="30" height="7" fill="black"/>
    <path fill="black" d="M53,65 L51,70 Q85,65 95,85 Q105,120
    65,110 Q40,110 50,80 L40,110 Q40,120 60,125 Q105,125 105,95 Q105,65 50,65 Z"/>
</svg>
```

```xml
<svg width="150" height="150" version="1.1" xmlns="http://www.w3.org/2000/svg"
    <title>diamond</title>
    <path d="M75,0 Q90,60 150,75 Q90,90 75,150 Q60,90 0,75 Q60,60 75,0 Z"
          fill="red" stroke="red"/>
</svg>
```

UML class diagram

UML class diagram -> DTD

- **der Spieltisch besteht aus einem Kartendeck, einem Dealer und 1 bis 7 Spielern**

- **das Kartendeck besteht aus 6 * 52 = 312 Karten, mit 2-10, J, K, Q, A in roter und schwarzer Farbe, die auch verdeckt liegen können**

- **jeder Spieler hat: ID-Namen, Einsatz und Summe**

```
<!-- DTD created at Wed May 15 22:07:51 CEST 2019 with EditiX

<!ELEMENT state (deck,card,dealer,player+)>
<!ATTLIST state
  currentPlayer IDREF #REQUIRED>

<!ELEMENT deck (card*)>

<!ELEMENT player (hand+)>
<!ATTLIST player
  id ID #REQUIRED
  name CDATA #REQUIRED
  deposit CDATA #REQUIRED>

<!ELEMENT dealer (card*)>

<!ELEMENT hand (card*)>
<!ATTLIST hand
  box CDATA #REQUIRED>

<!ELEMENT card EMPTY>
<!ATTLIST card
  cardColour (Hearts|Diamonds|Clubs|Spades) #REQUIRED
  cardValue (2|3|4|5|6|7|8|9|10|J|Q|K|A) #REQUIRED
  isHidden (true|false) #REQUIRED>
```

Snippet from XML

```xml
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="blackjack.xsl"?>

<!DOCTYPE state SYSTEM "blackjack.dtd">

<state currentPlayer="PER-1">
    <deck>
        <card cardColour="Clubs" cardValue="2" isHidden="true"/>
        <card cardColour="Clubs" cardValue="3" isHidden="true"/>
    </deck>
    <card cardColour="Spades" cardValue="Q" isHidden="true"/>
    <dealer>
        <card cardColour="Clubs" cardValue="A" isHidden="true"/>
        <card cardColour="Spades" cardValue="A" isHidden="false"/>
    </dealer>
    <player id="PER-1" name="Player 1" deposit="200">
        <hand box="20">
            <card cardColour="Spades" cardValue="J" isHidden="false"/>
            <card cardColour="Spades" cardValue="10" isHidden="false"/>
            <card cardColour="Spades" cardValue="7" isHidden="false"/>
        </hand>
        <hand box="10">
            <card cardColour="Spades" cardValue="J" isHidden="false"/>
            <card cardColour="Spades" cardValue="Q" isHidden="false"/>
        </hand>
    </player>
    <player id="PER-2" name="Player 2" deposit="200">
        <hand box="15">
            <card cardColour="Diamonds" cardValue="7" isHidden="false"/>
            <card cardColour="Diamonds" cardValue="8" isHidden="false"/>
        </hand>
    </player>
</state>
```

Prof. Dr. Anne Brüggemann-Klein | XML-Technologie

Snippet from XSL

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
xmlns:xs="http://www.w3.org/2001/XMLSchema" exclude-result-prefixes="xs" version="2.0">
    <xsl:template match="state">                              [11 lines]
    <xsl:template match="deck">                               [17 lines]
    <xsl:template match="dealer">                              [6 lines]
    <xsl:template match="player">                             [19 lines]
    <xsl:template name="Card">                                [24 lines]
</xsl:stylesheet>


    <xsl:template match="state">
        <html style="margin: 0px; padding: 0px; height:100%;">
            <head>
                <title>Southpark Blackjack</title>
            </head>
            <body style="margin: 0px; padding: 0px; height:100%;">
                <div style="width: 80%; height: 100%; margin: auto; background-image:
url(./svgDateis/playTable.svg); background-size: 100% 100%;">
                    <xsl:apply-templates />
                </div>
            </body>
        </html>
    </xsl:template>
```

Snippet from XSL

```xsl
<xsl:template match="dealer">
    <div style="width: 78%; height: 30%; margin-left: 2%; float: left;">
        <div style="width: 96%; margin: 2%;">
            <xsl:call-template name="Card" />
        </div>
    </div>
</xsl:template>


<xsl:template match="player">
    <div style="width: 12%; height: 70%; margin-left: 2%; float: left;">
        <div style="width: 100%; height: 5%;">                              [2 lines]
        <div style="width: 100%; height: 5%;">                              [2 lines]
        <xsl:for-each select="hand">
            <div style="width: 100%; margin-bottom: 3%;">
                <div style="width: 100%; margin-top: 5%; text-align: center;"> [2 lines]
                <div style="width: 100%;">
                    <xsl:call-template name="Card" />
                </div>
            </div>
        </xsl:for-each>
    </div>
</xsl:template>
```

Snippet from XSL

```xml
<xsl:template name="Card">
  <xsl:for-each select="card[@isHidden='true']">
    <svg width="64" height="88" version="1.1" xmlns="http://www.w3.org/2000/svg"
         xmlns:xlink="http://www.w3.org/1999/xlink">
      <image x="0" y="0" width="64" height="88" xlink:href="./svgDateis/Backside.png"/>
    </svg>
  </xsl:for-each>
  <xsl:for-each select="card[@isHidden='false']">
    <svg width="64" height="88" viewbox="0 0 64 88" version="1.1" xmlns="http://www.w3.org/2000/svg"
         xmlns:xlink="http://www.w3.org/1999/xlink">
      <image x="0" y="0" width="64" height="88" xlink:href="./svgDateis/cardBackground.svg"/>
      <image x="24" y="36" width="16" height="16" xlink:href="" >                    [2 lines]
      <image x="4" y="6" width="16" height="16" xlink:href="" >                      [2 lines]
      <g transform="translate(12,14) rotate(180) translate(-50, -72)" >             [4 lines]
    </svg>
  </xsl:for-each>
</xsl:template>
```

Thank you all for visiting our casino!