

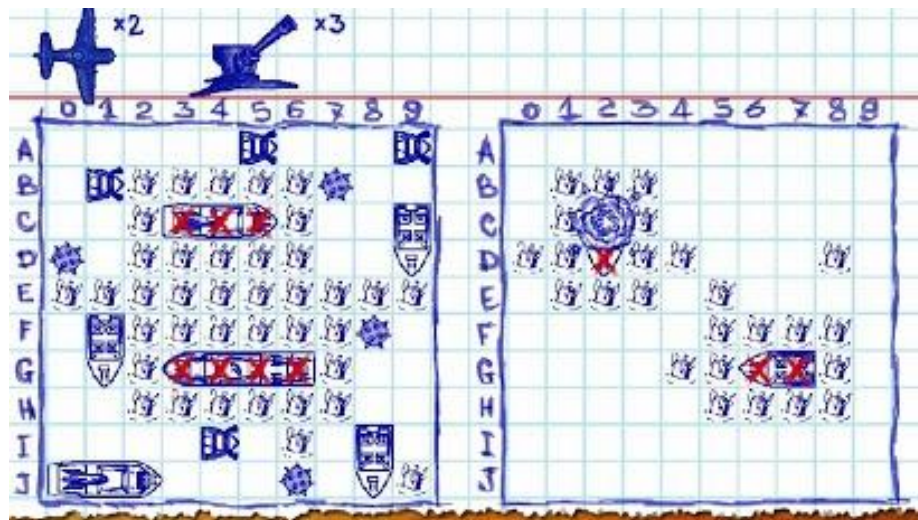
SOFTWAREPROJEKT BATTLESHIP APP

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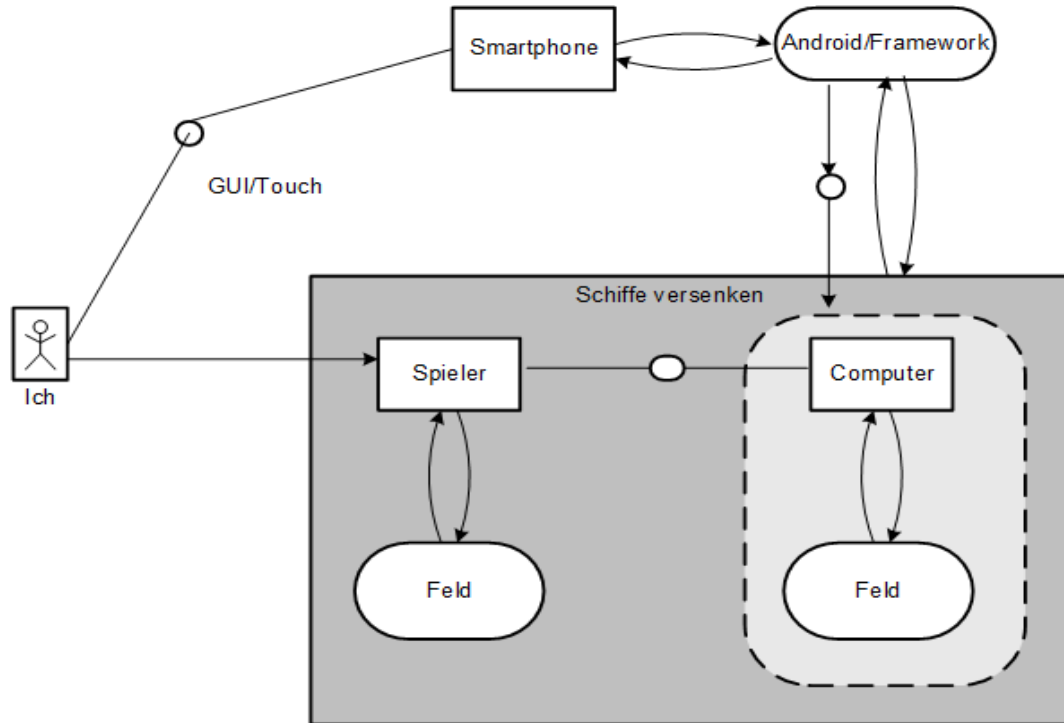
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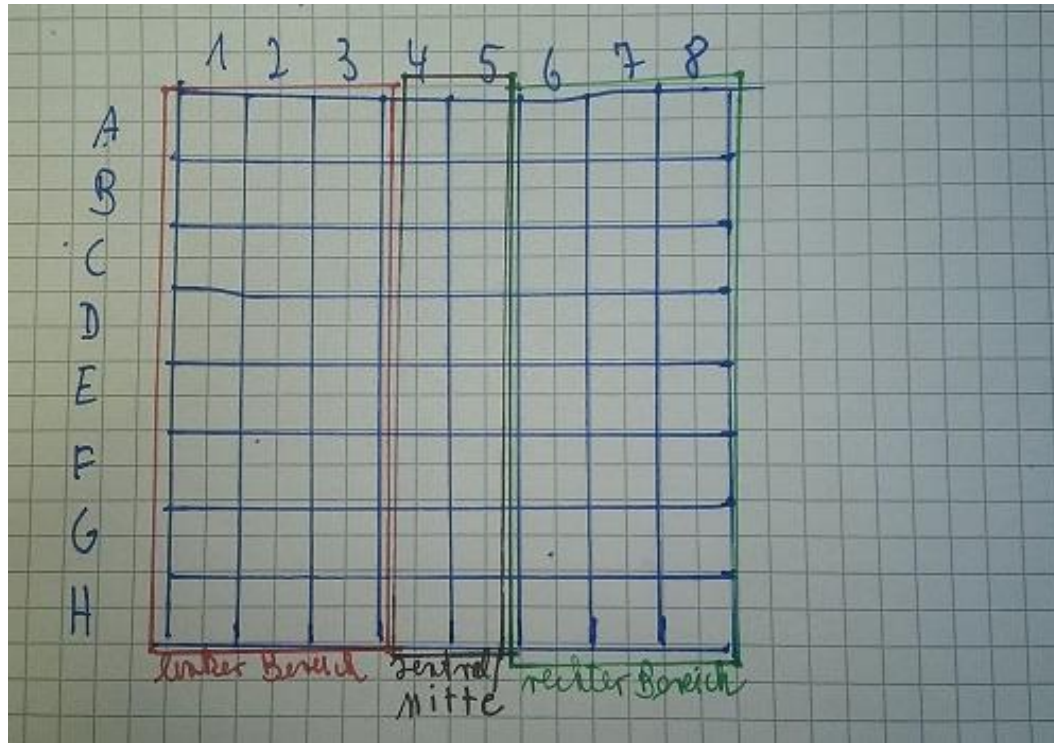
Idee



FMC-Systemmodell - Battleship



Grammatik/DSL-Metamodell



Der Computer schiesst zufaellig
linkslastig.
Der Computer schiesst zentral.
Der Computer schiesst zentral.
Der Computer schiesst zufaellig.
Der Computer schiesst.



Grammatik – Code

```
* Grammar PlayerAIShots
* describes behavior of an AI player in the game Battleship
*/
grammar PlayerAIShots;
//file : row row row row row row row row row row row row row row row row row row row row row row row row row row row row row
file : row row row row row EOF ;
//row : (sentence)* value (sentence)* (LineBreak | EOF) ;
row : START (SPACE RANDOM)? (SPACE direction)? Dot (LineBreak | EOF);
//value: (randomshot|specificshot) ;

//randomshot: 'Zufall' ;
SPACE : ' ' ;
randomshot: RANDOM ;
direction : DIRECTION ;
//specificshot : SPECIFICSHOT ;
//SPECIFICSHOT : [A-G][1-7] ;

//direction : DIRECTION ;
//begin : BEGIN ;

RANDOM : 'zufaellig' ;
DIRECTION : ('linkslastig'|'rechtslastig'|'zentral') ;
START : 'Der Computer schiesst' ;

//sentence : SENTENCE ;
//SENTENCE : ('A'..'Z'|'a'..'z'|'.'|'/'|'') ;

Dot : '.' ;

// line break
LineBreak : '\r'?' \n' | '\r';

WS : [\t\r\n]+ -> skip ; // skip tabs, newlines
```

Verwendete Software



- IntelliJ IDEA Ultimate = Entwicklungsumgebung des Softwareunternehmens JetBrains für Java
- -u. a. Erstellung von Applikationen

Codebeispiel – Java

Startscreen

```
public class MainActivity extends Activity {  
    /**  
     * Called when the activity is first created.  
     */  
  
    private ImageView startImage;  
    private ImageButton startButton;  
  
    @Override  
    public void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.main);  
        startImage = (ImageView) findViewById(R.id.startImage);  
        startButton = (ImageButton) findViewById(R.id.buttonSpielStarten);  
  
        startButton.setOnClickListener(new View.OnClickListener() {  
            @Override  
            public void onClick(View v) {  
                Intent setupPlayerField = new Intent(v.getContext(), SetupPlayerFieldActivity.class);  
                startActivity(setupPlayerField);  
            }  
        });  
    }  
}
```

Schiffe setzen

```
class MyDragListener implements View.OnDragListener {  
  
    protected boolean isCollided;  
    @Override  
    public boolean onDrag(View v, DragEvent event) {  
        int action = event.getAction();  
        String viewTag = (String) v.getTag();  
        float x = event.getX();  
        float y = event.getY();  
        boolean collide;  
  
        switch (action) {  
            case DragEvent.ACTION_DRAG_STARTED:  
                Log.i("ACTION_DRAG_STARTED", "target view is: " + v.getTag());  
                Log.i("ACTION_DRAG_STARTED", "x ist: " + x + ", y: " + y);  
                break;  
            case DragEvent.ACTION_DRAG_ENTERED:  
                Log.d("ACTION_DRAG_ENTERED", "entered: " + v.getTag());  
                Log.i("ACTION_DRAG_STARTED", "x ist: " + x + ", y: " + y);  
                break;  
            case DragEvent.ACTION_DRAG_EXITED:  
                break;  
            case DragEvent.ACTION_DROP:  
                //String viewTag = (String) v.getTag();  
                Log.i("ACTION_DROP", "target view is: " + v.getTag());  
                Log.i("ACTION_DROP", "view v is: " + v);  
                if (v != imagePlayfield) {  
                    if (viewTag.equals("imagePlayfield") == false) {  
                        Log.e("ACTION_DROP", "wrong drop! Dropped into: "+viewTag);  
                    }  
                }  
            }  
        }  
    }  
}
```


Codebeispiel - XML

Schiffe setzen

```
<?xml version="1.0" encoding="utf-8" ?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:id="@+id/layoutSetupActivity"
    android:orientation="vertical"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:weightSum="1"
    android:background="@drawable/background_blue"
    android:layout_gravity="top|center_horizontal" >

    <ImageView
        android:id="@+id/imageSetzeSchiffe"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal|top"
        android:src="@drawable/image_schiffe_setzen"
        android:contentDescription="startscreen"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true">

    </ImageView>
    <ImageView
        android:id="@+id/imagePlayfield"
        android:layout_width="300dp"
```

Bilder der App



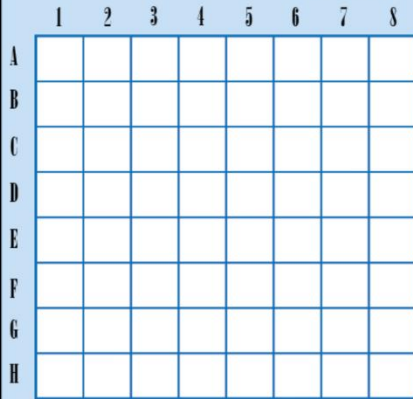
Icon



Spiel starten

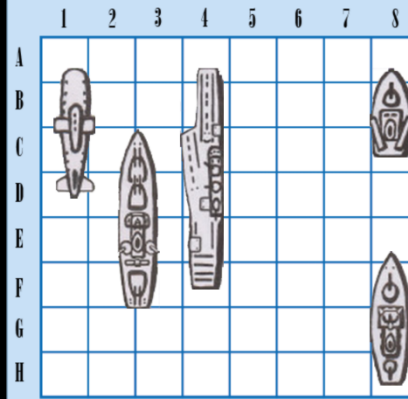
Bilder der App

Schiffe setzen



Spielen

Schiffe setzen



Spielen

Vorführung



Ausblick Dokumentation



- App Entwicklung mit dem Android Framework
- Speziell Drag and Drop
- Historie und Versionsvergleich