



## Übungen zu Praktikum Grundlagen der Programmierung

### Aufgabe 8 Erweiterter Euklid (Lösungsvorschlag)

```
public class Euklid extends MiniJava {
    public static void main(String[] args) {
        int m,n;
        int factor, rest, s, t, u, v;
        m = read();
        n = read(); //berechne extended euklid (m,n), wobei m,n>0

        u = 1;
        v = 0; //m*u + n*v = ggt(m,n);

        t = 1;
        s = 0;

        while (n>0){
            factor=m/n;

            rest=m-factor*n;
            m=n; //m und n werden neu belegt
            n=rest;

            rest=u-factor*s;
            u=s;
            s=rest;

            rest=v-factor*t;
            v=t;
            t=rest;
        }
        write("errechneter_u-Wert:"+u);
        write("errechneter_v-Wert:"+v);
        write("errechneter_ggt:_" +m); //ggt von m,n steckt in m
    }
}
```

**Aufgabe 9 17 und 4 (Lösungsvorschlag)**

```

public class SuV extends BlackJackMiniJava{
    public static void main(String[] args){
        write("Player_one");
        // Store player 1s score in an integer
        int playerone = drawCard();
        do{ // draw cards
            playerone += drawCard();
            write("Player_one:_You_drew_"+playerone);
            // exit when score exceeded or user refuses to play
        } while ( playerone < 22 && readInt("Player_one_continue?(0=no)");

        if (playerone > 21) { // playerscore > 17+4 :-)
            write("Player_one_is_dead:_Player_one_lost!");
            return;
        }

        write("It's_Your_turn,_Player_two!");
        int playertwo = drawCard();
        // computer tries to beat player until he loses
        do{
            playertwo += drawCard();
            write("Player_two:_You_drew_"+playertwo);
        }while((playertwo<22)&&(readInt("Player2_continue?(0=no)")!=0));

        // just for information:
        if (playertwo > 21 || playertwo < playerone) {
            write("Player_one_won!");
        }else{
            write("Player_two_beat_player_one:_Player_two_won");
        }
    }
}

```

**Aufgabe 10 Syntax-Baum (Lösungsvorschlag)**

