http://rise4fun.com/Dafny/DHuV

//Übungsaufgabe 3.1: max

method max(a:array<int>) returns(max:int)

requires a!=null;

ensures (forall j :int :: (j >= 0 && j < a.Length ==> max >= a[j]));

ensures (a.Length > 0)==>(exists j : int :: j>=0 && j < a.Length && max==a[j]);

{

if (a.Length == 0)

{

max := 0;

}

else

{

max:=a[0];

var i:int :=1;

while(i < a.Length)

invariant (i<=a.Length);

invariant (forall j:int :: j>=0 && j<i ==> max >= a[j]);

invariant (exists j:int :: j>=0 && j<i && max==a[j]);

decreases (a.Length-i);

{

if(a[i] > max)

{

max := a[i];

}

i := i + 1;

}

}

}