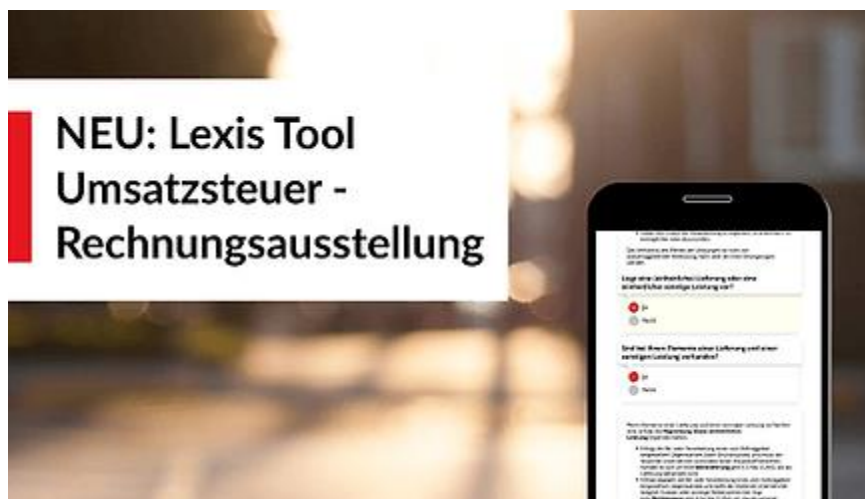


ErbRechner



LexisNexis wished to develop an inheritance calculator which could reliably solve complicated inheritance entitlements under Austrian law.

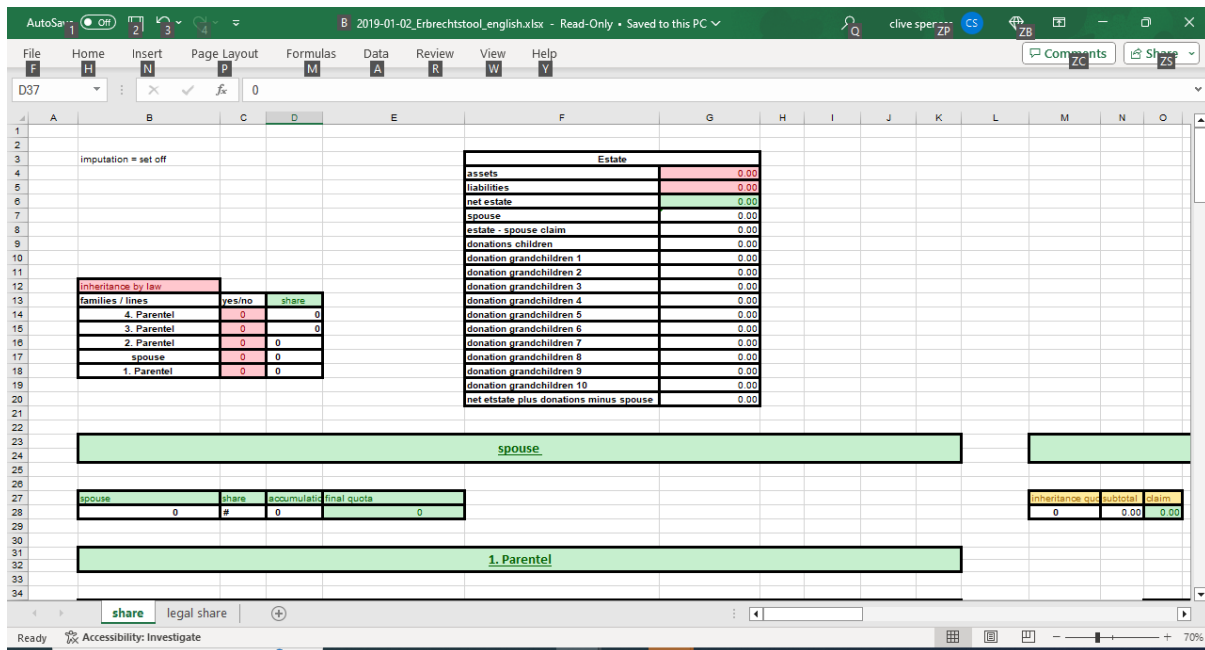
In 2019, LexisNexis Austria approached LPA about developing the back-end rule-based logic for such a tool.

LPA built a prototype in 10 days to prove that their approach was viable and then spent several weeks refining and testing the calculator and extending it to handle some of the more obscure cases. This included the definition of a suitable JSON structure to communicate the data between the front-end UI and the back-end calculator.

LexisNexis commissioned a contractor to develop an attractive front end for the web deployment.

ErbRechner was developed in under 10 weeks and made available on the LexisNexis website for over 4 years.

Dr. Matthias Brand, a leading expert in the logic of inheritance law, provided an Excel spreadsheet which calculated all inherited and compulsory parts due to entitled family members (quotas and amount).



This served as a specification for LPA, along with the book of regulations in German and English.

The calculations were often complicated, as the number of family members entitled to a portion theoretically was very large. It could include the spouse, parents and children as well as any number of siblings, grand-children, great grandchildren, nephews and nieces.

In the case where entitled inheritors had pre-deceased the deceased, then that could trigger another layer or two of exploration and calculation.

In the first step, the inheritance is recorded in the front end and split into assets and liabilities. These can be further defined into subcategories, such as cash, real estate or loans, tax debts, etc.

ErbRechner
by Dr. Matthias Brand

Schritt definieren Sie bitte das gen. der/des Erblasser/in.

2 Im zweiten Schritt wird der Stammbaum des/der Verstorbenen erfasst.

3 Im dritten Schritt werden alle relevante Schenkungen erfasst.

4 Die gesetzlichen Erb- und Pflichtanteile werden berechnet.

1. Parentel 2. Parentel 3. Parentel 4. Parentel

→ Erfassen Sie die Angehörigen des/der Verstorbenen aus der ersten Parentel. [Eingabehilfe](#)

Ehefrau Maria, Tochter Johanna, Enkel, Sohn Lukas verstorben, Enkel, Enkelin Barbara, ... + hinzufügen **weiter**

Maria Stangl
Erblasserin

Franz
Ehemann †

Theresa
Tochter †

Johannes
Sohn

Fabienne
Tochter

Lukas
(Enkel)

Johanna
Enkelin

Emilia
Enkelin

Nachlassvermögen
€ 300.000

weiter

In the second step, the testator's family tree is recorded up to the fourth parentel using an innovative text input. Compared to a classic structure, text entry has the advantage that the family tree can be built much more quickly. The classic structure of attaching nodes using the plus symbols was also supported.

ErbRechner
by Dr. Matthias Brand

Schritt werden alle relevanten erfasst.

4 Die gesetzlichen Erb- und Pflichtanteile werden berechnet.

Erbteile **Pflichtteile** **Stammbaum** **Tabelle**

Der angezeigte Geldbetrag begründet idR keinen direkten Geldanspruch, sondern konkretisiert nur die Höhe des Berechtigtenanspruches am Nachlassvermögen.

Family tree diagram showing inheritance shares:

- Maria Stangl, Erblasserin (0)
- Franz Ehemann, t (0)
- Theresa Tochter, t (0)
- Johannes Sohn, 1/3 (€108.333)
- Fabienne Tochter, 1/3 (€83.333)
- Lukas (Enkel), 0
- Johanna Enkelin, 1/6 (€54.176)
- Emilia Enkelin, 1/6 (€54.176)

Summary boxes:

- Nachlassvermögen: € 300.000
- Stammbaum: Maria Stangl
- Schenkungen: € 25.000

In the third step, gifts to the heirs are recorded again in the front end as these can potentially affect entitlements.

In the fourth step all the recorded data is passed to the backend calculations developed by LPA. The LPA Prolog based calculator was packaged up as a REST service which could be deployed both as a hosted service or installed on-prem inside the firewall.

A JSON representation was defined which could represent all the family members and this was used to connect the two.

To help develop and test the JSON, a test page was established with numerous test cases:

InTESTate

greatgrandchildren

Submit Table Output

Prolog JSON

Input

```

    }
  },
  "people": [
    {
      "p1_person_partner": {
        "incapacity": 0,
        "parent": "none",
        "otherparent": "none",
        "donations": 0,
        "relation_to_deceased": "spouse"
      }
    },
    {
      "p1_person_0": {
        "incapacity": 2,
        "parent": "person_main",
        "otherparent": "none",
        "donations": 0,

```

Input People

Person Id	Parent	Other Parent	Relation	Incapacity	Donations Et
p1_person_partner	none	none	spouse	0	0
p1_person_0	person_main	none	child	2	0
p1_person_0_0	p1_person_0	none	grandchild	2	0
p1_person_0_0_0	p1_person_0_0	none	greatgrandchild	1	0
p1_person_0_0_1	p1_person_0_0	none	greatgrandchild	1	0
p1_person_0_0_2	p1_person_0_0	none	greatgrandchild	1	0
p1_person_1	person_main	none	child	0	20000
p1_person_1_0	p1_person_1	none	grandchild	0	0
p1_person_1_0_0	p1_person_1_0	none	greatgrandchild	1	0
p1_person_1_1	p1_person_1	none	grandchild	1	0
p1_person_1_2	p1_person_1	none	grandchild	1	0

Output

--

```

    "p1_person_0": {
      "incapacity": 2,
      "parent": "person_main",
      "otherparent": "none",
      "donations": 0,

```

p1_person_1_0	p1_person_1	none	grandchild	0	0
p1_person_1_0_0	p1_person_1_0	none	greatgrandchild	1	0
p1_person_1_1	p1_person_1	none	grandchild	1	0
p1_person_1_2	p1_person_1	none	grandchild	1	0

Output

parentel1

Id	StamQ Et	AccuQ Et	EndQ Et	Accu Et	Claim Et	StamQ Pt	AccuQ Pt	EndQ Pt	Accu Pt	Claim Pt
p1_person_0_0	1/2			0	0			1/4	0	0
p1_person_1_0	1/6			0	0			1/12	0	0
p1_person_1_1	1/6		1/6	0	13333.33			1/12	0	3333.33
p1_person_1_2	1/6		1/6	0	13333.33			1/12	0	3333.33
p1_person_0	1/2			0	0			1/4	0	0
p1_person_1	1/2			0	0			1/4	0	0
p1_person_0_0_0	1/6		1/6	0	20000				0	0
p1_person_0_0_1	1/6		1/6	0	20000				0	0
p1_person_0_0_2	1/6		1/6	0	20000				0	0
p1_person_1_0_0	1/6		1/6	0	13333.33				0	0

Output Summary

PARENTEL1

The back-end Prolog-based inheritance engine calculates the “family tree including inheritance rates and amounts” and returns the results to be displayed graphically.

The front end makes the advice and entitlements clear, so the future testator can see at a glance how his or her assets will be divided.

ErbRechner
by Dr. Matthias Brand

Schritt vier von allen relevanten Angehörigen erfasst.

4 Die gesetzlichen Erb- und Pflichtanteile werden berechnet.

Erbteile **Pflichtteile** Stammbaum **Tabelle**

		Erberteil		Stammquote	Anwachsung	Endquote	Endanspruch
Franz Ehemann	verstorben		0	0	0	0	0
1. Parentel (Kinder)							
Theresa Tochter †	verstorben	Maria Stangl	0	1/3	0	0	0
Johannes Sohn	erbwürdig	Maria Stangl	0	1/3	0	1/3	108.333
Fabienne Tochter	erbwürdig	Maria Stangl	25.000	1/3	0	1/3	83.333
1. Parentel (Enkel)							
(Lukas) Enkel	erbunwürdig	Theresa	0	1/9	0	0	0
Johanna Enkelin	erbwürdig	Theresa	0	1/9	1/18 18.055,56	1/6	54.167
Emilia Enkelin	erbwürdig	Theresa	0	1/9	1/18 18.055,56	1/6	54.167

Nachlassvermögen

Stammbaum

Schenkungen

€ 300.000

Maria Stangl

€ 25.000

