```
read.csv(file="geoquim_granite.csv",
                      sep=";")
```

```
      X Tectonic_setting          Location_notes         Pluton C
1  CR03    OROGENIC BELT ////////Peninsula////// Cape Peninsula b
2 BB202    OROGENIC BELT ////////Peninsula////// Cape Peninsula b
3  CB02    OROGENIC BELT ////////Peninsula////// Cape Peninsula b
4  HB02    OROGENIC BELT ////////Peninsula////// Cape Peninsula b
5  CR01    OROGENIC BELT ////////Peninsula////// Cape Peninsula b
6  LL01    OROGENIC BELT ////////Peninsula////// Cape Peninsula b
7  MP21    OROGENIC BELT ////////Peninsula////// Cape Peninsula b
8  OK07    OROGENIC BELT ////////Peninsula////// Cape Peninsula b
  Size       SubGroup        Group DebonPQ TASMiddlemostPlut Villa
1 1.28 Mafic S-types 1- CPG & MPG      gr  quartz monzonite
2 1.28 Mafic S-types 1- CPG & MPG      gr      granodiorite
3 1.28 Mafic S-types 1- CPG & MPG      gr           granite
4 1.28 Mafic S-types 1- CPG & MPG      gr           granite
5 1.28 Mafic S-types 1- CPG & MPG      gr           granite
6 1.28 Mafic S-types 1- CPG & MPG      gr           granite
7 1.28 Mafic S-types 1- CPG & MPG      gr           granite
8 1.28 Mafic S-types 1- CPG & MPG      gr           granite
       LaRoche Geol_unit_notes Rock_type_notes
1 granodiorite      //////////          //////
2 granodiorite      //////////          //////
3      granite      //////////          //////
4      granite      //////////          //////
5      granite      //////////          //////
6      granite      //////////          //////
7      granite      //////////          //////
8      granite      //////////          //////

1 Unpub. Data, A.Villaros, G. Stevens, R. Scheepers (Villaros et
2 Unpub. Data, A.Villaros, G. Stevens, R. Scheepers (Villaros et
3 Unpub. Data, A.Villaros, G. Stevens, R. Scheepers (Villaros et
4 Unpub. Data, A.Villaros, G. Stevens, R. Scheepers (Villaros et
```

```
read.csv(file="geoquim_granite.csv",
                        sep=";")  %>%
  select(Tectonic_setting,SiO2:P2O5)
```

	Tectonic_setting	SiO2	TiO2	Al2O3	FeOt	
1	OROGENIC BELT	65.40690	0.8270369	17.08490	4.9144100	0.
2	OROGENIC BELT	69.64232	0.7087655	14.88713	4.1863090	0.
3	OROGENIC BELT	70.61077	0.5705854	15.28393	2.8221040	0.
4	OROGENIC BELT	70.61724	0.4775028	15.70859	2.5081090	0.
5	OROGENIC BELT	70.70878	0.5322106	15.28031	2.5357460	0.
6	OROGENIC BELT	70.96736	0.4840032	15.48290	2.4697070	0.
7	OROGENIC BELT	72.39802	0.4696716	14.28857	2.6808850	0.
8	OROGENIC BELT	73.16647	0.4284571	14.39149	2.4040580	0.
9	OROGENIC BELT	73.17825	0.3625764	14.35444	2.2466560	0.
10	OROGENIC BELT	74.77016	0.5301808	13.54476	2.7285870	0.
11	OROGENIC BELT	61.08795	1.9111071	15.40720	10.3845470	0.
12	OROGENIC BELT	61.45151	1.7132862	16.18593	9.3000910	0.
13	OROGENIC BELT	66.20815	1.7695713	15.62782	6.8469320	0.
14	OROGENIC BELT	68.50674	0.9450154	14.99537	4.6423330	0.
15	OROGENIC BELT	68.90272	0.8492849	14.83329	5.6320500	0.
16	OROGENIC BELT	71.62353	0.4899112	14.78217	3.2361810	0.
17	OROGENIC BELT	69.69844	0.5247099	15.72873	3.1664100	0.
18	OROGENIC BELT	69.76368	0.4698065	16.38619	2.6795250	0.
19	OROGENIC BELT	71.21874	0.5667648	15.32181	2.8371420	0.
20	OROGENIC BELT	71.60774	0.5224897	15.14900	2.6420490	0.
21	OROGENIC BELT	71.72355	0.4479090	14.99544	2.5121780	0.
22	OROGENIC BELT	71.94376	0.4661079	15.02880	2.7963720	0.
23	OROGENIC BELT	71.97214	0.5289264	14.59754	2.9621120	0.
24	OROGENIC BELT	72.21388	0.4712809	14.38781	3.1716190	0.
25	OROGENIC BELT	72.63072	0.4146118	14.34936	2.8977150	0.
26	OROGENIC BELT	72.68455	0.3693858	15.13261	2.1799160	0.
27	OROGENIC BELT	73.25005	0.4634560	14.24501	2.7702770	0.
28	OROGENIC BELT	73.54354	0.5326935	13.72588	3.0646330	0.
29	OROGENIC BELT	76.69906	0.1406721	12.92808	1.1540820	0.
30	OROGENIC BELT	63.37698	1.2838913	17.10922	5.7640400	0.
31	OROGENIC BELT	67.99483	1.0997780	16.14770	4.6926050	0.

```
read.csv(file="geoquim_granite.csv",
                        sep=";")  %>%
  select(Tectonic_setting,SiO2:P2O5)
  drop_na()
```

	Tectonic_setting	SiO2	TiO2	Al2O3	FeOt	
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30	OROGENIC BELT	63.37698	1.2838913	17.10922	5.7640400	0.
31	OROGENIC BELT	67.99483	1.0997780	16.14770	4.6926050	0.

```
read.csv(file="geoquim_granite.csv",
                      sep=";")  %>%
  select(Tectonic_setting,SiO2:P2O5)
  drop_na() %>%
  group_by(Tectonic_setting)
```

```
# A tibble: 2,986 × 11
# Groups:   Tectonic_setting [9]
   Tectonic_setting  SiO2  TiO2 Al2O3  FeOt    MnO   MgO   CaO   <
   <chr>            <dbl> <dbl> <dbl> <dbl>  <dbl> <dbl> <dbl> <d
 1 OROGENIC BELT     65.4 0.827  17.1  4.91 0.0771 1.80   1.81  5
 2 OROGENIC BELT     69.6 0.709  14.9  4.19 0.0540 1.63   1.44  5
 3 OROGENIC BELT     70.6 0.571  15.3  2.82 0.0532 1.33   1.20  5
 4 OROGENIC BELT     70.6 0.478  15.7  2.51 0.0407 0.978  1.31  5
 5 OROGENIC BELT     70.7 0.532  15.3  2.54 0.0609 1.21   1.24  5
 6 OROGENIC BELT     71.0 0.484  15.5  2.47 0.0396 1.01   1.48  5
 7 OROGENIC BELT     72.4 0.470  14.3  2.68 0.0422 1.03   1.09  5
 8 OROGENIC BELT     73.2 0.428  14.4  2.40 0.0605 0.769  1.06  5
 9 OROGENIC BELT     73.2 0.363  14.4  2.25 0.0211 0.678  1.10  5
10 OROGENIC BELT     74.8 0.530  13.5  2.73 0.0472 1.18   1.43  3
# … with 2,976 more rows
```

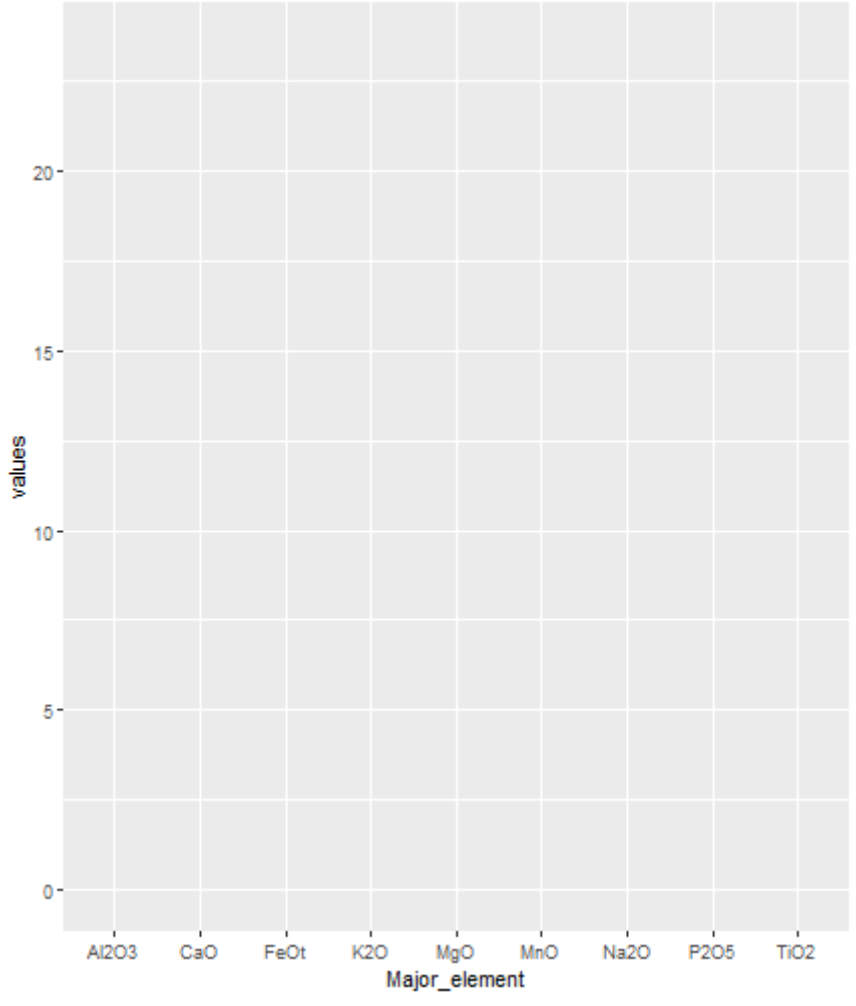
```
read.csv(file="geoquim_granite.csv",
                      sep=";")  %>%
  select(Tectonic_setting,SiO2:P2O5)
  drop_na() %>%
  group_by(Tectonic_setting) %>%
  mutate(across(cols=TiO2:P2O5,
                .fns = as.double))
```

```
# A tibble: 2,986 × 11
# Groups:   Tectonic_setting [9]
   Tectonic_setting  SiO2  TiO2 Al2O3  FeOt    MnO   MgO   CaO   <
   <chr>            <dbl> <dbl> <dbl> <dbl>  <dbl> <dbl> <dbl> <d
 1 OROGENIC BELT     65.4 0.827  17.1  4.91 0.0771 1.80   1.81  5
 2 OROGENIC BELT     69.6 0.709  14.9  4.19 0.0540 1.63   1.44  5
 3 OROGENIC BELT     70.6 0.571  15.3  2.82 0.0532 1.33   1.20  5
 4 OROGENIC BELT     70.6 0.478  15.7  2.51 0.0407 0.978  1.31  5
 5 OROGENIC BELT     70.7 0.532  15.3  2.54 0.0609 1.21   1.24  5
 6 OROGENIC BELT     71.0 0.484  15.5  2.47 0.0396 1.01   1.48  5
 7 OROGENIC BELT     72.4 0.470  14.3  2.68 0.0422 1.03   1.09  5
 8 OROGENIC BELT     73.2 0.428  14.4  2.40 0.0605 0.769  1.06  5
 9 OROGENIC BELT     73.2 0.363  14.4  2.25 0.0211 0.678  1.10  5
10 OROGENIC BELT     74.8 0.530  13.5  2.73 0.0472 1.18   1.43  3
# … with 2,976 more rows
```

```
read.csv(file="geoquim_granite.csv",
                      sep=";")  %>%
  select(Tectonic_setting,SiO2:P2O5)
  drop_na() %>%
  group_by(Tectonic_setting) %>%
  mutate(across(cols=TiO2:P2O5,
                .fns = as.double)) %>
  pivot_longer(cols = TiO2:P2O5,
               names_to="Major_elemen
               values_to="values")
```

```
# A tibble: 26,874 × 4
# Groups:   Tectonic_setting [9]
   Tectonic_setting  SiO2 Major_element  values
   <chr>            <dbl> <chr>           <dbl>
 1 OROGENIC BELT     65.4 TiO2            0.827
 2 OROGENIC BELT     65.4 Al2O3          17.1
 3 OROGENIC BELT     65.4 FeOt            4.91
 4 OROGENIC BELT     65.4 MnO             0.0771
 5 OROGENIC BELT     65.4 MgO             1.80
 6 OROGENIC BELT     65.4 CaO             1.81
 7 OROGENIC BELT     65.4 K2O             5.13
 8 OROGENIC BELT     65.4 Na2O            2.66
 9 OROGENIC BELT     65.4 P2O5            0.288
10 OROGENIC BELT     69.6 TiO2            0.709
# … with 26,864 more rows
```

```
read.csv(file="geoquim_granite.csv",
                      sep=";")  %>%
  select(Tectonic_setting,SiO2:P2O5)
  drop_na() %>%
  group_by(Tectonic_setting) %>%
  mutate(across(cols=TiO2:P2O5,
                .fns = as.double)) %>
  pivot_longer(cols = TiO2:P2O5,
               names_to="Major_elemen
               values_to="values") %>
  ggplot(aes(x=Major_element,
             y=values,
             color=Major_element,
             fill=Major_element))
```



```
read.csv(file="geoquim_granite.csv",
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  select(Tectonic_setting,SiO2:P2O5)
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  mutate(across(cols=TiO2:P2O5,
                .fns = as.double)) %>
  pivot_longer(cols = TiO2:P2O5,
               names_to="Major_elemen
               values_to="values") %>
  ggplot(aes(x=Major_element,
             y=values,
             color=Major_element,
             fill=Major_element)) +
  geom_boxplot()
```

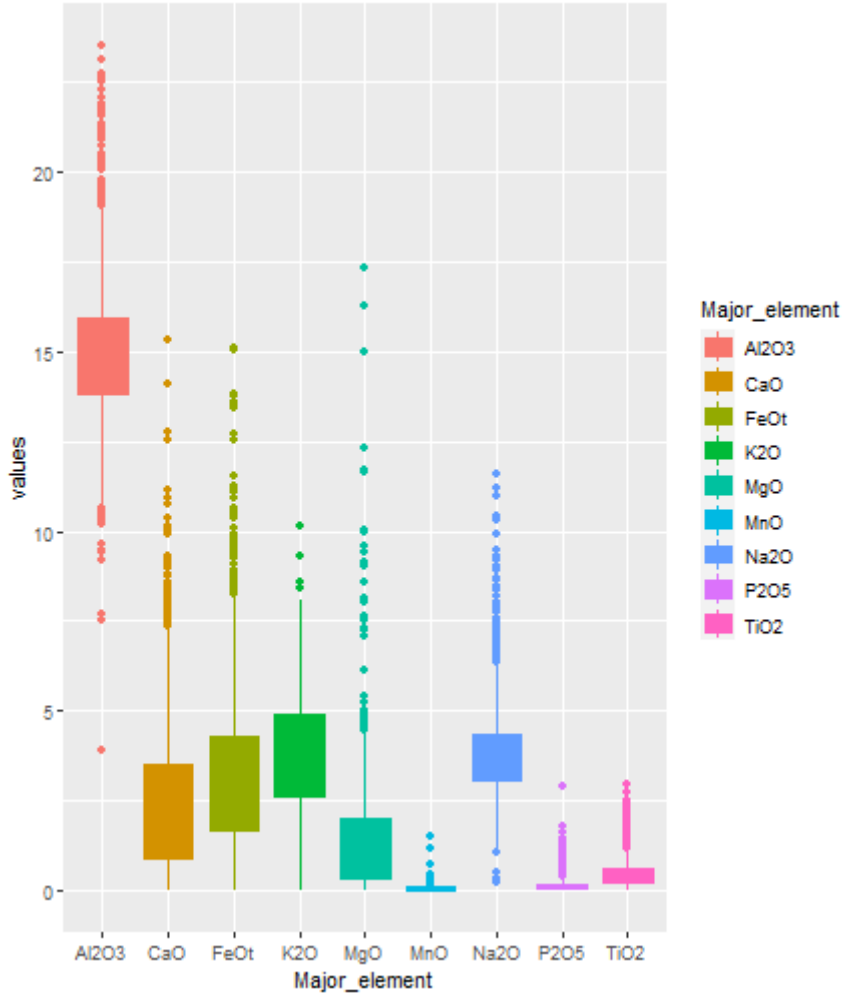

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read.csv(file="geoquim_granite.csv",
                      sep=";")  %>%
  select(Tectonic_setting,SiO2:P2O5)
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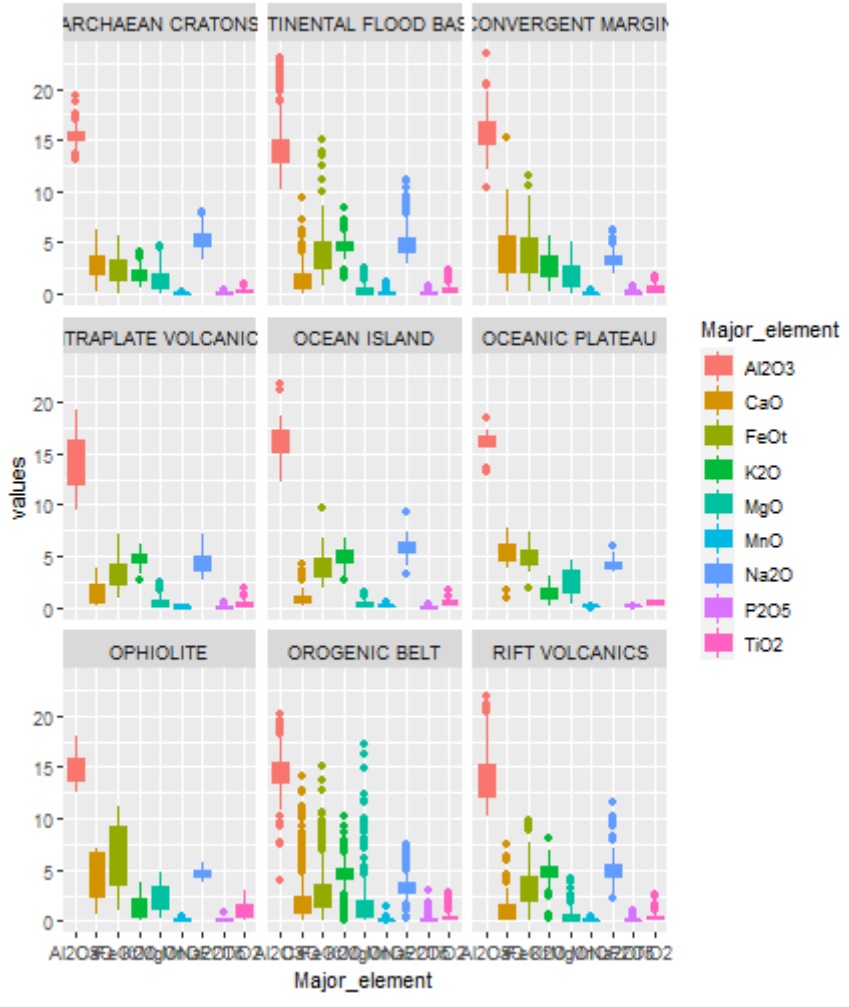
  ggplot(aes(x=Major_element,
             y=values,
             color=Major_element,
             fill=Major_element)) +
  geom_boxplot()+
  facet_wrap(~Tectonic_setting)
```



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  ggplot(aes(x=Major_element,
             y=values,
             color=Major_element,
             fill=Major_element)) +
  geom_boxplot()+
  facet_wrap(~Tectonic_setting)+
  theme(axis.text.x = element_text(an
```

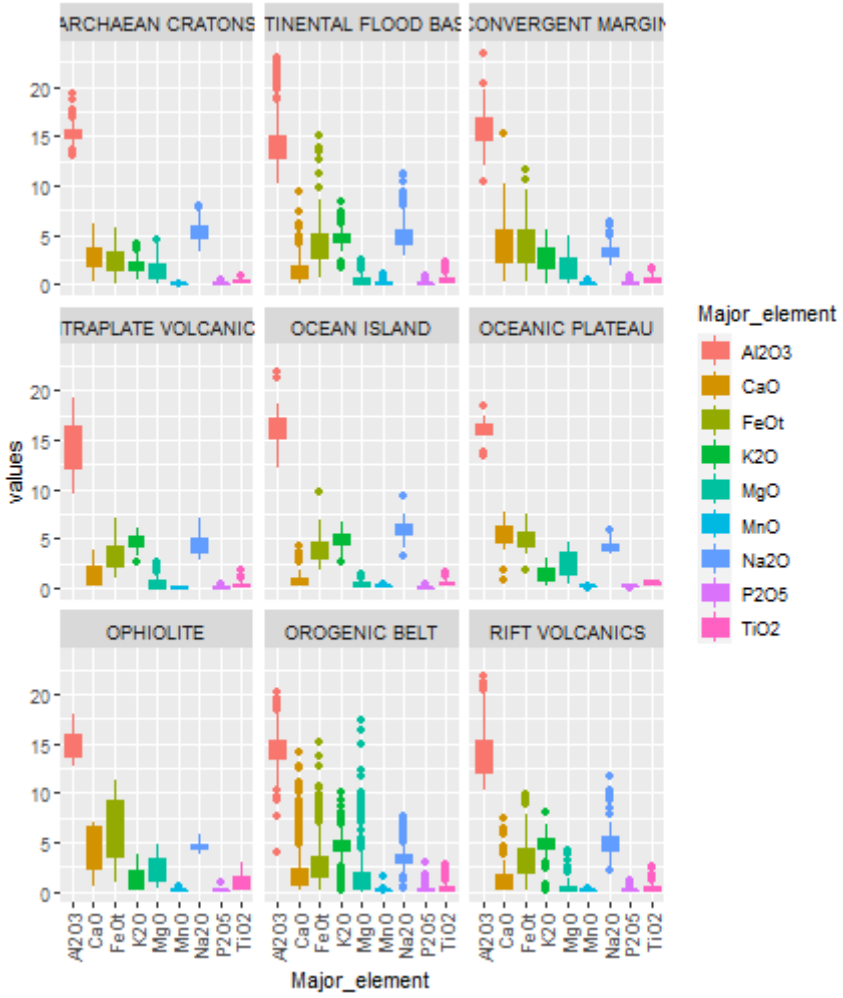


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                      sep=";")  %>%
  select(Tectonic_setting,SiO2:P2O5) %>%
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