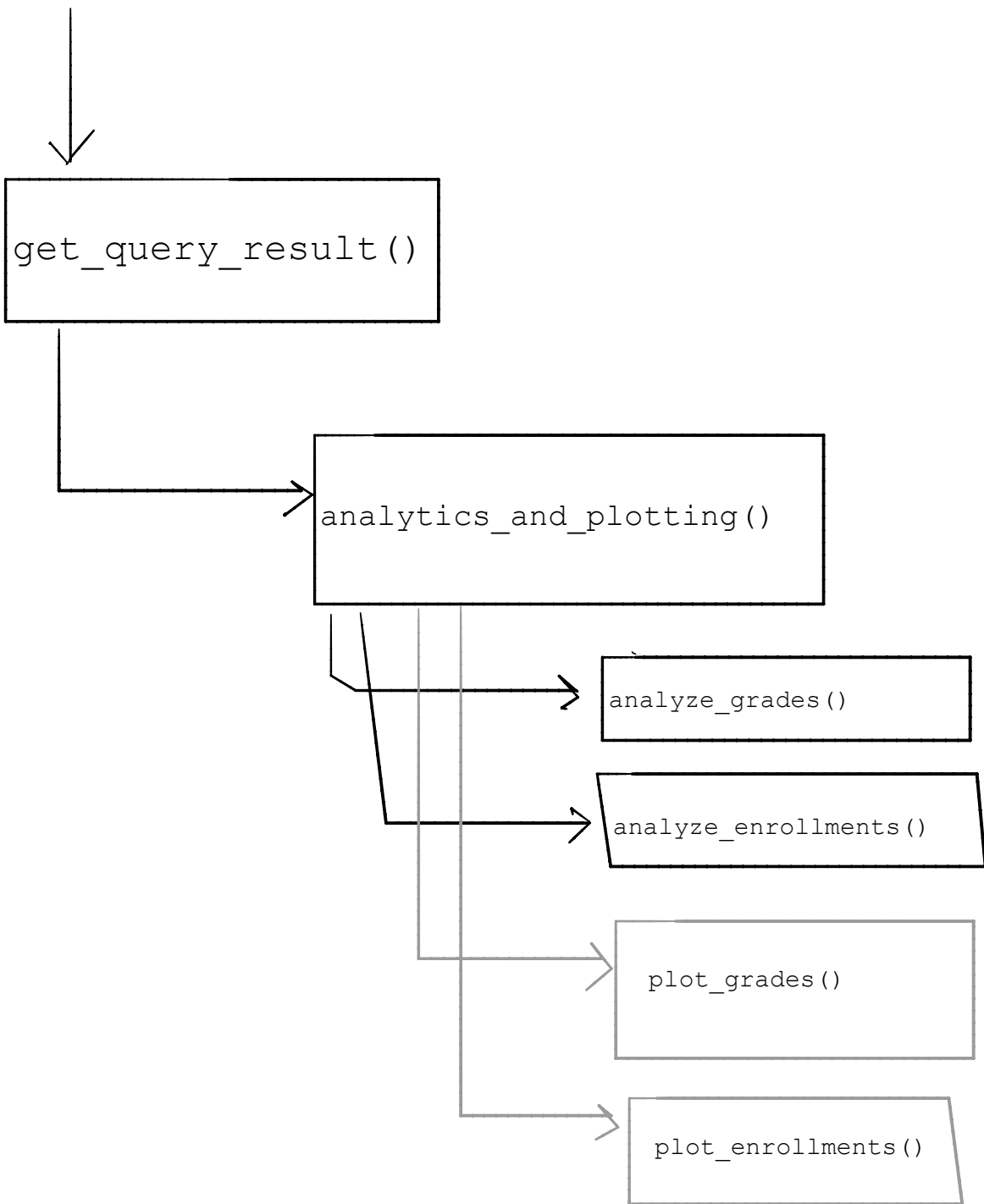



User Function



list of courses/depts, list of terms/years,
plotting - grades, plotting - enrollments,
output File



```
get_query_result()
```

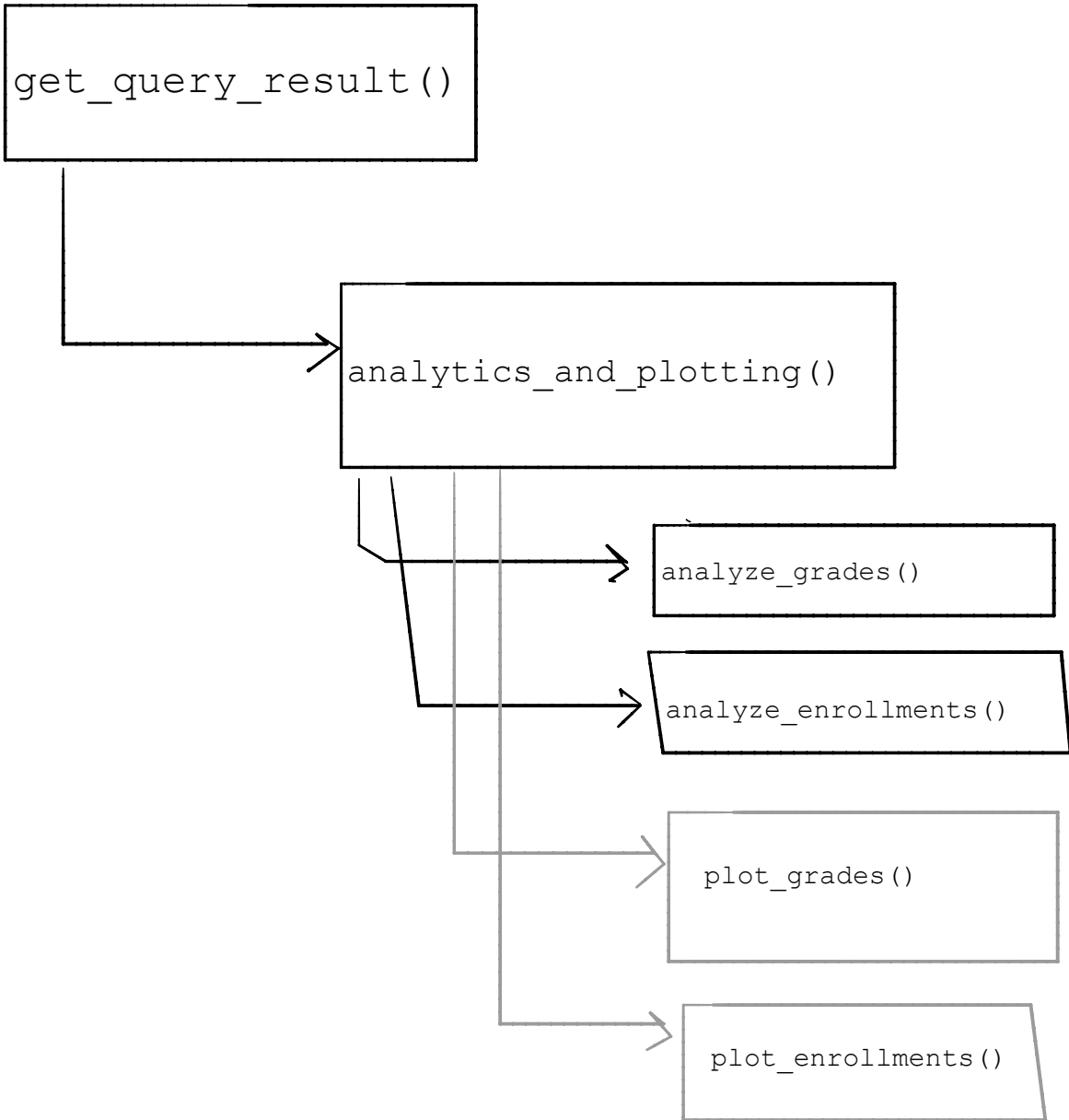
```
analytics_and_plotting()
```

```
analyze_grades()
```

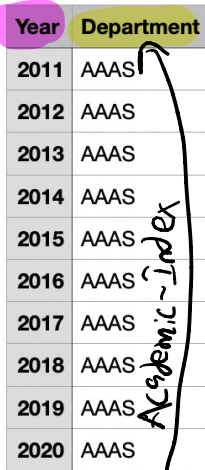
```
analyze_enrollments()
```

```
plot_grades()
```

```
plot_enrollments()
```



data_by_department_and_year



Year	Department	Number of Sections	Enrollments	Mean Points
2011	AAAS	24	507	10.791666666666700
2012	AAAS	24	483	10.729166666666700
2013	AAAS	24	369	11.01086956521740
2014	AAAS	30	569	10.741379310344800
2015	AAAS	26	488	10.711538461538500
2016	AAAS	28	604	11.107142857142900
2017	AAAS	31	702	11.096774193548400
2018	AAAS	35	752	11.314285714285700
2019	AAAS	33	718	11.393939393939400
2020	AAAS	9	189	11.38888888888890

data_by_course_and_term

Term	Course Name	Number of Sections	Enrollments	Mean Points
13W	AAAS-7.0	1	16	11.0
14S	AAAS-7.0	1	16	12.0
12S	AAAS-10.0	1	19	9.0
13W	AAAS-10.0	1	10	11.5
14F	AAAS-10.0	1	13	11.0
15F	AAAS-10.0	1	20	11.0
16F	AAAS-10.0	1	25	11.0
18W	AAAS-10.0	1	12	11.0
20W	AAAS-10.0	1	11	12.0
11W	AAAS-11.0	1	13	10.0
14W	AAAS-11.0	1	11	11.0
15F	AAAS-11.0	1	12	10.0
17X	AAAS-11.0	1	15	11.0
17F	AAAS-11.0	1	13	12.0
19S	AAAS-11.0	1	27	11.0
19F	AAAS-11.0	1	41	12.0
13X	AAAS-12.0	1	18	12.0
15S	AAAS-12.0	1	11	10.0
15F	AAAS-12.0	1	14	10.0

`get_query_result()`

Extract resulting
data Frame

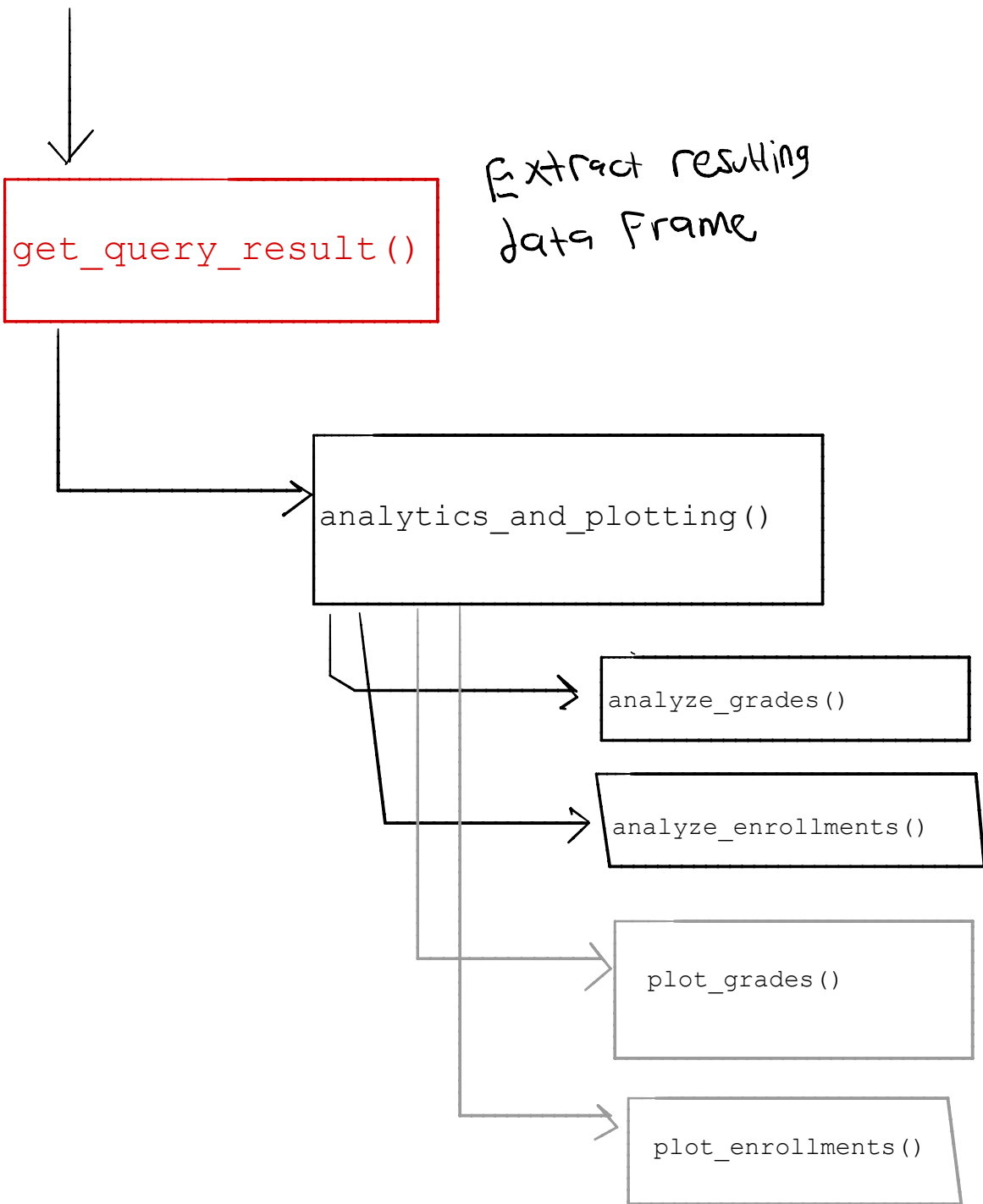
`analytics_and_plotting()`

`analyze_grades()`

`analyze_enrollments()`

`plot_grades()`

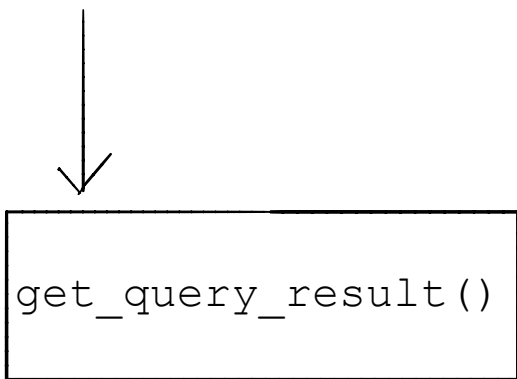
`plot_enrollments()`



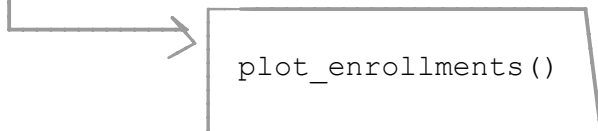
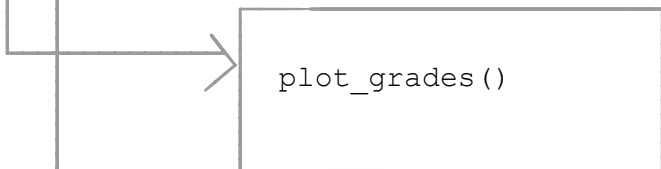
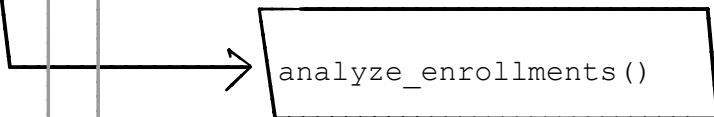
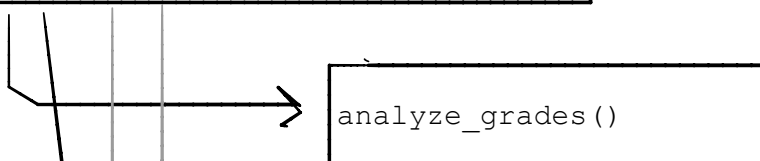
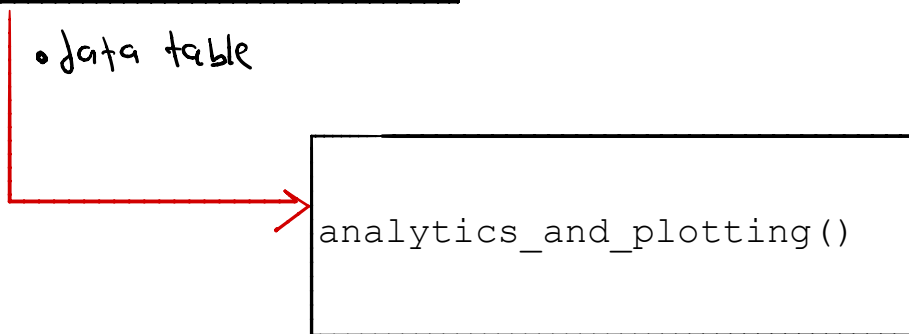
Result Data Frame:

test_course_term

Term	Course Name	Number of Sections	Enrollments	Mean Points
15F	WRIT-5.0	30	467	10.9833333333333300
18W	WRIT-5.0	30	473	11.3
18F	WRIT-5.0	32	505	11.3125
19W	WRIT-5.0	26	412	11.519230769230800
19F	WRIT-5.0	33	523	11.454545454545500
20W	WRIT-5.0	28	433	11.839285714285700
15S	COSC-10.0	1	57	10.0
15F	COSC-10.0	1	104	10.0
18W	COSC-10.0	1	88	10.0
18F	COSC-10.0	2	79	10.75
19W	COSC-10.0	2	100	11.0
19F	COSC-10.0	2	107	10.5
20W	COSC-10.0	2	97	11.0
15S	MATH-20.0	1	35	11.0
15F	MATH-20.0	1	23	10.0
18F	MATH-20.0	1	30	10.5
19F	MATH-20.0	1	45	10.0



• data table



↓

```
get_query_result()
```

```
graph TD; A[get_query_result()] --> B[analytics_and_plotting()]; B --> C[analyze_grades()]; B --> D[analyze_enrollments()]; B --> E[plot_grades()]; B --> F[plot_enrollments()];
```

```
analytics_and_plotting()
```

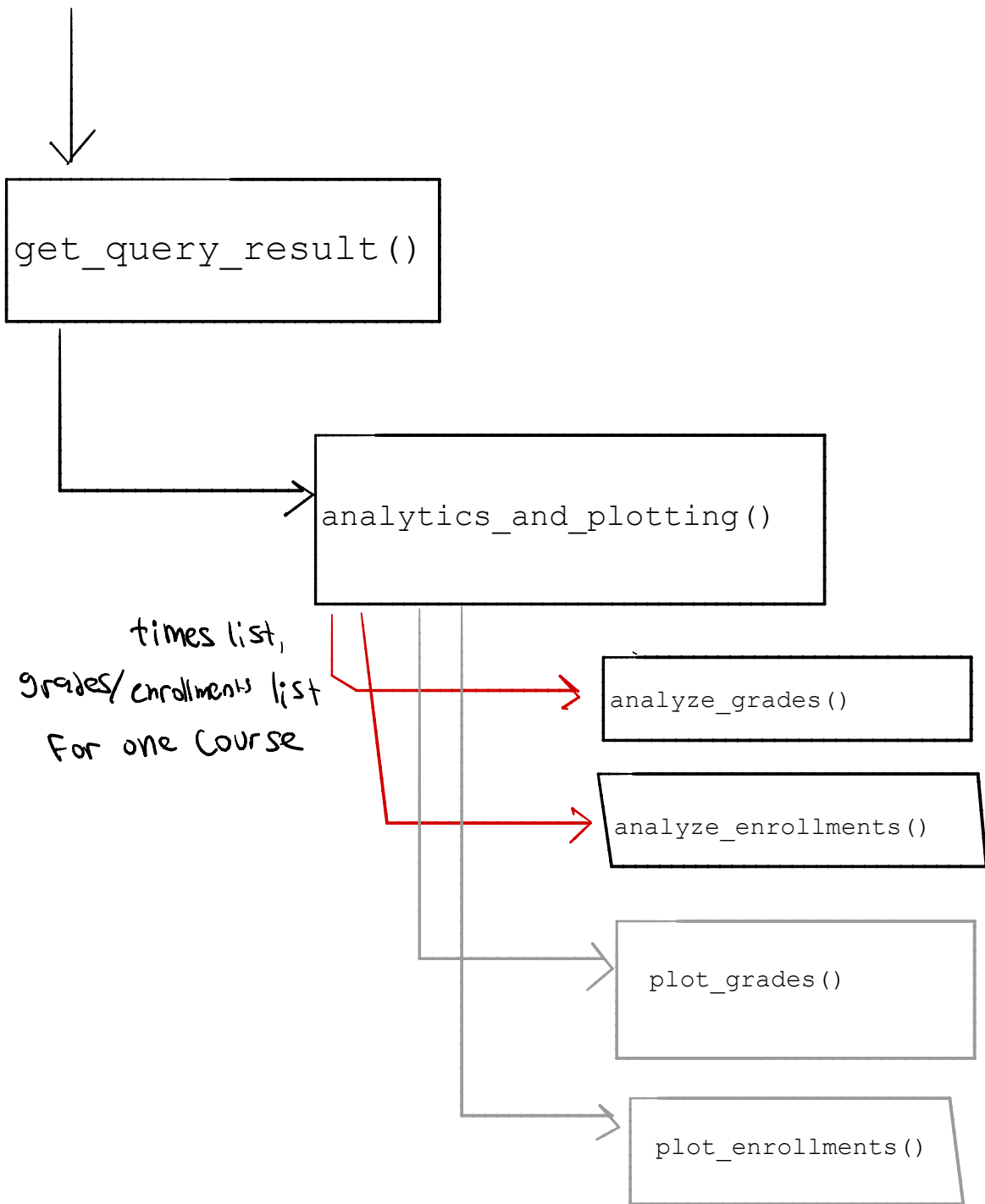
. Separate
each
academic
item

```
analyze_grades()
```

```
analyze_enrollments()
```

```
plot_grades()
```

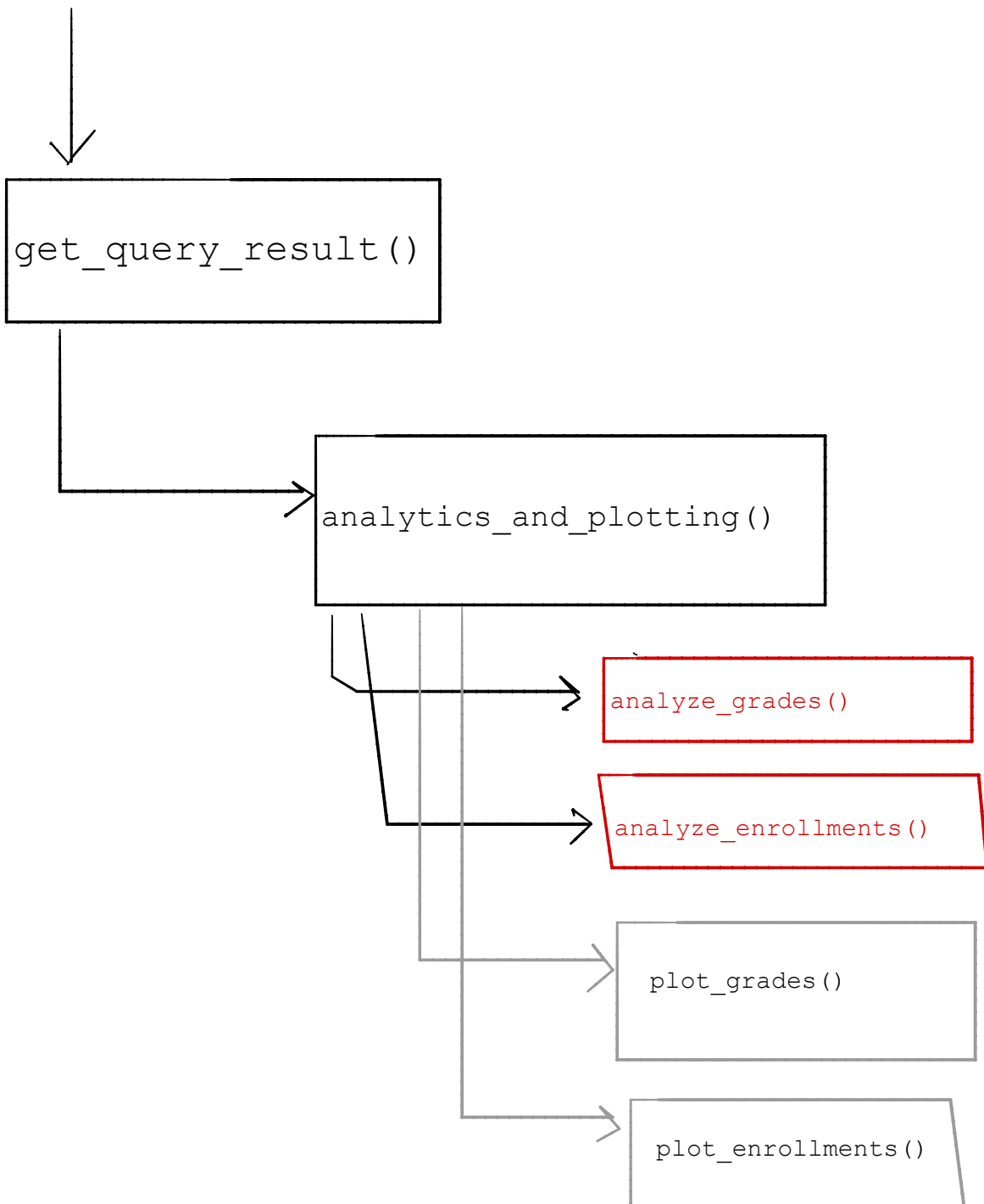
```
plot_enrollments()
```

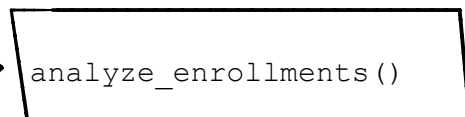
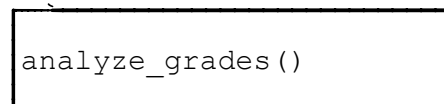
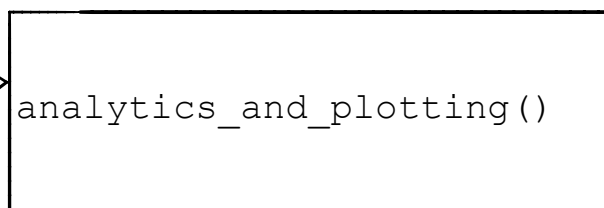
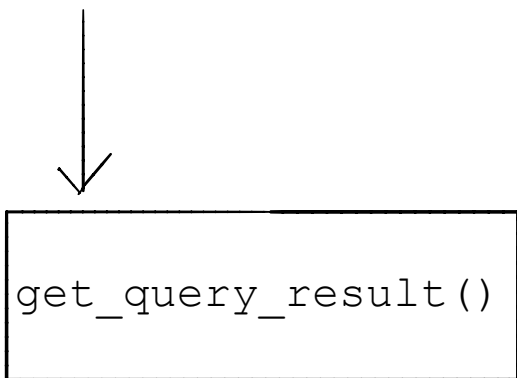



Academic Item : WRIT-5.0

Times List : ['15F', '18W', '18F', '19W', '19F', '20W']

Grades List : [10.983333333333333, 11.3, 11.3125, 11.519230769230768, 11.454545454545455, 11.839285714285715]





times list,
grades/enrollments list
for one course

