Spreadsheet Explanations

	A	B	C	D	E	F	G
1				Payroll Spreadsheet			
2	Name	Pay Rate	Regular Hours	Overtime Hours	Regular Pay	Overtime Pay	Total
3	Adams	8.9	40	5	=B3*C3	=B3*1.5*D3	=E3+F3
4	Baker	12.55	35	0	=B4*C4	=B4*1.5*D4	=E4+F4
5	Carlton	9.6	40	2	=B5*C5	=B5*1.5*D5	=E5+F5
6	Daniels	10.2	35	0	=B6*C6	=B6*1.5*D6	=E6+F6
7							
8	Totals		=SUM(C3:C6)	=SUM(D3:D6)	=SUM(E3:E6)	=SUM(F3:F6)	=SUM(G3:G6)

Label Abstraction

	A	B	C	D	E	F	G
1				Payroll Spreadsheet			
2	Name	Pay Rate	Regular Hours	Overtime Hours	Regular Pay	Overtime Pay	Total
3	Adams	8.9	40	5	=Pay Rate*Regular Hours	=Pay Rate*1.5*Overtime Hours	=Regular Pay+Overtime Pay
4	Baker	12.55	35	0	=Pay Rate*Regular Hours	=Pay Rate*1.5*Overtime Hours	=Regular Pay+Overtime Pay
5	Carlton	9.6	40	2	=Pay Rate*Regular Hours	=Pay Rate*1.5*Overtime Hours	=Regular Pay+Overtime Pay
6	Daniels	10.2	35	0	=Pay Rate*Regular Hours	=Pay Rate*1.5*Overtime Hours	=Regular Pay+Overtime Pay
7							
8	Totals		=SUM(Regular Hours)	=SUM(Overtime Hours)	=SUM(Regular Pay)	=SUM(Overtime Pay)	=SUM(Total)

Spreadsheet Explanations

	A	B	C	D	E	F	G
1				Payroll Spreadsheet			
2	Name	Pay Rate	Regular Hours	Overtime Hours	Regular Pay	Overtime Pay	Total
3	Adams	8.9	40	5	=Pay Rate*Regular Hours	=Pay Rate*1.5*Overtime Hours	=Regular Pay+Overtime Pay
4	Baker	12.55	35	0	=Pay Rate*Regular Hours	=Pay Rate*1.5*Overtime Hours	=Regular Pay+Overtime Pay
5	Carlton	9.6	40	2	=Pay Rate*Regular Hours	=Pay Rate*1.5*Overtime Hours	=Regular Pay+Overtime Pay
6	Daniels	10.2	35	0	=Pay Rate*Regular Hours	=Pay Rate*1.5*Overtime Hours	=Regular Pay+Overtime Pay
7							
8	Totals		=SUM(Regular Hours)	=SUM(Overtime Hours)	=SUM(Regular Pay)	=SUM(Overtime Pay)	=SUM(Total)

Loop Abstraction ~ Zoom

	A	B	C	D	E	F	G
1				Payroll Spreadsheet			
2	Name	Pay Rate	Regular Hours	Overtime Hours	Regular Pay	Overtime Pay	Total
3	*[Adams...Daniels]*	*[8.9...12.55]*	*[35...40]*	*[0...5]*	=Pay Rate*Regular Hours	=Pay Rate*1.5*Overtime Hours	=Regular Pay+Overtime Pay
4							
5	Totals		=SUM(Regular Hours)	=SUM(Overtime Hours)	=SUM(Regular Pay)	=SUM(Overtime Pay)	=SUM(Total)

Value Range

Spreadsheet Explanations

	A	B	C	D	E	F	G
1				Payroll Spreadsheet			
2	Name	Pay Rate	Regular Hours	Overtime Hours	Regular Pay	Overtime Pay	Total
3	Adams	8.9	40	5	=B3*C3	=B3*1.5*D3	=E3+F3
4	Baker	12.55	35	0	=B4*C4	=B4*1.5*D4	=E4+F4
5	Carlton	9.6	40	2	=B5*C5	=B5*1.5*D5	=E5+F5
6	Daniels	10.2	35	0	=B6*C6	=B6*1.5*D6	=E6+F6
7							
8	Totals		=SUM(C3:C6)	=SUM(D3:D6)	=SUM(E3:E6)	=SUM(F3:F6)	=SUM(G3:G6)

Explanation Sheet

	A	B	C	D	E	F	G
1				Payroll Spreadsheet			
2	Name	Pay Rate	Regular Hours	Overtime Hours	Regular Pay	Overtime Pay	Total
3	*[Adams…Daniels]*	*[8.9…12.55]*	*[35…40]*	*[0…5]*	=Pay Rate*Regular Hours	=Pay Rate*1.5*Overtime Hours	=Regular Pay+Overtime Pay
4							
5	Totals		=SUM(Regular Hours)	=SUM(Overtime Hours)	=SUM(Regular Pay)	=SUM(Overtime Pay)	=SUM(Total)

Explanation Principles

Explanation Sheet

Labels, Zooms

1. Structure Preservation
2. Abstraction
3. Partiality
4. Compositionality

Unexplained Parts

*Spreadsheet ~ Table**

Principles apply to other languages as well!

Spreadsheet Sandbox

Try out
language design ideas
on spreadsheets