

CPSC 203 SpreadSheets

Week 1 Lab2
Dina A. Said
dasaid@ucalgary.ca

What to be covered today?

- Custom calculations
- If statement
- Pivot tables
- Lookup table

1/21/2009

CPSC203- Weeks- Lab2

2

Custom Calculations

- Create your own Functions using “=”

	A	B	C	D	E	F	G
1							
2							
3		Subject1	Subject2	Subject3		Total	Average
4	Student1	70	60	70			
5	Student2	90	95	93			
6	Student3	50	55	40			
7							
8	Total						
9	Average						
10							

1/21/2009

CPSC203- Weeks- Lab2

3

	Subject1	Subject2	Subject3	Total	Average
Student1	70	60	70	=SUM(
Student2	90	95	93	SUM(number1, (num	
Student3	50	55	40		
Total					
Average					

1/21/2009

CPSC203- Weeks- Lab2

4

	Subject1	Subject2	Subject3	Total	Average
Student1	70	60	70	=SUM(B4:D4)	
Student2	90	95	93	SUM(number1, number2)	
Student3	50	55	40		
Total					
Average					

1/21/2009 CPSC209- Weeks- Labs 5

	Subject1	Subject2	Subject3	Total	Average
Student1	70	60	70	=SUM(B4:D4)	
Student2	90	95	93		
Student3	50	55	40		
Total					
Average					

1/21/2009 CPSC209- Weeks- Labs 6

	Subject1	Subject2	Subject3	Total	Average
Student1	70	60	70	200	
Student2	90	95	93	278	
Student3	50	55	40	145	
Total					
Average					

1/21/2009 CPSC209- Weeks- Labs 7

	Subject1	Subject2	Subject3	Total	Average
Student1	70	60	70	200	=F4/3
Student2	90	95	93	278	
Student3	50	55	40	145	
Total					
Average					

1/21/2009 CPSC209- Weeks- Labs 8

	Subject1	Subject2	Subject3	Total	Average
Student1	70	60	70	200	66.66667
Student2	90	95	93	278	92.66667
Student3	50	55	40	145	48.33333
Total					
Average					

Now, calculate the average of each subject :

- * Using AVERAGE implied function
- * Using custom calculations (sum/count)

Hint: Use auto fill to apply the function to the three subjects

	A	B	C	D	E	F	G
1							
2							
3		Subject1	Subject2	Subject3		Total	Average
4	Student1	70	60	70		200	66.66667
5	Student2	90	95	93		278	92.66667
6	Student3	50	55	40		145	48.33333
7							
8							
9	Average	=SUM(B4:B6)/COUNT(B4:B6)					

	Subject1	Subject2	Subject3	Total	Average
Student1	70	60	70	200	66.66667
Student2	90	95	93	278	92.66667
Student3	50	55	40	145	48.33333
Average1	70	70	67.66667		
Average2	70	70	67.66667		

Order of Calculations

- Multiplication, Division
- Addition, Subtraction
- Example:
 - $2+3*5 = 2+(3*5)$
 - $2/3+5 = (2/3)+5$
- Use brackets if you are confused

1/21/2009

CPSC209- Weeks- Labs

13

If-Then Statement

- 3 parts:
 - Logical test
 - True statement
 - False statement (optional)
- Example:
 - * If Mary's Mark in subject1 > 60
 - * Then, She passed
 - * Else, She failed

1/21/2009

CPSC209- Weeks- Labs

14

Formula

- =IF(<logical statement>, <true statement>, <false statement>)
 - Example:
 - =IF(B4>60,"pass","fail")
- Note: If your result is **string** or you are testing string, you should use ""

1/21/2009

CPSC209- Weeks- Labs

15

	Subject1	Subject2	Subject3	Total	Average	
Student1	70	60	70	200	66.66667	=IF(B4>60,"pass","fail")
Student2	90	95	93	278	92.66667	
Student3	50	55	40	145	48.33333	

1/21/2009

CPSC209- Weeks- Labs

16

Using auto Fill

	Subject1	Subject2	Subject3	Total	Average	Subject1-Result
Student1	70	60	70	200	66.66667	pass
Student2	90	95	93	278	92.66667	pass
Student3	50	55	40	145	48.33333	fail

1/21/2009

CPSC209- Weeks- Lab2

17

- Think how to make if statement for subject 2 using Insert Function

Function Arguments

IF

Logical_test: C4>=60 = FALSE

Value_if_true: "Pass" = "Pass"

Value_if_false: "Fail" = "Fail"

Checks whether a condition is met, and returns one value if TRUE, and another value if FALSE.

Logical_test is any value or expression that can be evaluated to TRUE or FALSE.

Formula result = Fail

[Help on this function](#)

OK Cancel

1/21/2009

CPSC209- Weeks- Lab2

18

- What is the best way to apply the function for subject 3 as well?
- What if we want the test to be

Greater than or equal

1/21/2009

CPSC209- Weeks- Lab2

19

Nested If Statement

- If subject1 >= 90
 - Then, A
 - Else If subject2 >=70
 - Then, B
 - Else C

=IF(B4>=90,"A", IF(B4>=70,"B", "C"))

1/21/2009

CPSC209- Weeks- Lab2

20

=IF(B4>=90,"A",IF(B4>=70,"B","C"))

	B	C	D	E	F	G	H	I	J	K
1										
2										
3	Subject1	Subject2	Subject3	Total	Average	Subject1-Result	Subject2-Result	Subject2-Result	Grade1	
4	70	60	70	200	66.66667	pass	pass	pass	B	
5	90	95	93	278	92.66667	pass	pass	pass	A	
6	50	55	40	145	48.33333	fail	fail	fail	C	
7										

1/21/2009 CPSC209-Weeks- Lab2 21

Lookup tables

- Sometimes, we have a code that we want it to be replaced with a value

Student	Grade
Student1	72
Student2	91
Student3	50

60	F
70	D
80	B
90	A

=LOOKUP(B4,F3:G7)

1/21/2009 CPSC209-Weeks- Lab2 22

Notes for Lookup table

- Data in lookup tables must be in an ascending order
- You should use absolute referencing to fill out the function
 - e.g. use \$A\$1:\$B\$5 Instead of A1:B5 for values that you don't want its location to change in fill out
- You should use a value of 0 for first lookup value, so that any value from 0 to the first will take a lookup value
- Always, ask yourself if the answer is correct or not for randomly selected values

1/21/2009 CPSC209-Weeks- Lab2 23

Exercise

object	color letter	color
1	b	
2	g	
3	r	
4	r	
5	b	

For each color letter, write its color using the following code:
r is red, g is green, b is blue

Can you write the lookup table this way?

r	red
g	Green
b	blue

9/16/2009 CPSC209-Spreadsheets-Weeks- Lab2 24

VLookup

- Searching for a certain text, e.g. student ID

Id	Name
1000	Mark
2000	Sara
3000	Susan
4000	Juila

We want to lookup student with Id 3000
 =VLOOKUP(3000,A5:B9,2)

Formula: VLOOKUP(Value, table, column Index)

1/21/2009

CPSC203- Weeks- Lab2

25

Id	Name	Country		
1000	Mark	Canada		
2000	Sara	USA		
3000	Susan	Sweden		
4000	Juila	Canada		

What is the name and country of student of ID 3000?

Susan	Sweden			

What is the name of student of ID = 2001?

Sara				
------	--	--	--	--

9/16/2009

CPSC203- Spreadsheets-Week- Lab2

26

Pivot tables

- To summarize your data

Month	Depart	Expenses
1	CPSC	1000
1	Arts	2000
1	Language	1500
2	CPSC	2500
2	Arts	3000
2	Language	4000

1/21/2009

CPSC203- Weeks- Lab2

27

Pivot tables (cont.)

- Choose tab insert → pivot table
- Choose the rang
- Choose where to put the table
 - In the same sheet or another sheet
- Select data of interest
- Drag which to be in rows and which to be in columns
- Select the calculation to be performed; Max, Average, etc..
 - Using value field setting (when u click on the variable in values)

1/21/2009

CPSC203- Weeks- Lab2

28

Pivot tables for Max of expenses for each department

Row Labels	Max of Expenses
Arts	3000
CPSC	2500
Language	4000
Grand Total	4000