### COMP1022Q Introduction to Computing with Excel VBA

#### Range References

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#### Referring to Cells

- An Excel formula may contain a function
- For example, SUM(), MAX(), and AVERAGE()
- Such functions typically perform operations on several different cells i.e. SUM (A2:B4)
- In Excel we use the general expression 'a *range* of cells' when something refers to cells
- Excel provides several ways to refer to ranges of cells, as shown in the following slides

## Range References – One Cell

	А	В	С	D	E	F		
1	Referring to a Range of	of Cells						
	This example shows how you c	an refer to a rav	ige of cells ii	n formulas.				
	The SUM() function is used to	demonstrate this	by calculati	ng the spend	ing of food f	rom the		
2	table in various ways.							
3								
4		Monday	Tuesday	Wednesday	Thursday	Friday		
5	Breakfast	HK\$18.00	HK\$20.00	HK\$18.00	HK\$17.50	HK\$18.00		
6	Lunch	HK\$23.00	HK\$30.00	HK\$22.00	HK\$22.00	HK\$21.50		
7	Tea	HK\$17.00	HK\$19.00	HK\$15.50	HK\$20.00	HK\$17.50		
8	Dinner	HK\$32.50	HK\$43.00	HK\$28.00	HK\$25.00	HK\$36.00		
9	Snack	HK\$12.00	HK\$7.00	HK\$18.00	HK\$6.00	HK\$17.00		
10								
11	Your Spending on:	<b>Total Spending</b>	Description	of cell refere	nce			
12	Monday lunch	HK\$23.00	one cell					
13	Monday after lunch	HK\$61.50	Part of a co	olumn				
14	Dinner of Tue, Wed and Thur	HK\$96.00	Part of a ro	w				
15	Entire week	HK\$523.50	Matrix of c	ells				
16	Food on or over HK\$30	HK\$141.50	-					
17	Wednesday	HK\$101.50	-					
18	Dinner only	HK\$164.50						
19	Thursday and Friday	HK\$200.50	Multiple co	lumns				
20	Lunch, tea and dinner	HK\$372.00	Multiple ro	ws				

-=SUM(B6)

### Range References – Part of a Column

- 1	A	В	С	D	E	F		
4			C	U	E	г		
1	Referring to a Range of							
	This example shows how you c	_		_				
	The SUM() function is used to	demonstrate this	by calculati	ng the spendi	ing of food f	rom the		
2	table in various ways.							
3								
4		Monday	Tuesday	Wednesday		Friday		
5	Breakfast	HK\$18.00	HK\$20.00	HK\$18.00	HK\$17.50	HK\$18.00		
6	Lunch	HK\$23.00	HK\$30.00	HK\$22.00	HK\$22.00	HK\$21.50		
7	Tea	HK\$17.00	HK\$19.00	HK\$15.50	HK\$20.00	HK\$17.50		
8	Dinner	HK\$32.50	HK\$43.00	HK\$28.00	HK\$25.00	HK\$36.00		
9	Snack	HK\$12.00	HK\$7.00	HK\$18.00	HK\$6.00	HK\$17.00		
10								
11	Your Spending on:	<b>Total Spending</b>	Description	of cell refere	nce			
12	Monday lunch	HK\$23.00	One cell					
13	Monday after lunch	HK\$61.50	Part of a co	olumn				
14	Dinner of Tue, Wed and Thur	HK\$96.00	Part of a ro	W				
15	Entire week	HK\$523.50	Matrix of c	ells				
16	Food on or over HK\$30	HK\$141.50	Set of unre	lated cells				
17	Wednesday	HK\$101.50	Entire colur	nn				
18	Dinner only	HK\$164.50	Entire row					
19	Thursday and Friday	HK\$200.50	Multiple co	lumns				
20	Lunch, tea and dinner	HK\$372.00	Multiple ro	ws				

 $\sim$  =SUM(B7:B9)

### Range References – Part of a Row

	А	В	С	D	Е	F
1	Referring to a Range of	of Cells				
	This example shows how you c	an refer to a rar	ige of cells in	n formulas.		
	The SUM() function is used to	demonstrate this	by calculati	ng the spendi	ing of food f	rom the
2	table in various ways.					
3						
4		Monday	Tuesday	Wednesday	Thursday	Friday
5	Breakfast	HK\$18.00	HK\$20.00	HK\$18.00	HK\$17.50	HK\$18.00
6	Lunch	HK\$23.00	HK\$30.00	HK\$22.00	HK\$22.00	HK\$21.50
7	Tea	HK\$17.00	HK\$19.00	HK\$15.50	HK\$20.00	HK\$17.50
8	Dinner	HK\$32.50	HK\$43.00	HK\$28.00	HK\$25.00	HK\$36.00
9	Snack	HK\$12.00	HK\$7.00	HK\$18.00	HK\$6.00	HK\$17.00
10						
11	Your Spending on:	Total Spending	Description	of cell refere	nce	
12	Monday lunch	HK\$23.00	One cell			
13	Monday after lunch	HK\$61.50	Part of a co	iumn		
14	Dinner of Tue, Wed and Thur	HK\$96.00	Part of a ro	w		
15	Entire week	HK\$523.50	Matrix of c	ells		
16	Food on or over HK\$30	HK\$141.50	Set of unre	lated cells		
17	Wednesday	HK\$101.50	Entire colur	nn		
18	Dinner only	HK\$164.50	Entire row			
19	Thursday and Friday	HK\$200.50	Multiple co	lumns		
20	Lunch, tea and dinner	HK\$372.00	Multiple ro	ws		

 $\sim$  =SUM(C8:E8)

### Range References – Matrix of Cells

1	А	В	С	D	E	F		
1	Referring to a Range of	of Cells						
	This example shows how you c	an refer to a rav	ige of cells ii	n formulas.				
	The SUM() function is used to	demonstrate this	by calculati	ng the spendi	ing of food f	rom the		
2	table in various ways.							
3								
4		Monday	Tuesday	Wednesday	Thursday	Friday		
5	Breakfast	HK\$18.00	HK\$20.00	HK\$18.00	HK\$17.50	HK\$18.00		
6	Lunch	HK\$23.00	HK\$30.00	HK\$22.00	HK\$22.00	HK\$21.50		
7	Tea	HK\$17.00	HK\$19.00	HK\$15.50	HK\$20.00	HK\$17.50		
8	Dinner	HK\$32.50	HK\$43.00	HK\$28.00	HK\$25.00	HK\$36.00		
9	Snack	HK\$12.00	HK\$7.00	HK\$18.00	HK\$6.00	HK\$17.00		
10								
11	Your Spending on:	<b>Total Spending</b>	Description	of cell refere	nce			
12	Monday lunch	HK\$23.00	One cell					
13	Monday after lunch	HK\$61.50	Part of a co	lump				
14	Dinner of Tue, Wed and Thur	HK\$96.00	Part of a ro	w				
15	Entire week	HK\$523.50	Matrix of c	ells				
16	Food on or over HK\$30	HK\$141.50	Set of unre	ated cells				
17	Wednesday	HK\$101.50	Entire column					
18	Dinner only	HK\$164.50	Entire row					
19	Thursday and Friday	HK\$200.50	Multiple co	lumns				
20	Lunch, tea and dinner	HK\$372.00	Multiple ro	ws				

 $\sim$  =SUM(B5:F9)

#### Range References – Set of Unrelated Cells

1	А	В	С	D	E	F		
1	Referring to a Range of	of Cells						
	This example shows how you c	an refer to a rav	ige of cells ii	n formulas.				
	The SUM() function is used to	demonstrate this	by calculati	ng the spendi	ing of food f	rom the		
2	table in various ways.							
3								
4	Monday Tuesday Wednesday Thursday Fric							
5	Breakfast	HK\$18.00	HK\$20.00	HK\$18.00	HK\$17.50	HK\$18.00		
6	Lunch	HK\$23.00	HK\$30.00	HK\$22.00	HK\$22.00	HK\$21.50		
7	Tea	HK\$17.00	0 HK\$19.00 HK\$15.50 HK\$20.00 H					
8	Dinner	HK\$32.50	HK\$43.00	HK\$28.00	HK\$25.00	HK\$36.00		
9	Snack	HK\$12.00	HK\$7.00	HK\$18.00	HK\$6.00	HK\$17.00		
10								
11	Your Spending on:	<b>Total Spending</b>	Description	of cell refere	nce			
12	Monday lunch	HK\$23.00	One cell					
13	Monday after lunch	HK\$61.50	Part of a co	lumn				
14	Dinner of Tue, Wed and Thur	HK\$96.00	Part of a ro	W				
15	Entire week	HK\$523.50	Matrix of a	elis				
16	Food on or over HK\$30	HK\$141.50	Set of unre	lated cells				
17	Wednesday	HK\$101.50	Entire column					
18	Dinner only	HK\$164.50	Entire row					
19	Thursday and Friday	HK\$200.50	Multiple co	lumns				
20	Lunch, tea and dinner	HK\$372.00	Multiple ro	ws				

=SUM(B8,C6,C8,F8)

### Range References – Entire Column

1	А	В	С	D	Е	F
1	Referring to a Range of					
	This example shows how you can refer to a range of cells i			formulas.		
	The SUM() function is used to	demonstrate this	by calculati	ng the spend	ng of food f	rom the
2	table in various ways.					
3						
4		Monday	Tuesday	Wednesday	Thursday	Friday
5	Breakfast	HK\$18.00	HK\$20.00	HK\$18.00	HK\$17.50	HK\$18.00
6	Lunch	HK\$23.00	HK\$30.00	HK\$22.00	HK\$22.00	HK\$21.50
7	Tea	HK\$17.00	HK\$19.00	HK\$15.50	HK\$20.00	HK\$17.50
8	Dinner	HK\$32.50	HK\$43.00	HK\$28.00	HK\$25.00	HK\$36.00
9	Snack	HK\$12.00	HK\$7.00	HK\$18.00	HK\$6.00	HK\$17.00
10						
11	Your Spending on:	<b>Total Spending</b>	Description	of cell refere	nce	
12	Monday lunch	HK\$23.00	One cell			
13	Monday after lunch	HK\$61.50	Part of a co	lumn		
14	Dinner of Tue, Wed and Thur	HK\$96.00	Part of a ro	W		
15	Entire week	HK\$523.50	Matrix of c	as		
16	Food on or over HK\$30	HK\$141.50	Set of unre	ated cells		
17	Wednesday	HK\$101.50	Entire colur	nn		
18	Dinner only	HK\$164.50	Entire row			
19	Thursday and Friday	HK\$200.50	Multiple co	umns		
20	Lunch, tea and dinner	HK\$372.00	Multiple ro	vs		

 $\rightarrow$  =SUM (D:D)

### Range References – Entire Row

		_						
	A	В	С	D	Е	F		
1	Referring to a Range of	of Cells						
	This example shows how you c	an refer to a rai	nge of cells in	n formulas.				
	The SUM() function is used to	demonstrate this	by calculati	ing the spendi	ing of food f	rom the		
2	table in various ways.							
3								
4		Monday	Tuesday	Wednesday	Thursday	Friday		
5	Breakfast	HK\$18.00	HK\$20.00	HK\$18.00	HK\$17.50	HK\$18.00		
6	Lunch	HK\$23.00	HK\$30.00	HK\$22.00	HK\$22.00	HK\$21.50		
7	Tea	HK\$17.00	0 HK\$19.00 HK\$15.50 HK\$20.00 HK\$					
8	Dinner	HK\$32.50	HK\$43.00	HK\$28.00	HK\$25.00	HK\$36.00		
9	Snack	HK\$12.00	HK\$7.00	HK\$18.00	HK\$6.00	HK\$17.00		
10								
11	Your Spending on:	<b>Total Spending</b>	Description	of cell refere	nce			
12	Monday lunch	HK\$23.00	One cell					
13	Monday after lunch	HK\$61.50	Part of a co	olumn				
14	Dinner of Tue, Wed and Thur	HK\$96.00	Part of a ro	w				
15	Entire week	HK\$523.50	Matrix of c	ells				
16	Food on or over HK\$30	HK\$141.50	Set of unre	ated cells				
17	Wednesday	HK\$101.50	Entire colur	nn				
18	Dinner only	HK\$164.50	Entire row					
19	Thursday and Friday	HK\$200.50	Multiple co	lumns				
20	Lunch, tea and dinner	HK\$372.00	Multiple ro	ws				

 $\rightarrow = SUM(8:8)$ 

# Range References – Multiple Columns

1	А	В	С	D	Е	F
1	Referring to a Range of	of Cells				
	This example shows how you c	an refer to a rar	ige of cells ir	n formulas.		
	The SUM() function is used to	ng the spend	ng of food fi	rom the		
2	table in various ways.					
3						
4		Monday	Tuesday	Wednesday	Thursday	Friday
5	Breakfast	HK\$18.00	HK\$20.00	HK\$18.00	HK\$17.50	HK\$18.00
6	Lunch	HK\$23.00	HK\$30.00	HK\$22.00	HK\$22.00	HK\$21.50
7	Tea	HK\$17.00	HK\$19.00	HK\$15.50	HK\$20.00	HK\$17.50
8	Dinner	HK\$32.50	HK\$43.00	HK\$28.00	HK\$25.00	HK\$36.00
9	Snack	HK\$12.00	HK\$7.00	HK\$18.00	HK\$6.00	HK\$17.00
10						
11	Your Spending on:	<b>Total Spending</b>	Description	of cell refere	nce	
12	Monday lunch	HK\$23.00	One cell			
13	Monday after lunch	HK\$61.50	Part of a co	lumn		
14	Dinner of Tue, Wed and Thur	HK\$96.00	Part of a ro	w		
15	Entire week	HK\$523.50	Matrix of ce	ells		
16	Food on or over HK\$30	HK\$141.50	Set of unrel	lated cells		
17	Wednesday	HK\$101.50	Entire column			
18	Dinner only	HK\$164.50	Entire row			
19	Thursday and Friday	HK\$200.50	Multiple co	lumns		
20	Lunch, tea and dinner	HK\$372.00	Multiple ro	ws		

/=SUM(E:F)

# Range References – Multiple Rows

	А	В	С	D	E	F		
1	Referring to a Range of	of Cells						
	This example shows how you c	an refer to a ran	ige of cells in	ı formulas.				
	The SUM() function is used to	demonstrate this	by calculati	ng the spendi	ing of food f	rom the		
2	table in various ways.							
3								
4		Monday	Tuesday	Wednesday	Thursday	Friday		
5	Breakfast	HK\$18.00	HK\$20.00	HK\$18.00	HK\$17.50	HK\$18.00		
6	Lunch	HK\$23.00	HK\$30.00	HK\$22.00	HK\$22.00	HK\$21.50		
7	Tea	HK\$17.00	HK\$19.00	HK\$15.50	HK\$20.00	HK\$17.50		
8	Dinner	HK\$32.50	HK\$43.00	HK\$28.00	HK\$25.00	HK\$36.00		
9	Snack	HK\$12.00	HK\$7.00	HK\$18.00	HK\$6.00	HK\$17.00		
10								
11	Your Spending on:	Total Spending	Description	of cell refere	nce			
12	Monday lunch	HK\$23.00	One cell					
13	Monday after lunch	HK\$61.50	Part of a co	lumn				
14	Dinner of Tue, Wed and Thur	HK\$96.00	Part of a ro	w				
15	Entire week	HK\$523.50	Matrix of c	ells				
16	Food on or over HK\$30	HK\$141.50	Set of unrel	ated cells				
17	Wednesday	HK\$101.50	50 Entire column					
18	Dinner only	HK\$164.50	Entire row					
19	Thursday and Friday	HK\$200.50	Multiple col	lumns				
20	Lunch, tea and dinner	HK\$372.00	Multiple ro	ws				

 $\nearrow = SUM(6:8)$