Workshop 1:
Programming Basic

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Task 1.1 – Your First Python Program

1. Create a Python program that reads in two numeric values from user.
2. Store the values into two variables with meaningful names.
3. Multiply the two values using the two variables.
4. Print out the result after multiplication.
5. Test run the program and check if it tallies with your own calculation.

```
Enter the first number:10
Enter the second number:30
The result after multiplication is 300
```

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Task 1.2 – Forex Converter

Create a Python program with the following specifications:
- Print out a forex menu with appropriate wordings.
- Display the exchange rates below to user:
  - SGD to USD: 0.73829
  - SGD to MYR: 3.05657
  - SGD to EUR: 0.66323
  - SGD to GBP : 0.55172
  - SGD to AUD: 1.07305
- Get the value to convert from user.
- Display the output showing the result to include all converted values.

```
Welcome to Forex calculator
    The rates are as shown below:
    SGD to USD: 0.73829
    SGD to MYR: 3.05657
    SGD to EUR: 0.66323
    SGD to GBP : 0.55172
    SGD to AUD: 1.07305
Enter SGD value to convert:100
USD values = 73.829
MYR values = 305.657
EUR values = 66.323
GBP values = 55.172
AUD values = 107.305
```

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Task 1.3 – Ratio Analysis

StarHub Ltd reported weaker financial year in 2018. Given the financial statements, analyze the financial health of the company using appropriate ratio analysis formulas. Use Python codes to define a few relevant variables with values extracted from financial statements then use simple mathematical operators (+, -, *, /) to compute the ratios according to the formulas. Print out a text summary describing its performance together with calculated ratios to support your summary. A snapshot of formulas are extracted in the following slides. You can pick any appropriate ratios.

Source: https://www.edupristine.com/blog/ratio-analysis-ratios-formulae

Assume the market share price for StarHub is $1.43 per unit. Pick a few financial ratios for your working.

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Some ratio formulas

Profitability Ratios

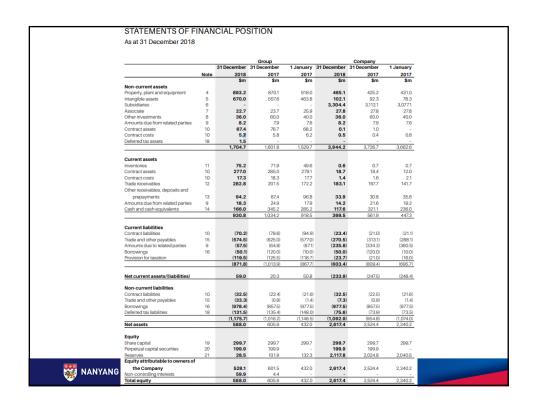| S. No.	RATIOS	FORMULAS
1	Gross Profit Ratio	Gross Profit/Net Sales X 100
2	Operating Cost Ratio	Operating Cost/Net Sales X 100
3	Operating Profit ratio	Operating Profit/Net Sales X 100
4	Net Profit Ratio	Operating Profit/Net Sales X 100
5	Return on Investment Ratio	Net Profit After Interest And Taxes/ Shareholders Funds or Investments X 100
6	Return on Capital Employed Ratio	Net Profit after Taxes/ Gross Capital Employed X 100
7	Earnings Per Share Ratio	Net Profit After Tax & Preference Dividend /No of Equity Shares
8	Dividend Pay Out Ratio	Dividend Per Equity Share/Earning Per Equity Share X 100
9	Earning Per Equity Share	Net Profit after Tax & Preference Dividend / No. of Equity Share
10	Dividend Yield Ratio	Dividend Per Share/ Market Value Per Share X 100
11	Price Earnings Ratio	Market Price Per Share Equity Share/ Earning Per Share X 100
12	Net Profit to Net Worth Ratio	Net Profit after Taxes / Shareholders Net Worth X 100

Liquidity Ratios

S. No.	RATIOS	FORMULAS
1	Current Ratio	Current Assets/Current Liabilities
2	Quick Ratio	Liquid Assets/Current Liabilities
3	Absolute Liquid Ratio	Absolute Liquid Assets/Current Liabilities

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STATEMENTS OF FINANCIAL POSITION
As at 31 December 2018

		Group			Company		
		31 December	31 December	1 January	31 December	31 December	1 January
	Note	2018	2017	2017	2018	2017	2017
		$m	$m	$m	$m	$m	$m
Non-current assets							
Property, plant and equipment	4	**893.2**	870.1	918.0	**465.1**	425.2	431.0
Intangible assets	5	**670.0**	557.6	463.8	**102.1**	92.3	78.3
Subsidiaries	6	–	–	–	**3,304.4**	3,112.1	3,077.1
Associate	7	**22.7**	23.7	25.9	**27.8**	27.8	27.8
Other investments	8	**36.0**	60.0	40.0	**36.0**	60.0	40.0
Amounts due from related parties	9	**8.2**	7.9	7.6	**8.2**	7.9	7.6
Contract assets	10	**67.4**	76.7	68.2	**0.1**	1.0	–
Contract costs	10	**5.7**	5.8	6.2	**0.5**	0.4	0.8
Deferred tax assets	18	**1.5**	–	–	–	–	–
		1,704.7	1,601.8	1,529.7	**3,944.2**	3,726.7	3,662.6
Current assets							
Inventories	11	**75.2**	71.9	49.6	**0.6**	0.7	0.7
Contract assets	10	**277.0**	285.0	279.1	**18.7**	18.4	12.0
Contract costs	10	**17.3**	18.3	17.7	**1.4**	1.6	2.1
Trade receivables	12	**282.8**	201.5	172.2	**183.1**	167.7	141.7
Other receivables, deposits and							
prepayments	13	**94.2**	87.4	96.8	**33.9**	30.8	35.6
Amounts due from related parties	9	**18.3**	24.9	17.9	**14.2**	21.6	19.2
Cash and cash equivalents	14	**166.0**	345.2	285.2	**117.6**	321.1	236.0
		930.8	1,034.2	918.5	**369.5**	561.9	447.3
Current liabilities							
Contract liabilities	10	**(70.2)**	(78.6)	(94.9)	**(23.4)**	(21.0)	(21.1)
Trade and other payables	15	**(574.5)**	(625.0)	(577.0)	**(270.5)**	(313.1)	(288.1)
Amounts due to related parties	9	**(57.5)**	(64.8)	(67.1)	**(235.8)**	(334.3)	(360.5)
Borrowings	16	**(50.1)**	(120.0)	(10.0)	**(50.0)**	(120.0)	(10.0)
Provision for taxation		**(119.5)**	(125.5)	(118.7)	**(23.7)**	(21.0)	(16.0)
		(871.8)	(1,013.9)	(867.7)	**(603.4)**	(809.4)	(695.7)
Net current assets/(liabilities)		**59.0**	20.3	50.8	**(233.9)**	(247.5)	(248.4)
Non-current liabilities							
Contract liabilities	10	**(32.5)**	(22.4)	(21.6)	**(32.5)**	(22.5)	(21.6)
Trade and other payables	15	**(33.3)**	(0.9)	(1.4)	**(7.3)**	(0.9)	(1.4)
Borrowings	16	**(978.4)**	(857.5)	(977.5)	**(977.5)**	(857.5)	(977.5)
Deferred tax liabilities	18	**(131.5)**	(135.4)	(148.0)	**(75.6)**	(73.9)	(73.5)
		(1,175.7)	(1,016.2)	(1,148.5)	**(1,092.9)**	(954.8)	(1,074.0)
Net assets		**588.0**	605.9	432.0	**2,617.4**	2,524.4	2,340.2
Equity							
Share capital	19	**299.7**	299.7	299.7	**299.7**	299.7	299.7
Perpetual capital securities	20	**199.9**	199.9	–	**199.9**	199.9	–
Reserves	21	**28.5**	101.9	132.3	**2,117.8**	2,024.8	2,040.5
Equity attributable to owners of							
the Company		**528.1**	601.5	432.0	**2,617.4**	2,524.4	2,340.2
Non-controlling interests		**59.9**	4.4	–	–	–	–
Total equity		**588.0**	605.9	432.0	**2,617.4**	2,524.4	2,340.2

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CONSOLIDATED INCOME STATEMENT
Year ended 31 December 2018

		Group	
	Note	2018 $m	2017 $m
Revenue	22	2,362.0	2,410.7
Operating expenses	23	(2,089.7)	(2,052.7)
Other income	24	1.2	4.4
Profit from operations		273.5	362.4
Finance income	25	3.2	3.7
Finance expense	25	(30.2)	(29.9)
Net finance costs		(27.0)	(26.2)
Non-operating loss	26	–	(0.7)
Share of loss of associate, net of tax	7	(1.0)	(2.2)
Profit before taxation		245.5	333.3
Taxation	27	(44.9)	(59.8)
Profit for the year		200.6	273.5
Profit attributable to:			
Owners of the Company		201.7	272.9
Non-controlling interests		(1.1)	0.6
Profit for the year		200.6	273.5
Earnings per share (in cents)			
- Basic	28	11.2	15.5
- Diluted	28	11.2	15.5
EBITDA	29	567.3	642.8

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CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME
Year ended 31 December 2018

	Group	
	2018 $m	2017 $m
Profit for the year	200.6	273.5
Other comprehensive income		
Items that will not be reclassified to profit or loss:		
Net change in fair value of equity investments at fair value through other comprehensive income ("FVOCI"),		
net of taxation	(24.0)	–
	(24.0)	–
Items that are or may be reclassified subsequently to profit or loss:		
Net change in fair value of available-for-sale financial assets, net of taxation	–	5.6
Foreign currency translation differences	(0.1)	0.1
Effective portion of changes in fair value of cash flow hedges, net of taxation	9.9	(14.5)
	9.8	(8.8)
Other comprehensive loss for the year, net of taxation	(14.2)	(8.8)
Total comprehensive income for the year	186.4	264.7
Total comprehensive income attributable to:		
Owners of the Company	187.5	264.1
Non-controlling interests	(1.1)	0.6
Total comprehensive income for the year	186.4	264.7

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CONSOLIDATED CASH FLOW STATEMENT
Year ended 31 December 2018

	2018 $m	2017 $m
Cash flow from operating activities		
Profit before taxation	245.5	333.3
Adjustments for:		
Depreciation and amortisation	291.2	280.4
Income related grants	(1.1)	(4.4)
Share-based payments	1.0	3.4
Net finance costs	27.0	26.2
Non-operating loss	–	0.7
Share of loss of associate, net of tax	1.0	2.2
Others	3.7	1.9
	568.3	643.7
Changes in:		
Inventories	(2.0)	(22.3)
Contract assets	32.2	(14.4)
Contract costs	1.2	(0.2)
Trade receivables	(67.3)	(24.7)
Other receivables, deposits and prepayments	1.8	3.0
Contract liabilities	1.4	(15.4)
Trade and other payables	(68.2)	27.8
Amounts due from related parties	31.7	(8.0)
Amounts due to related parties	(12.2)	(7.0)
Cash generated from operations	486.9	582.5
Income tax paid	(68.6)	(65.3)
Net cash from operating activities	418.3	517.2
Cash flow from investing activities		
Interest received	3.1	3.4
Proceeds from disposal of property, plant and equipment and intangible assets	0.4	1.9
Purchase of property, plant and equipment and intangible assets	(272.8)	(295.9)
Purchase of equity investments	–	(15.0)
Acquisition of subsidiary, net of cash acquired (Note 33)	(65.4)	(22.6)
Repayment of loan from an associate	–	1.1
Net cash used in investing activities	(334.7)	(327.1)
Cash flow from financing activities		
Net proceeds from issue of perpetual capital securities	–	199.6
Grants received	2.0	8.2
Proceeds/(Repayment) of bank loans	50.0	(10.0)
Dividend paid to owners of the Company	(276.9)	(293.9)
Perpetual capital securities distribution paid	(7.9)	(4.0)
Interest paid	(30.6)	(30.0)
Net cash used in financing activities	(263.4)	(130.1)
Net change in cash and cash equivalents	(179.8)	60.0
Cash and cash equivalents at beginning of year	345.2	285.2
Cash and cash equivalents at end of year (Note 14)	165.4	345.2

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