TOI-OHOMAI Institute of Technology	**COMP.5202** **Fundamentals of Programming and Problem Solving**	**Practical Exercises**

"if" Practise

1. Comparing Integers

Write a program that asks the user to enter two numbers (integers), obtains them from the user and displays the larger number followed by the words "is larger". If the numbers are equal, display the message "These numbers are equal." (Do not concern yourself with checking inputs for NaN).

2. Guess My Number

Write a program with two variables myNum and userNum. The program will ask the user to guess your number (integer) which is somewhere between 1 and 10, then output whether or not they guessed the right number.
Extension: Add to this by telling them that if they guess wrong, whether their guess is too high or too low.

3. Grade

Write a program which asks the user to enter in a final mark (a whole number out of 100) for their course. Then based on their mark tell them their grade as shown below:

Marks	**Grade**	(These grades are not used by Toi Ohomai)
90 to 100	A+	
80 to 89	A	
70 to 79	B+	
60 to 69	B	
50 to 59	C	
40 to 49	D	
0 to 39	F	

Think about how you would approach it before looking at the logic sequence on the next page.

Also think about how you would best test this logic, ie. what marks would you enter into the program to make sure it works properly?

How could you use this logic sequence?

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Mark greater than or equal to 90, Grade = A+

Mark greater than or equal to 80, Grade = A

Mark greater than or equal to 70, Grade = B+

Mark greater than or equal to 60, Grade = B

Mark greater than or equal to 50, Grade = C

Mark less than 50, Grade = F
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Extension: Display warning messages if the marks entered is greater than 100 or less than 0.

4. Odd or Even

Write a program that reads a number (integer), then determines and displays whether it's odd or even.

Hint: what operator can you use?
An even number divided by 2 leaves a remainder of 0.

5. New PIN Number Program

Write a program asking the user to enter a 4-digit PIN number.
Have the program check that the PIN is greater or equal to 1000 but less than or equal to 9999, if it is not then output an error message saying "This PIN number is not within the right parameters".

If the PIN is within that range then prompt the user to re-enter their PIN, then get the program to check that it matches the first entry.
If they do match, then output the message "Your PIN has been set!" If they do not match then you need to output an error message saying "Error! Your PIN numbers did not match. Your PIN was not set".

6. Palindrome Program:

Write a program that asks the user to think of a 3 letter palindrome and enter it in 1 letter at a time (ie. ask for the 1st letter, then the 2nd letter then the 3rd).
Hint – this should be 3 string variables.

First have the program first check the middle letter is a vowel (a e i o u), if it is not then output an error message saying "This is not an actual word!".

If it is a vowel, then have the program check that the 1st letter is the same as the 3rd letter, if it is then output the message "Well done, your word is a Palindrome!" If they are not the same then output an error message saying "This word is NOT a Palindrome!"