**Learning Activity 5 – Control Structures and Functions**

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| Activity | * What is the output y in the following:   z=5  if(z<0) y=z\*3 else y=z\*5   * What is the output n in the following:   z='i'  if (z=='a') n=1 else  if (z=='e') n=2 else  if (z=='i') n=3 else  if (z=='o') n=4 else n=5   * Save the script as **Activity 2\_6\_2** |
| Activity | * Using a while loop starting with x = 0, display all the numbers up to 50 but skipping numbers 10, 25 and 35. * Using a while loop, create a multiplication table of 4 with the first value being 4 and the last one being 100. * Use a while loop to investigate the value of n such that product of   1 x 2 x 3 x 4 x … x n  just crosses 1 million.   * Save the updated script as **Activity 2\_6\_3\_1** |
| Activity | * Using a repeat loop, print all the numbers ranging from 1 to 50. * Using a repeat loop, print all the even numbers in the sequence 1 to 50., * *Write a repeat loop that iterates over the numbers 1 to 10 and prints the cube of each number.* * Save the updated script as **Activity 2\_6\_3\_2** |
| Activity | * *Write a for() loop that prints all the letters in a vector containing the following letters "q", "w", "e", "r", "z" and "c".* * *Write a for() loop that prints the first five numbers of this vector: 7, 4, 3, 8, 9, 25, 10, 22 and 37* * *Use a for() loop to re-implement the example in section 2.6.3.2 and consequently displays the same output.* * Save the updated script as **Activity 2\_6\_3\_3** |
| Activity | * *Create a function that returns the difference between two numbers. The function should subtract the smaller number from the bigger one.* * *Create a function that given an alpha numeric vector, it keeps only the numbers. For example, if the input is a vector w="b", "d", "8", "5", "q" , the function will return w= “8”, “5”.* * *Create a function returns the grade of a student given his mark. The grading scheme is given in the table below:*  |  |  | | --- | --- | | **Mark** | **Award** | | Mark >= 80 | A | | Mark >= 60 & < 80 | B | | Mark >= 40 & < 60 | C | | Mark < 40 | D |  * Write appropriate calls to test the above functions. * Save your script as **Activity 2\_7** |