Tutorial 2

1. Write a program in Python that can find the factorial of any given number. Your program should take input as an integer from the user and verify if user has entered a positive integer value using `isnumeric()`. The steps could be:

   1. If the number is less than Zero then return with an error message.

   2. Check to see if the number is Zero–if it is then the answer is 1 and print this out.

   3. Otherwise use a loop to generate the result and print it out.

2. Consider dataset `height_weight.csv`. There are five variables in this dataset. They are

   - id: identity of the subject
   - gender: gender of the subject
   - height: height of the subject in cm
   - weight: weight of the subject in kg
   - siblings: number of siblings of the subject

   (a) Create a dataset in Python called "data" by importing the file `height_weight.csv` into Python.

   (b) Count the number of female subjects in the dataset.

   (c) Identify individuals whose heights are greater than 183 cm and what are their weight?

   (d) Another dataset in the file `test.csv` is given, which contains the test scores of the same set of subjects as in the dataset `height_weight.csv`. Import this dataset into Python.

   (e) Create a new variable called "grade" which is a categorical variable defined as: (1) grade ="A" if test ≥ 80, (2) grade = "B" if $70 \leq$ text < 80, (3) grade ="C" if $60 \leq$ test < 70, (4) grade ="D" if $50 \leq$ test < 60, (5) grade = "F" if test <50.

   (f) Create a new data which have all 7 variables: 5 variables as given in `height_weight.csv` and 2 variables "test" and "grade", then save this dataset as a .csv file named `height_weight_test.csv`.