Lab Exercise 6:

Q1: Use the concepts learnt so far in *Signals and Systems* to perform pattern matching on the given signal. Given a complex input signal and a search pattern, determine if the pattern exists within the signal. Write a program to implement this functionality for **both single match and multiple match** scenarios for

   a) simple input signal (as shown in reference example)   (5M)
   b) noisy input signal (ex: **x = x+ np.random.normal(0,0.1,len(x))**, where x is the original input signal)   (5M)
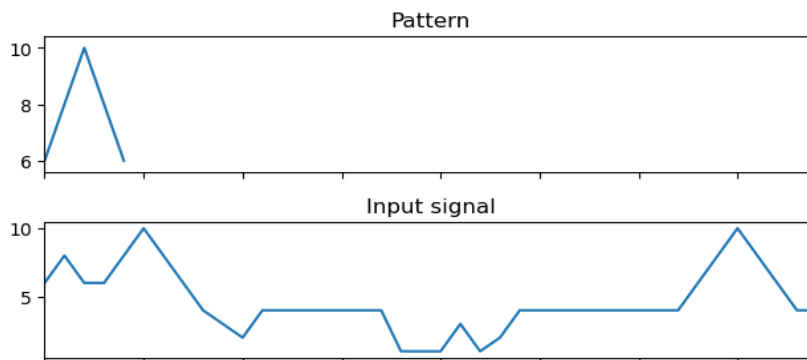
Execute the program and display the output for the above cases. Assume your own **inputs for** search *pattern* **and** *input* **signals to demonstrate the given cases**.

Example Output (for reference)

search pattern = 6,8,10,8,6
input=   6,8,6,**6,8,10,8,6**,4,3,2,4,4,4,4,4,4,4,1,1,
          1,3,1,2,4,4,4,4,4,4,4,4,4,**6,8,10,8,6**,4,4

Pattern found starting at location(s): **[4, 34]**

Submission details:
Program, output for single and multi-match scenarios for both simple and noisy signals