**Assignment 4**

For each of the following functions code, calculate T(n), the time it takes to solve a problem of size n, and find the corresponding Big-O running time:

1. Sequential search

|  |  |
| --- | --- |
|  | def sequentialSearch(alist, item): |
| pos = 0 |
| found = False |
|  |
| while pos < len(alist) and not found: |
| if alist[pos] == item: |
| found = True |
| else: |
| pos = pos+1 |
|  |
| return found |

1. Bubble sort

def bubbleSort(alist):

 for passnum in range(len(alist)-1,0,-1):

for i in range(passnum):

if alist[i]>alist[i+1]:

temp = alist[i]

alist[i] = alist[i+1]

alist[i+1] = temp

1. Binary search

def binarySearch (alist, item):

first=0

last=len(alist)-1

found=False

While first<=last and not found

midpoint=(first+last)/2

If alist[midpoint]==item:

found=True

else:

if item<alist[midpoint]:

last=midpoint-1

else:

first=midpoint+1

return found

1. Write a Python program that takes user input of a word and determines if it is a Palindrome or not using Stacks.