```
def recursive_sequence(n):
    if n == 1:
        return 1
    else:
        return n-1 + recursive_sequence(n-1)

while True:
    n = int(input("Enter the position of the number in the sequence (-1 to exit): "))
    if n == -1:
        break
    result = recursive_sequence(n)
    print(f"The number at position {n} in the sequence is {result}")
```

Data Structures and Algorithms IT2070

Year two Semester two 2021 September

Online Examination

Sri Lanka Institute of Information Technology

Time: 20 minutes

Paper Number 4 (20 marks)

Consider the following recursive sequence of numbers:

```
1,2,4,7,11. . . .
```

a) Design a **recursive** Python function to produce the above output when a user enters an integer from the keyboard.
b) Use the loop to run the program and display the correct output until user input -1.
c) Sample Output:

Enter number:1
Output:1
Enter number:2
Output:2
Enter number:3
Output:4
Enter number: -1
Output: Finished

Note: 0 marks for non-recursive solutions

Upload your answer using given in the course web link "Paper Number 4"

Grading Sheet:

1) Program is compiling. **2 marks**
2) Program is running successfully. **2 marks**
3) Program takes the input number as integer. **2 marks**
4) Correct implementation recursive function. **6 marks**
5) Display the output correctly 2 **marks**
6) Use of loop correctly 4 **marks**
7) Include comments and properly indented. **2 marks**
8) Plagiarism testing tool results: ……..