Assignment -1

1. 4 3 2 1 0 9 8 7 6 5

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Element | Push | Pop | Output | Explanation |
| 0 | Push 0 |  |  | 0 is pushed into stack |
| 1 | Push 1 |  |  | 1 is pushed into stack |
| 2 | Push 2 |  |  | 2 is pushed into stack |
| 3 | Push 3 |  |  | 3 is pushed into stack |
| 4 | Push 4 |  |  | 4 is pushed into stack |
|  |  | Pop 4 | 4 | 4 will be popped out |
|  |  | Pop 3 | 4 3 | 3 will be popped out |
|  |  | Pop 2 | 4 3 2 | 2 will be popped out |
|  |  | Pop 1 | 4 3 2 1 | 1 will be popped out |
|  |  | Pop 0 | 4 3 2 1 0 | 0 will be popped out |
| 5 | Push 5 |  |  | 5 is pushed into stack |
| 6 | Push 6 |  |  | 6 is pushed into stack |
| 7 | Push 7 |  |  | 7 is pushed into stack |
| 8 | Push 8 |  |  | 8 is pushed into stack |
| 9 | Push 9 |  |  | 9 is pushed into stack |
|  |  | Pop 9 | 4 3 2 1 0 9 | 9 will be popped out |
|  |  | Pop 8 | 4 3 2 1 0 9 8 | 8 will be popped out |
|  |  | Pop 7 | 4 3 2 1 0 9 8 7 | 7 will be popped out |
|  |  | Pop 6 | 4 3 2 1 0 9 8 7 6 | 6 will be popped out |
|  |  | Pop 5 | 4 3 2 1 0 9 8 7 6 5 | 5 will be popped out |
|  |  |  |  |  |

Required Sequence is obtained. So, this is possible.

1. 4 6 8 7 5 3 2 9 0 1

b is not possible because after popping 9, the top element is 1 which gets popped but in sequence it is 0.

1. 2 5 6 7 4 8 9 3 1 0

c is possible

1. 4 3 2 1 0 5 6 7 8 9

d is possible

1. 1 2 3 4 5 6 9 8 7 0

e is possible

1. 0 4 6 5 3 8 1 7 2 9

f is not possible because after popping 8, the top element is 7 which gets popped but in sequence it is 1.

1. 1 4 7 9 8 6 5 3 0 2

g is not possible because after popping 3, the top element is 2 which gets popped but in sequence it is 0.

1. 2 1 4 3 6 5 8 7 9 0

h is possible