Stack-1

Assignment Solution

PW SKILLS

1. **You have two stack and 1,2,3,4,5 values and you have pushed all these values to S1 (in the order 1,2,3,4,5) and then you took 2 elements from top and inserted into S2 , then pop 1 element from S1 and then take top of S2 and insert into S1. What is the second top element in S1.**

a) [3]
b) [2]
c) [1]
d) [5]

The answer is [3]

2. **Remove kth element from top in a given stack.**

Hint : Use another stack, just like insertion questions.

Solution

```
def remove_kth_element(stack, k):
    if k > len(stack) or k ⩽ 0:
        raise IndexError("k is out of bounds")

    temp_stack = []
    # Remove top k-1 elements and store in temp_stack
    for _ in range(k-1):
        temp_stack.append(stack.pop())

    # Remove the kth element
    stack.pop()

# Push back the elements from temp_stack to the original stack
    while temp_stack:
        stack.append(temp_stack.pop())

    return stack

# Example usage:
stack = [1, 2, 3, 4, 5]
k = 3
new_stack = remove_kth_element(stack, k)
print("Stack after removing the kth element:", new_stack)
```

3. **What does this function do ?**

```
def fun(n):
    stack = []
    while n > 0:
        stack.append(n % 2)
        n = n // 2

    while stack:
        print(stack.pop(), end='')
```

a) Prints binary representation of n in reverse order
b) Prints binary representation of n
c) Print the value of Log n
d) Print the value of Log n in reverse order

This function converts an integer n to its binary representation and prints it in reverse order. The correct answer is:

Prints binary representation of n.

4. Which of the following statement(s) about stack data structure is/are NOT correct?

a) Stack data structure can be implemented using linked list
b) New node can only be added at the top of the stack
c) Stack is the FIFO data structure
d) Adding an element to a filled stack leads to underflow conditions.

Correct statement(s) about what is **NOT correct:**

- Stack is the FIFO data structure.
- Adding an element to a filled stack leads to underflow conditions.