

## BT ASNG 4

TITLE:Write a program in solidity to create Student data. Use the following constructs:


(1)Structures

(2)Arrays


(3)Fallback

```
// Solidity program to implement
// the above approach
pragma solidity >= 0.7.0<0.8.0;
// Build the Contract
contract MarksManagmtSys
{
    // Create a structure for
    // student details
    struct Student
    {
        int ID;
        string fName;
        string lName;
        int marks;
    }
    address owner;
    int public stdCount = 0;
    mapping(int => Student) public stdRecords;
    modifier onlyOwner
    {
        require(owner == msg.sender);
    }
    constructor()
    {
        owner=msg.sender;
    }
    // Create a function to add
    // the new records
    function addNewRecords(int _ID,
        string memory _fName,
        string memory _lName,
        int _marks) public onlyOwner
    {
        // Increase the count by 1
        stdCount = stdCount + 1;
        // Fetch the student details
        // with the help of stdCount
        stdRecords[stdCount] = Student(_ID, _fName,
        _lName, _marks);
    }
    // Create a function to add bonus marks
    function bonusMarks(int _bonus) public onlyOwner
    {
        stdRecords[stdCount].marks =
```

```
stdRecords[stdCount].marks + _bonus;
}
}
```

 [vm] from: 0x5B3...eddC4 to: MarksManagmtSys.(constructor) value: 0 wei data: 0x608...60033 logs: 0 hash: 0x1bc...cd886

transact to MarksManagmtSys.addNewRecords pending ...

 [vm] from: 0x5B3...eddC4 to: MarksManagmtSys.addNewRecords(int256,string,string,int256) 0xd91...39138 value: 0 wei data: 0x9e6...00000 logs: 0 hash: 0x967...662ab

status true Transaction mined and execution succeed

transaction hash 0x9674a0b6b0f3a6eb576d489b32e567496cf423cbbfa1398b71481e70073662ab

block hash 0x408465f1e9a1a83f37447a89131161fe47d2826009761aa6c2650a9b254d7ddf

block number 2

from 0x5B380a6a701c568545dcfc803fc8875f56beddC4

to MarksManagmtSys.addNewRecords(int256,string,string,int256) 0xd9145CCE520386f254917e481e844e9943F39138

gas 157549 gas

transaction cost 136999 gas

execution cost 114671 gas

input 0x9e6...00000

decoded input
 


```
{
  "int256_ID": "101",
  "string_fName": "Gayatri",
  "string_lName": "Bhagwat",
  "int256_marks": "89"
}
```

decoded output {}

logs []

val 0 wei

call to MarksManagmtSys.stdRecords

 [call] from: 0x5B380a6a701c568545dcfc803fc8875f56beddC4 to: MarksManagmtSys.stdRecords(int256) data: 0xcd9...00002

from 0x5B380a6a701c568545dcfc803fc8875f56beddC4

to MarksManagmtSys.stdRecords(int256) 0xd9145CCE520386f254917e481e844e9943F39138

execution cost 10543 gas (Cost only applies when called by a contract)

input 0xcd9...00002


decoded input
 

```
{
  "int256_": "2"
}
```

decoded output
 

```
{
  "0": "int256: ID 101",
  "1": "string: fName Gayatri",
  "2": "string: lName Bhagwat",
  "3": "int256: marks 89"
}
```

logs []

 [vm] from: 0x5B3...eddC4 to: MarksManagmtSys.bonusMarks(int256) 0xd91...39138 value: 0 wei data: 0xbc5...00002 logs: 0 hash: 0x8c5...d0a38

status true Transaction mined and execution succeed

transaction hash 0x8c534923c8726b52f8045c2eeba03276311561cb39e46bcae934bb4c21ad0a38

block hash 0xc7bc1c72ce0bd9654b7921c79b8bb29b38833dce9fd6f3bec6db27e573dc5ef

block number 3

from 0x5B380a6a701c568545dcfc803fc8875f56beddC4

to MarksManagmtSys.bonusMarks(int256) 0xd9145CCE520386f254917e481e844e9943F39138

gas 35636 gas

transaction cost 30907 gas

execution cost 9783 gas

input 0xbc5...00002

decoded input
 

```
{
  "int256_bonus": "2"
}
```

decoded output {}

logs []

val 0 wei

call to MarksManagmtSys.stdCount

CALL [call] from: 0x5B380a6a701c568545dCfcB03FcB075f56beddC4 to: MarksManagmtSys.stdCount() data: 0xfe6...15f2a Debug

from 0x5B380a6a701c568545dCfcB03FcB075f56beddC4

to MarksManagmtSys.stdCount() 0xd9145CCe520386f254917e481e844e9943f39138

execution cost 2349 gas (Cost only applies when called by a contract)

input 0xfe6...15f2a

decoded input {}

decoded output { "0": "int256: 2" }

logs []

## Deployed Contracts

MARKSMANAGMTSYS AT 0XD91...39138 (MEMORY)

Balance: 0 ETH

### addNewRecords

\_ID: 101

\_fName: Gayatri

\_lName: Bhagwat

**\_marks** 89

Calldata Parameters **transact**

### bonusMarks

\_bonus: "2"

Calldata Parameters **transact**

**stdCount**

0: int256; 2

### stdRecords

2

Calldata Parameters **call**

0: int256; ID 101  
1: string; fName Gayatri  
2: string; lName Bhagwat  
3: int256; marks 89