Experiment 2

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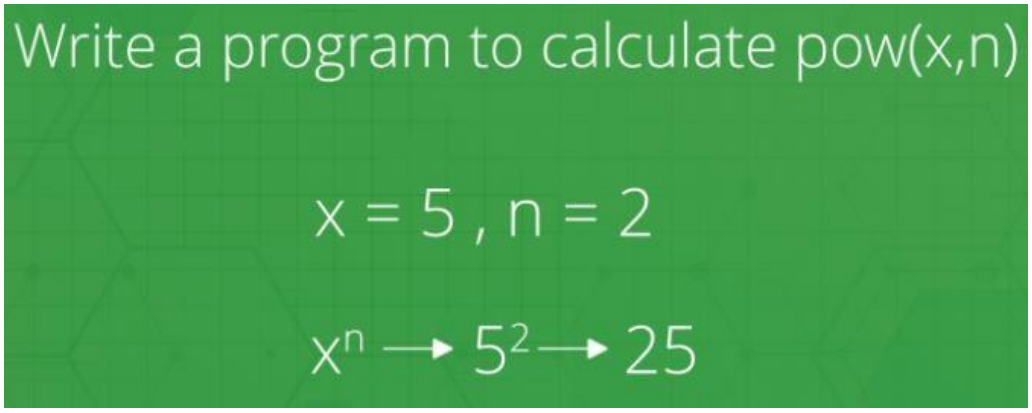
Semester: 5th **Date of Performance: 08/08/2022**
Subject Name: Design and Analysis of Algorithms
Subject Code: 20CSP-312

1. **Aim/Overview of the practical:**

   Code implement power function in O(log n) time complexity.

2. **Task to be done/ Which logistics used:**

   Given two integers x and n, write a function to compute x^n. We may assume that x and n aresmall and overflow doesn't happen.

3. 

Examples:

Input: x = 2, n = 3

Output: 8

Input: x = 7, n = 2

Output: 49

4. Steps for experiment/practical/Code:

```
#include <iostream>
using namespace std;
int power(int x, int y) {
	int p;
	if(x==0 && y==0) {
		return -1;
	}
	if(x==0) {
		return 0;
	}
	if(y==0) {
		return 1;
	}
	if(y%2 == 0) {
		p = power(x, y/2) * power(x, y/2);
	}
	if(y%2 != 0) {
		p = power(x, y-1) * x;
	}
	return p;
}
```

```
int main() {
        int p = power(2, 5);
        cout<<"Power is: "<<p;
}
```

5. Observations/Discussions/ Complexity Analysis: