Hash Table Report

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Hash Functions

```
int hashF1(string s)
{
    int h = 0 , p = 31;
    for(int i=0;i<(int)s.size();i++)
    {
        h = (h * p + s[i]);
    }
    return h;
}
```

```
int hashF2(string s)
{
    int h = 0 , prime = 31 , p = 1 , mod = 1e9+7;
    for(int i=0;i<(int)s.size();i++)
    {
        h = ((h%mod) + (p * s[i])%mod) % mod;

        p = ((p%mod) * (prime%mod))%mod;
    }
    return h;
}
```

Auxilary Hash Function

```
int auxhashF(string s)
{
    int h = 7 , p = 31;
    for(int i=0;i<(int)s.size();i++)
    {
        h = (h * p + s[i]);
    }
    return h;
}
```

Probe Functions

```
int doubleHashingProbe(int x,int aux)
{
    return x*aux;
}
```

```
int customHashingProbe(int x,int aux)
{
    return (x*aux + x*x)>>1;
}
```

Collision and Avg. Probe Report

Collision Resolution Method	Hash1		Hash2	
	No. of Collisions	Avg. Probes	No. of Collisions	Avg. Probes
Chaining Method	3632	1.54	3648	1.53
Double Hashing	63718	5.61	57889	5.57
Custom Probing	62598	6.71	62388	5.73