# 各个Hash算法的执行时间

## 时间计算代码1

```
#include <time.h>
#include <stdio.h>

int main()
{
   clock_t start_t, end_t;
   double total_t;
   int i;

   start_t = clock();
   printf("程序启动，start_t = %ld\n", start_t);
   printf("开始一个大循环，start_t = %ld\n", start_t);
   for(i=0; i< 10000000; i++)
   {
    //执行算法
   }
   end_t = clock();
   printf("大循环结束，end_t = %ld\n", end_t);

   total_t = (double)(end_t - start_t) / CLOCKS_PER_SEC;
   printf("CPU 占用的总时间：%f\n", total_t  );
   printf("程序退出...\n");

   return(0);
}
```

# 主程序

```
int main() {
    //start timer
    clock_t start_t, end_t;
    double total_t;
    int i;
    start_t = clock();
    printf("程序启动，start_t = %ld\n", start_t);
    printf("开始一个大循环，start_t = %ld\n", start_t);

    for(i=0; i< 10000000; i++)
    {
        FILE* f_string = NULL;
        f_string = fopen("string.txt", "r");

        if (!f_string)
            {
            printf("du wen jian shi bai.\n");
            return 0;
            }

        for (size_t i = 0; i < 200000; i++)
            {
                char str[99];
                fscanf(f_string, "%s", str);
                printf("%12s 的hash值是：%u\n", str, RSHash(str));
            }

        fclose(f_string);

    // conclude timer
    end_t = clock();
    printf("大循环结束，end_t = %ld\n", end_t);
    total_t = (double)(end_t - start_t) / CLOCKS_PER_SEC;
    printf("CPU 占用的总时间：%f\n", total_t  );
    printf("程序退出...\n");
    return(0);
    }
}
```

## SDBMHash

start_t = 536242

end_t = 1091657

CPU 占用的总时间： 0.498270 0.528836 0.491364

## RSHash

start_t = 434486

end_t = 940289

CPU 占用的总时间：

0.505803 0.500673 0.505015

## JSHash

0.490847 0.496962 0.495953

## PJWHash

0.484274 0.497424 0.499829

## ELFHash

start_t = 337549

end_t = 896442

CPU 占用的总时间： 0.493847 0.520552 0.522738

## BKDRHash

0.484216 0.493591 0.495606

## DJBHash

0.501530 0.493006 0.505955

## APHash

0.536680 0.503890 0.499214 0.499886

# 时间计算代码2

```
time_t start_t, end_t;
double diff_t;
//start timer
time(&start_t);
// 执行算法
time(&end_t);
diff_t = difftime(end_t, start_t);
printf("执行时间 = %f\n", diff_t);
```

# 主程序

```
int main() {
```

```
    time_t start_t, end_t;
    double diff_t;
    //start timer
    time(&start_t);
        FILE* f_string = NULL;
        f_string = fopen("string.txt", "r");

        if (!f_string)
            {
            printf("Failed.\n");
            return 0;
            }

        for (size_t i = 0; i < 200000; i++)
            {
                char str[99];
                fscanf(f_string, "%s", str);
                printf("%12s 的hash值是: %u\n", str, APHash(str));
            }
        fclose(f_string);
    // conclude timer
    time(&end_t);
    diff_t = difftime(end_t, start_t);
    printf("执行时间 = %f\n", diff_t);
}
```

## SDBMHash

执行四次，分别花费的时间为

6 4 7 4

## RSHash

执行四次，分别花费的时间为

4 4 3 4

## JSHash

执行四次，分别花费的时间为

4 4 4

## PJWHash

执行四次，分别花费的时间为

4 4 5 5

## ELFHash

执行四次，分别花费的时间为

5 4 4 3

## BKDRHash

执行四次，分别花费的时间为

7 5 5 5

## DJBHash

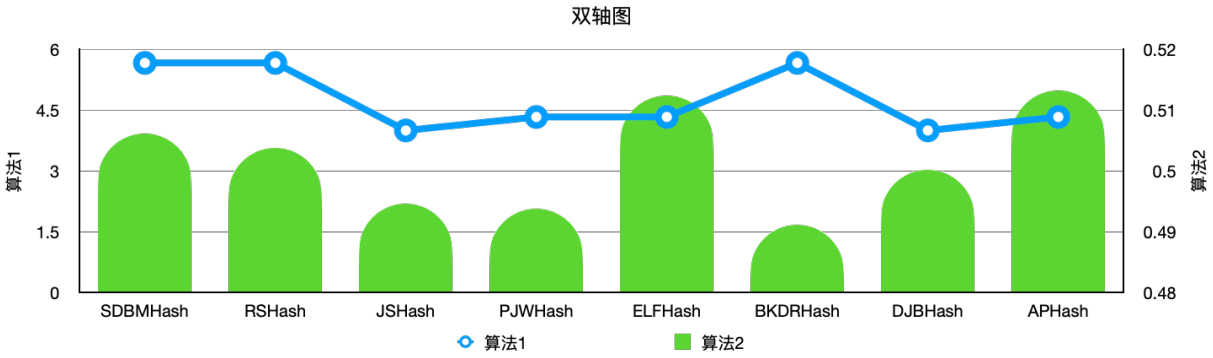
执行四次，分别花费的时间为

4 4 4 5

## APHash

执行四次，分别花费的时间为

4 6 3 4


双轴图
6
4.5
3
1.5
0
算法1
0.52
0.51
0.5
0.49
0.48
算法2
SDBMHash
RSHash
JSHash
PJWHash
ELFHash
BKDRHash
DJBHash
APHash
算法1
算法2