

## CA ASSIGNMENT-3 OBSERVATION REPORT

### Done by:

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### INPUT FOR CODE:

- 1) Enter the size of cache in Kilobytes
- 2) Enter the size of a block in bytes

### OBSERVATIONS:

#### **Part A:**

Cache size in KB: 64

Block size in Bytes: 4

Number of cache lines: 16384

FILE	HITS	MISSES	HIT RATIO	MISS RATIO	HIT/MISS RATIO
1) gcc.trace	482513	33170	0.935677538332658	0.064322461667342	14.546668676514923
2) gzip.trace	320883	160161	0.667055404495223	0.332944595504777	2.003502725382584
3) mcf.trace	7502	719728	0.010315856056543	0.989684143943457	0.010423382166596
4) swim.trace	280442	22751	0.924961987908692	0.075038012091308	12.326579051470265
5) twolf.trace	476625	6199	0.987160953059500	0.012839046940500	76.887401193740928

#### **Part B:**

Cache size in KB: 512

Block size in Bytes: 4

Number of cache lines: 131072

FILE	HITS	MISSES	HIT RATIO	MISS RATIO	HIT/MISS RATIO
1) gcc.trace:-	483844	31839	0.938258581337760	0.061741418662240	15.196582807248971
2) gzip.trace:-	320883	160161	0.667055404495223	0.332944595504777	2.003502725382584
3) mcf.trace:-	7505	719725	0.010319981298901	0.989680018701099	0.010427593872660
4) swim.trace:-	280738	22455	0.925938263746195	0.074061736253805	12.502248942329103
5) twolf.trace:-	476771	6053	0.987463340679005	0.012536659320995	78.766066413348753

## Part C:

(I) Cache size in KB: 64

Block size in Bytes: 1

Number of cache lines: 65536

FILE	HITS	MISSES	HIT RATIO	MISS RATIO	HIT/MISS RATIO
1) gcc.trace:-	479257	36426	0.929363581890425	0.070636418109575	13.157003239444354
2) gzip.trace:-	320875	160169	0.667038773999884	0.332961226000116	2.003352708701434
3) mcf.trace:-	7445	719785	0.010237476451742	0.989762523548258	0.010343366421918
4) swim.trace:-	280209	22984	0.924193500509576	0.075806499490424	12.191481030281935
5) twolf.trace:-	475323	7501	0.984464318260898	0.015535681739102	63.367950939874682

(II) Cache size in KB: 64

Block size in Bytes: 4

Number of cache lines: 16384

FILE	HITS	MISSES	HIT RATIO	MISS RATIO	HIT/MISS RATIO
1) gcc.trace	482513	33170	0.935677538332658	0.064322461667342	14.546668676514923
2) gzip.trace	320883	160161	0.667055404495223	0.332944595504777	2.003502725382584
3) mcf.trace	7502	719728	0.010315856056543	0.989684143943457	0.010423382166596
4) swim.trace	280442	22751	0.924961987908692	0.075038012091308	12.326579051470265
5) twolf.trace	476625	6199	0.987160953059500	0.012839046940500	76.887401193740928

(III) Cache size in KB: 64

Block size in Bytes: 8

Number of cache lines: 8192

FILE	HITS	MISSES	HIT RATIO	MISS RATIO	HIT/MISS RATIO
1) gcc.trace:-	493164	22519	0.956331699900908	0.043668300099092	21.899906745414984
2) gzip.trace:-	320891	160153	0.667072034990562	0.332927965009438	2.003652757051070
3) mcf.trace:-	7545	719685	0.010374984530341	0.989625015469659	0.010483753308739
4) swim.trace:-	282967	20226	0.933290016590093	0.066709983409907	13.990260061307229
5) twolf.trace:-	477081	5743	0.988105396583434	0.011894603416566	83.071739508967440

**(IV)** Cache size in KB: 64

Block size in Bytes: 16

Number of cache lines: 4096

FILE	HITS	MISSES	HIT RATIO	MISS RATIO	HIT/MISS RATIO
1) gcc.trace:-	503073	12610	0.975546993017028	0.024453006982972	39.894766058683587
2) gzip.trace:-	321266	159778	0.667851589459592	0.332148410540408	2.010702349509945
3) mcf.trace:-	367264	359966	0.505017669788100	0.494982330211900	1.020274137001828
4) swim.trace:-	291407	11786	0.961127070875647	0.038872929124353	24.724843034108265
5) twolf.trace:-	479633	3191	0.993390966480539	0.006609033519461	150.308053901598242

**(V)** Cache size in KB: 64

Block size in Bytes: 32

Number of cache lines: 2048

FILE	HITS	MISSES	HIT RATIO	MISS RATIO	HIT/MISS RATIO
1) gcc.trace:-	508156	7527	0.985403823666865	0.014596176333135	67.511093397103764
2) gzip.trace:-	321454	159590	0.668242406100066	0.331757593899934	2.014249013096059
3) mcf.trace:-	547142	180088	0.752364451411520	0.247635548588480	3.038192439251921
4) swim.trace:-	296434	6759	0.977707268967291	0.022292731032709	43.857671253143955
5) twolf.trace:-	480922	1902	0.996060676354117	0.003939323645883	252.850683491062028