Alperen Kalay e2232106

PERFORMANCE EVALUATION OF HASHING

Folding Hash Function:

11325351222

62146291503

37438088068

38413041772

69866238262

93198650286

15413735857

E

58733108109

E

97980147555

51159083872

56807743136

E

12508393967

82544161633

66290493119

78158612426

37297534328

11173004830

60930087635

41969825549

51711527614

88017505909

73959720286

92824504408

15420973726

95583783798

E

81435526892

72552148698

13598407636

15863945382

84739800880

56738492657

34849925533

E

98227858394

49053912881

25258677229

E

89279543123

77873038252

34746365281

E

19162727651

14462682551

70818303620

44551412663

95690013558

10675004549

E

69926658403

35120164061

51064530891

36282343436

45861551964

67155402606

18211976295

54139582796

E

24865090063

24915733422

20039181953

18496378829

93331356950

23221685761

14607177773

74579830223

91351425389

98245299838

15176002436

95556059463

E

23630352807

95309951112

50655189623

38012509478

E

E

E

82055932874

56482168314

17719034175

87617237858

39182801848

84920706070

78583241159

76012938514

58626539246

89841439880

E

63428875812

87783837107

12903885770

17409488245

64070340053

55663008823

34113874277

E

Loading factor for folding= 200/100 = 2

Number of collision for folding= 200-85 = 115

Middle Squaring Hash Function:

13598407636

56738492657

E

E

17409488245

E

E

E

E

15420973726

E

E

E

E

E

E

89279543123

E

E

E

E

78158612426

E

E

23221685761

93198650286

E

E

E

44279237315

E

E

E

E

E

E

13893446066

E

E

E

E

62146291503

E

E

12903885770

E

E

E

E

89841439880

E

E

E

E

E

E

35120164061

E

E

E

E

23402319898

E

E

34849925533

E

E

E

E

34113874277

E

E

E

E

E

E

39959265324

E

E

E

E

24865090063

E

E

19897228289

E

E

E

E

14607177773

E

E

E

E

E

E

83450145667

E

E

E

Loading factor for middle squaring= 200/100 = 2

Number of collision for middle squaring= 200-22 = 178

Truncation Hash Function:

E

95945058801

16575412002

62146291503

79538232104

E

67155402606

87783837107

92824504408

58733108109

63090801510

E

63428875812

17746707413

51711527614

44279237315

39485132816

28418375817

55328253618

66290493119

70818303620

78311257621

11325351222

89279543123

39959265324

53410485925

15420973726

44425042127

37297534328

18496378829

57444442930

12770241031

30350767832

34849925533

E

60930087635

13598407636

32227031337

98245299838

E

10407908140

E

13939365542

95190283143

E

17409488245

58626539246

E

39182801848

41969825549

48813678950

19162727651

77873038252

20039181953

32860126054

97980147555

E

56738492657

87617237858

64929344059

35998182660

23221685761

69866238262

24865090063

45861551964

99769357665

13893446066

12508393967

34965109968

E

84920706070

89307478371

51159083872

14607177773

33241290874

17719034175

65839483976

34113874277

38012509478

22591085079

89841439880

34746365281

34152316882

E

31552217484

75905120985

93198650286

89899942087

E

19897228289

87816095890

51064530891

81435526892

E

98227858394

18211976295

54139582796

69089360697

95583783798

84054721499

Loading factor for truncation= 200/100 = 2

Number of collision for truncation= 200-87 = 113

Comparison:

Loading factors are same because 200 items were loaded to 100 buckets. There are differences in number of collision. It is good to have low number of collision in hash table because is goes to O(1). It is also slower to find related data in high number of collisions. Therefore, truncation seems to be best hash function to hash my hash_init200.txt file.