

Screenshots of Execution - Lab 5

Compiling:

Running Task 2:

```
amanyadav@Onyx dblayer % ./loaddb
0 Afghanistan
1 Albania
2 Algeria
3 Andorra
4 Angola
5 Antigua & Barbuda
6 Argentina
7 Armenia
8 Australia
9 Austria
10 Azerbaijan
11 Bahamas
12 Bahrain
13 Bangladesh
14 Barbados
15 Belarus
16 Belgium
17 Belize
18 Benin
19 Bhutan
20 Bolivia
21 Bosnia & Herzegovina
22 Botswana
23 Brazil
24 Brunei
25 Bulgaria
26 Burkina Faso
27 Burundi
28 Cambodia
29 Cameroon
30 Canada
31 Cabo Verde
32 Central African Republic
33 Chad
34 Chile
35 China
36 Colombia
37 Comoros
38 Republic of the Congo
39 Costa Rica
40 Croatia
41 Cuba
42 Cyprus
43 Czech Republic
44 Democratic Republic of the Congo
45 Denmark
46 Djibouti
47 Dominica
48 Dominican Republic
```

```
49 East Timor
50 Ecuador
51 Egypt
52 El Salvador
53 Equatorial Guinea
54 Eritrea
55 Estonia
56 Ethiopia
57 Federated States of Micronesia
58 Fiji
59 Finland
60 France
61 Gabon
62 Georgia
63 Germany
64 Ghana
65 Greece
66 Grenada
67 Guatemala
68 Guinea
69 Guinea-Bissau
70 Guyana
71 Haiti
72 Honduras
73 Hungary
74 Iceland
75 India
76 Indonesia
77 Iran
78 Iraq
79 Ireland
80 Israel
81 Italy
82 Jamaica
83 Japan
84 Jordan
85 Kazakhstan
86 Kenya
87 Kiribati
88 Kuwait
89 Kyrgyzstan
90 Laos
91 Latvia
92 Lebanon
93 Lesotho
94 Liberia
95 Libya
96 Liechtenstein
97 Lithuania
98 Luxembourg
```

99 Madagascar
100 Malawi
101 Malaysia
102 Maldives
103 Mali
104 Malta
105 Marshall Islands
106 Mauritania
107 Mauritius
108 Mexico
109 Moldova
110 Monaco
111 Mongolia
112 Montenegro
113 Morocco
114 Mozambique
115 Myanmar
116 Namibia
117 Nauru
118 Nepal
119 Netherlands
120 New Zealand
121 Nicaragua
122 Niger
123 Nigeria
124 North Korea
125 Norway
126 Oman
127 Pakistan
128 Palau
129 Palestine
130 Panama
131 Papua New Guinea
132 Paraguay
133 Peru
134 Philippines
135 Poland
136 Portugal
137 Qatar
138 Republic of Macedonia
139 Romania
140 Russia
141 Rwanda
142 Saint Kitts & Nevis
65536 Saint Lucia
65537 Saint Vincent & the Grenadines
65538 Samoa
65539 San Marino
65540 Sao Tome & Principe
65541 Saudi Arabia

65542 Senegal
65543 Serbia
65544 Seychelles
65545 Sierra Leone
65546 Singapore
65547 Slovakia
65548 Slovenia
65549 Solomon Islands
65550 Somalia
65551 South Africa
65552 South Korea
65553 South Sudan
65554 Spain
65555 Sri Lanka
65556 Sudan
65557 Suriname
65558 Sweden
65559 Switzerland
65560 Syria
65561 Taiwan
65562 Tajikistan
65563 Tanzania
65564 Thailand
65565 The Gambia
65566 Togo
65567 Tonga
65568 Trinidad & Tobago
65569 Tunisia
65570 Turkey
65571 Turkmenistan
65572 Tuvalu
65573 Uganda
65574 Ukraine
65575 United Arab Emirates
65576 United Kingdom
65577 United States
65578 Uruguay
65579 Uzbekistan
65580 Vanuatu
65581 Vatican City
65582 Venezuela
65583 Vietnam
65584 Yemen
65585 Zambia
65586 Zimbabwe

Running Task 3 :

1. Sequential scan:

```
amanyadav@Onyx dblayer % ./dumpdb s
Afghanistan,Kabul,35530081
Albania,Tirana,2930187
Algeria,Algiers,41318142
Andorra,Andorra La Vella,76965
Angola,Luanda,29784193
Antigua and Barbuda,Saint John's,102012
Argentina,Buenos Aires,44271041
Armenia,Yerevan,2930450
Australia,Canberra,24450561
Austria,Vienna,8735453
Azerbaijan,Baku,9827589
Bahamas,Nassau,395361
Bahrain,Manama,1492584
Bangladesh,Dhaka,164669751
Barbados,Bridgetown,285719
Belarus,Minsk,9468338
Belgium,Brussels,11429336
Belize,Belmopan,374681
Benin,Porto-Novo,11175692
Bhutan,Thimphu,807610
Bolivia,Sucre,11051600
Bosnia & Herzegovina,Sarajevo,3507017
Botswana,Gaborone,2291661
Brazil,Brasilia,209288278
Brunei,Bandar Seri Begawan,428697
Bulgaria,Sofia,7084571
Burkina Faso, Ouagadougou,19193382
Burundi,Bujumbura,10864245
Cambodia,Phnom Penh,16005373
Cameroon,Yaounde,24053727
Canada,Ottawa,36624199
Cabo Verde,Praia,546388
Central African Republic,Bangui,4659080
Chad,N'Djamena,14899994
Chile,Santiago,18054726
China,Beijing,1409517397
Colombia,Bogotá,49065615
Comoros,Moroni,813912
Republic of the Congo,Brazzaville,5260750
Costa Rica,San Jose,4905769
Croatia,Zagreb,4189353
Cuba,Havana,11484636
Cyprus,Nicosia,1179551
Czech Republic,Prague,10618303
Democratic Republic of the Congo,Kinshasa,81339988
Denmark,Copenhagen,5733551
Djibouti,Djibouti (City),956985
Dominica,Roseau,73925
Dominican Republic,Santo Domingo,10766998
```

```
East Timor,Dili,1296311
Ecuador,Quito,16624858
Egypt,Cairo,97553151
El Salvador,San Salvador,6377853
Equatorial Guinea,Malabo,1267689
Eritrea,Asmara,5068831
Estonia,Tallinn,1309632
Ethiopia,Addis Ababa,104957438
Federated States of Micronesia,Palikir,105544
Fiji,Suva,905502
Finland,Helsinki,5523231
France,Paris,64979548
Gabon,Libreville,2025137
Georgia,Tbilisi,3912061
Germany,Berlin,82114224
Ghana,Accra,28033629
Greece,Athens,11159773
Grenada,Saint George's,107825
Guatemala,Guatemala City,16913503
Guinea,Conakry,12717176
Guinea-Bissau,Bissau,1861285
Guyana,Georgetown,777859
Haiti,Port-Au-Prince,10981229
Honduras,Tegucigalpa,9265067
Hungary,Budapest,9721559
Iceland,Reykjavík,335025
India,New Delhi,1339180127
Indonesia,Jakarta,263991379
Iran,Tehran,81162788
Iraq,Baghdad,38274618
Ireland,Dublin,4761657
Israel,Jerusalem/Tel Aviv,8321570
Italy,Rome,59359900
Jamaica,Kingston,2890299
Japan,Tokyo,127484450
Jordan,Amman,9702353
Kazakhstan,Astana,18204499
Kenya,Nairobi,49699862
Kiribati,South Tarawa,116398
Kuwait,Kuwait City,4136528
Kyrgyzstan,Bishkek,6045117
Laos,Vientiane,6858160
Latvia,Riga,1949670
Lebanon,Beirut,6082357
Lesotho,Maseru,2233339
Liberia,Monrovia,4731906
Libya,Tripoli,6374616
Liechtenstein,Vaduz,37922
Lithuania,Vilnius,2890297
Luxembourg,Luxembourg,583455
```

Madagascar, Antananarivo, 25570895
Malawi, Lilongwe, 18622104
Malaysia, Kuala Lumpur, 31624264
Maldives, Male, 436330
Mali, Bamako, 18541980
Malta, Valletta, 430835
Marshall Islands, Majuro, 53127
Mauritania, Nouakchott, 4420184
Mauritius, Port Louis, 1265138
Mexico, Mexico City, 129163276
Moldova, Chisinau, 4051212
Monaco, Monaco, 38695
Mongolia, Ulaanbaatar, 3075647
Montenegro, Podgorica, 628960
Morocco, Rabat, 35739580
Mozambique, Maputo, 29668834
Myanmar, Nay Pyi Taw, 53370609
Namibia, Windhoek, 2533794
Nauru, Yaren District, 11359
Nepal, Kathmandu, 29304998
Netherlands, Amsterdam, 17035938
New Zealand, Wellington, 4705818
Nicaragua, Managua, 6217581
Niger, Niamey, 21477348
Nigeria, Abuja, 190886311
North Korea, Pyongyang, 25490965
Norway, Oslo, 5305383
Oman, Muscat, 4636262
Pakistan, Islamabad, 197015955
Palau, Ngerulmud, 21729
Palestine, Jerusalem/Ramallah, 4920724
Panama, Panama City, 4098587
Papua New Guinea, Port Moresby, 8251162
Paraguay, Asunción, 6811297
Peru, Lima, 32165485
Philippines, Manila, 104918090
Poland, Warsaw, 38170712
Portugal, Lisbon, 10329506
Qatar, Doha, 2639211
Republic of Macedonia, Skopje, 2083160
Romania, Bucharest, 19679306
Russia, Moscow, 143989754
Rwanda, Kigali, 12208407
Saint Kitts & Nevis, Basseterre, 55345
Saint Lucia, Castries, 178844
Saint Vincent & the Grenadines, Kingstown, 109897
Samoa, Apia, 196440
San Marino, San Marino, 33400
Sao Tome & Principe, Sao Tome, 204327
Saudi Arabia, Riyadh, 32938213

Senegal, Dakar, 15850567
Serbia, Belgrade, 8790574
Seychelles, Victoria, 94737
Sierra Leone, Freetown, 7557212
Singapore, Singapore, 5798844
Slovakia, Bratislava, 5447662
Slovenia, Ljubljana, 2079976
Solomon Islands, Honiara, 611343
Somalia, Mogadishu, 14742523
South Africa, Bloemfontein/Cape Town/Pretoria, 56717156
South Korea, Seoul, 50982212
South Sudan, Juba, 12575714
Spain, Madrid, 46354321
Sri Lanka, Colombo/Sri Jayawardenepura Kotte, 20876917
Sudan, Khartoum, 40533330
Suriname, Paramaribo, 563402
Sweden, Stockholm, 9910701
Switzerland, Bern, 8476005
Syria, Damascus, 18269868
Taiwan, Taipei, 23626456
Tajikistan, Dushanbe, 8921343
Tanzania, Dodoma, 57319019
Thailand, Bangkok, 69037513
The Gambia, Banjul, 2100568
Togo, Lomé, 7797694
Tonga, Nuku'alofa, 108020
Trinidad & Tobago, Port Of Spain, 1369125
Tunisia, Tunis, 11532127
Turkey, Ankara, 80745020
Turkmenistan, Ashgabat, 5758075
Tuvalu, Funafuti, 11192
Uganda, Kampala, 42862958
Ukraine, Kiev, 44222947
United Arab Emirates, Abu Dhabi, 9400145
United Kingdom, London, 66181585
United States, Washington D.C., 324459463
Uruguay, Montevideo, 3456750
Uzbekistan, Tashkent, 31910641
Vanuatu, Port Vila, 276244
Vatican City, Vatican City, 792
Venezuela, Caracas, 31977065
Vietnam, Hanoi, 95540800
Yemen, Sana'a, 28250420
Zambia, Lusaka, 17094130
Zimbabwe, Harare, 16529904

2. Index scan:

```
amanyadav@Onyx dblayer % ./dumpdb i LESS_THAN_EQUAL 1000000
Vatican City,Vatican City,792
Tuvalu,Funafuti,11192
Nauru,Yaren District,11359
Palau,Ngerulmud,21729
San Marino,San Marino,33400
Liechtenstein,Vaduz,37922
Monaco,Monaco,38695
Marshall Islands,Majuro,53127
Saint Kitts & Nevis,Basseterre,55345
Dominica,Roseau,73925
Andorra,Andorra La Vella,76965
Seychelles,Victoria,94737
Antigua & Barbuda,Saint John's,102012
Federated States of Micronesia,Palikir,105544
Grenada,Saint George's,107825
Tonga,Nuku Alofa,108020
Saint Vincent & the Grenadines,Kingstown,109897
Kiribati,South Tarawa,116398
Saint Lucia,Castries,178844
Samoa,Apia,196440
Sao Tome & Principe,Sao Tome,204327
Vanuatu,Port Vila,276244
Barbados,Bridgetown,285719
Iceland,Reykjavik,335025
Belize,Belmopan,374681
Bahamas,Nassau,395361
Brunei,Bandar Seri Begawan,428697
Malta,Valletta,430835
Maldives,Male,436330
Cabo Verde,Praia,546388
Suriname,Paramaribo,563402
Luxembourg,Luxembourg,583455
Solomon Islands,Honlara,611343
Montenegro,Podgorica,628960
Guyana,Georgetown,777859
Bhutan,Thimphu,807610
Comoros,Moroni,813912
Fiji,Suva,905502
Djibouti,Djibouti (City),956985
```

```
amanyadav@Onyx dblayer % ./dumpdb i GREATER_THAN 1000000
Cyprus,Nicosia,1179551
Mauritius,Port Louis,1265138
Equatorial Guinea,Malabo,1267689
East Timor,Dili,1296311
Estonia,Tallinn,1309632
Trinidad & Tobago,Port Of Spain,1369125
Bahrain,Manama,1492584
Guinea-Bissau,Bissau,1861283
Latvia,Riga,1949670
Gabon,Libreville,2025137
Slovenia,Ljubljana,2079976
Republic of Macedonia,Skopje,2083160
The Gambia,Banjul,2108568
Lesotho,Maseru,2233339
Botswana,Gaborone,2291661
Namibia,Windhoek,2533794
Qatar,Doha,2639211
Lithuania,Vilnius,2890297
Jamaica,Kingston,2890299
Albania,Tirana,2930187
Armenia,Yerevan,2930450
Mongolia,Ulaanbaatar,3075647
Uruguay,Montevideo,3456750
Bosnia & Herzegovina,Sarajevo,3507017
Georgia,Tbilisi,3912061
Moldova,Chisinau,4051212
Panama,Panama City,4098587
Kuwait,Kuwait City,4136528
Croatia,Zagreb,4189353
Mauritania,Nouakchott,4420184
Oman,Muscat,4636262
Central African Republic,Bangui,4659080
New Zealand,Wellington,4705818
Liberia,Monrovia,4731906
Ireland,Dublin,4761657
Costa Rica,San Jose,4985769
Palestine,Jerusalem/Ramallah,4920724
Eritrea,Asmara,5068831
Republic of the Congo,Brazzaville,5260750
Norway,Oslo,5305383
Slovakia,Bratislava,5447662
Finland,Helsinki,5523231
Singapore,Singapore,5708844
Denmark,Copenhagen,5733551
Turkmenistan,Ashgabat,5758075
Kyrgyzstan,Bishkek,6045117
Lebanon,Beirut,6082357
Nicaragua,Managua,6217581
Libya,Tripoli,6374616
```

El Salvador,San Salvador,6377853
Paraguay,AsunciÓN,6811297
Laos,Vientiane,6858160
Bulgaria,Sofia,7084571
Sierra Leone,Freetown,7557212
Togo,LomÉ,7797694
Papua New Guinea,Port Moresby,8251162
Israel,Jerusalem/Tel Aviv,8321570
Switzerland,Bern,8476085
Austria,Vienna,8735453
Serbia,Belgrade,8790574
Tajikistan,Dushanbe,8921343
Honduras,Tegucigalpa,9265067
United Arab Emirates,Abu Dhabi,9400145
Belarus,Minsk,9468338
Jordan,Amman,9702353
Hungary,Budapest,9721559
Azerbaijan,Baku,9827589
Sweden,Stockholm,9910701
Portugal,Lisbon,10329506
Czech Republic,Prague,10618303
Dominican Republic,Santo Domingo,10766998
Burundi,Bujumbura,10864245
Haiti,Port-Au-Prince,10981229
Bolivia,Sucre,11051600
Greece,Athens,11159773
Benin,Porto-Novo,11175692
Belgium,Brussels,11429336
Cuba,Havana,11484636
Tunisia,Tunis,11532127
Rwanda,Kigali,12208407
South Sudan,Juba,12575714
Guinea,Conakry,12717176
Somalia,Mogadishu,14742523
Chad,N'Djamena,14899994
Senegal,Dakar,15850567
Cambodia,Phnom Penh,16005373
Zimbabwe,Harare,16529984
Ecuador,Quito,16624858
Guatemala,Guatemala City,16913503
Netherlands,Amsterdam,17035938
Zambia,Lusaka,17094130
Chile,Santiago,18054726
Kazakhstan,Astana,18204499
Syria,Damascus,18269868
Malí,Bamako,18541988
Malawi,Lilongwe,18622104
Burkina Faso,Ouagadougou,19193382
Romania,Bucharest,19679306

Sri Lanka,Colombo/Sri Jayawardeneppura Kotte,20876917
Niger,Niamey,21477348
Taiwan,Taipei,23626456
Cameroon,Yaounde,24053727
Australia,Canberra,24450561
North Korea,Pyongyang,25490965
Madagascar,Antananarivo,25570895
Yemen,Sana'a,28258420
Ghana,Accra,28833629
Nepal,Kathmandu,29304998
Mozambique,Maputo,29668834
Angola,Luanda,29784193
Malaysia,Kuala Lumpur,31624264
Uzbekistan,Tashkent,31910641
Venezuela,Caracas,31977065
Peru,Lima,32165485
Saudi Arabia,Riyadh,32938213
Afghanistan,Kabul,35530081
Morocco,Rabat,35739580
Canada,Ottawa,36624199
Poland,Warsaw,38170712
Iraq,Baghdad,38274618
Sudan,Khartoum,40533330
Algeria,Algiers,41318142
Uganda,Kampala,42862958
Ukraine,Kiev,44222947
Argentina,Buenos Aires,44271041
Spain,Madrid,46354321
Colombia,BogotÁ,49065615
Kenya,Nairobi,49699862
South Korea,Seoul,50982212
Myanmar,Nay Pyi Taw,53370609
South Africa,Bloemfontein/Cape Town/Pretoria,56717156
Tanzania,Dodoma,5731019
Italy,Rome,59359900
France,Paris,64979548
United Kingdom,London,66181585
Thailand,Bangkok,69037513
Turkey,Ankara,80745020
Iran,Tehran,81162788
Democratic Republic of the Congo,Kinshasa,81339988
Germany,Berlin,82114224
Vietnam,Hanoi,95540800
Egypt,Cairo,97553151
Philippines,Manila,104918090
Ethiopia,Addis Ababa,104957438
Japan,Tokyo,127484450
Mexico,Mexico City,129163276
Russia,Moscow,143989754
Bangladesh,Dhaka,164669751