DSA COURSE PROJECT

TECHNICAL DESIGN PROJECT

DSA COURSE PROJECT REPORT FORMAT

FINAL REPORT

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Abstract

The following document contains the report guidelines for the capstone design course. The template for the report, including requirements for the title page, abstract page, and report body, is available on the course website.

A short abstract (200 words) should open the paper. The purposes of an abstract are:
1.   To give a clear indication of the objective, scope and key results of the project so that readers may determine whether the full text will be of particular interest to them;
2.   To provide key words and phrases for indexing, abstracting and retrieval purposes.

The abstract should present the problem, outline the approach taken, and present the key results or tasks remaining. The abstract should not attempt to condense the whole subject matter into a few words for quick reading.

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1. Acknowledgments

Acknowledgments may be made to individuals or institutions not mentioned elsewhere in the paper who have made an important contribution

2. Copyright

3. Intellectual Property

3.1. Description of Problem

Electricity consumption around the world from 1980 to 2008,Highest consumption and also the lowest consumption around the world in the given year from 1980 to 2008.Comparison between 2 countries electricity consumption.

3.2. Proof of Concept

To solve this problem, we applied our knowledge of data structures and sorting algorithms
The following points were kept in mind while seeking the solution for the given problem:
• The end user of this product are government bodies.
• The program will provide detailed information of the electricity consumption of a given country.
• The program will also provide detailed information of the electricity consumption of all countries in a given year.
• The program will also compare the consumption to 2 given countries and determine whether the countries are developing or under developed in terms or electricity consumption.

3.3. Progress to Date

We have been consistently collecting huge amount of data from https://knoema.com/atlas/topics/Energy/datasets . This data was manipulated accordingly and a database was created to store it . The electricity consumption from 1980 to 2008 each. The program is designed to be efficient in terms of sorting and searching which was intended.

3.4. Individual Contributions

Mahim Patil-Program Development
Kartik RD-data collection.
Kamal Metgud-data collection
Divya-Program Development

3.5. Future Work

The created program can be further modified further so as to store more no data according to years.
This Program can be used in various organisation which keeps track of electricity consumption.

4. FIGURES/PHOTOS

```
Bermuda 0.00793 0.00686 0.00727 0.00771 0.00752 0.00741  0.007 0.00988  0.0108 0.01315 0.00928 0.00805 0.00647 0.00695 0.00743 0.00739  0.0075 0.00752 0.00752 0.0075
Canada    9.6947 9.58952 9.20637 9.18989 9.78546 10.1527810.2556310.5894311.0559911.2025210.9790611.1173311.4671611.7063112.0241412.2132512.5648212.6696812.3569912.9
Greenland  0.00791 0.00746 0.00722 0.00505 0.00799 0.00714 0.00462 0.00335 0.00777 0.00671 0.00787 0.00779 0.00687 0.00708 0.00719 0.00719 0.00728 0.00746 0.00756 0.
Mexico   3.72819 4.11969 4.33477 4.06414 4.18464 4.42001 4.36327 4.51142 4.58822 4.83663 4.70635 5.00522 5.10725 5.17674 5.37928 5.28936 5.51817  5.6835 5.98571 6.10
SaintPierreandMiquelon 0.0022 0.00221 0.00203 0.00221 0.00216 0.00191  0.0024 0.00306 0.00319 0.00365 0.00359 0.00341 0.00318 0.00174 0.00183 0.00122 0.00121 0.00083
UnitedStates  78.12376 76.1694 73.1533273.0360377.02972 76.7898 77.0218379.4372383.0776985.17228 84.9096 84.8887386.2499487.8977389.5560791.4636794.4799495.0384195.4
Antarctica  0.00213 0.00213 0.00212 0.00213  0.0027 0.00304 0.00275 0.00283 0.00291 0.00288 0.00292 0.00305 0.00304 0.00304 0.00305 0.00314 0.00313 0.00314 0.00314 0
AntiguaandBarbuda 0.00598 0.00531 0.00711 0.00415  0.0047 0.00461 0.00462 0.00564  0.0058 0.00582 0.00608  0.006 0.00598 0.00588 0.00661 0.00679 0.00677 0.00705 0.00
Argentina  1.64042 1.59706 1.67295 1.69346 1.83705 1.74194 1.89743 1.95167 1.95689 1.84008 1.87411  1.9716 2.04718  1.9703 2.24293 2.31167  2.3942 2.46373 2.57501 2.
Aruba     0000   0000   0000   0000   0000   0000 0.00146 0.00146 0.00556 0.00747 0.00787 0.00858 0.00921  0.0089  0.0104 0.01201  0.0079 0.01264 0.01277 0.01277 0.0
Bahamas  0.0599 0.06326  0.0541 0.04065 0.03669 0.03321 0.03275 0.03622  0.0338 0.03847 0.04116  0.0365 0.03061 0.02965 0.03625 0.04254 0.04778 0.04751  0.0536 0.048
Barbados  0.01446  0.0153 0.01527 0.01613 0.01555 0.01715 0.01826 0.01731 0.01645 0.01773  0.0184 0.01857 0.01877 0.01777  0.018 0.01844  0.0164 0.02033 0.02098  0.0
Belize    0.0033 0.00302 0.00283 0.00283  0.0031  0.0031 0.00379 0.00306 0.00221  0.0032 0.00453 0.00506 0.00433 0.00401 0.00408 0.00511 0.00454 0.00709 0.00706 0.00
Bolivia  0.07454  0.0834 0.07371 0.07562 0.07319 0.06694 0.06835 0.06706 0.07765 0.08738 0.09261 0.09142 0.09831 0.08471 0.10848 0.12355 0.12144 0.13574 0.12567 0.14
Brazil   4.02179 3.88321 3.94323 3.94192 4.30882 4.59267  4.9686 5.11182 5.29206 5.44799 5.75124 5.99391 6.08183 5.00428 6.61796 7.01667 7.44847 7.85007 8.10649 8.25
CaymanIslands  0.00144 0.00155 0.00155 0.00151 0.00155 0.00159  0.0016 0.00163 0.00382 0.00388 0.00396 0.00422  0.0043 0.00386 0.00445 0.00483 0.00486 0.00487 0.0049
Chile    0.42668 0.41949 0.37365 0.37945 0.39224 0.39888 0.38895 0.41039 0.44866 0.50603 0.56478 0.56348 0.60505 0.61029 0.69493 0.77018  0.8367 0.94607 0.93171 0.98
Colombia  0.69636 0.71547 0.76684 0.77864 0.85268 0.86345 0.90079 0.82399 0.91932 0.95303 0.88934 0.96592 0.97554 0.99902 1.09836 1.09355 1.18948 1.22775 1.23993 1.1
CostaRica  0.05545  0.0572  0.0558 0.06133 0.05911 0.05935 0.05825 0.06449 0.06984 0.07579  0.0744 0.07934 0.08816 0.09278 0.10489 0.11038 0.11195 0.12377 0.12729 0.
Cuba     0.45609 0.46394 0.50096 0.45969 0.47611 0.48449 0.50073 0.49287 0.50014 0.51006 0.49816  0.4597 0.40679 0.36866 0.40944 0.41726 0.42642 0.47073 0.44902 0.45
Dominica  0.00048 0.00061  0.0006 0.00067 0.00068 0.00073 0.00072 0.00077 0.00096 0.00101 0.00101 0.00101 0.00101  0.001  0.0012 0.00135 0.00135 0.00136 0.00147 0.00
DominicaRepublic 0.08726 0.08641 0.09122 0.10872 0.09397 0.10676 0.10905 0.12611 0.13375 0.12745 0.13871 0.14123 0.14653  0.1285 0.14663  0.1591 0.17257 0.18202 0.18
Ecuador  0.18651 0.19313 0.21098 0.19725  0.2079  0.2206 0.23703  0.2338  0.2423  0.2372 0.25381 0.26809 0.29819 0.25434 0.31462 0.30813  0.3324 0.34286 0.35013 0.33
ElSalvador  0.04785 0.04533 0.04478 0.04861 0.04904 0.04968 0.05225 0.05144 0.05566 0.05657 0.05775 0.05714 0.06403 0.06067 0.07246 0.08856  0.0903  0.0913 0.10331 0
FalklandIslands(Islas Malvinas) 0.00017 0.00017 0.00017 0.00017 0.00017 0.00022 0.00022 0.00022 0.00043 0.00039 0.00035 0.00035 0.00035 0.00035 0.00035 0.00039 0.000
FrenchGuiana  0.00515 0.00443 0.00565 0.00581 0.00463 0.00465 0.00542 0.00598 0.00706 0.00796 0.00951 0.01075 0.00861 0.01128 0.01169 0.01332 0.01329 0.01332 0.01355
Grenada  0.00067 0.00077 0.00085 0.00083 0.00085 0.00088 0.00098 0.00102 0.00111 0.00115 0.00178 0.00178 0.00183 0.00181 0.00237 0.00221 0.00244 0.00308 0.00278 0.00
Guadeloupe  0.00707  0.0101 0.01275 0.01339 0.01483 0.01341 0.01347 0.01536 0.01681 0.01884 0.02032 0.02128 0.01974 0.02111 0.02366 0.02428 0.02404 0.02445 0.02445 0
Guatemala  0.06717 0.05719 0.05804  0.063 0.05405 0.06525 0.06536 0.07126 0.07487 0.08067 0.07871 0.08572 0.08497 0.10377 0.10762 0.11619 0.12913 0.14244 0.1
Guyana   0.02142 0.02434 0.01956 0.01726 0.01973 0.02005 0.01933  0.0147 0.01461 0.00977 0.00942 0.01085 0.01239 0.01523 0.01556  0.0133 0.01421 0.01557  0.0197 0.02
Haiti     0.015 0.01088  0.0143 0.01285 0.01307 0.01495 0.01467  0.0213 0.02316 0.02134 0.01413 0.01418 0.01531 0.01099  0.01 0.01564 0.01822 0.02185 0.02161 0.0234
Honduras  0.03317 0.03085  0.0315  0.0329 0.03382 0.03222 0.03763 0.03635 0.04547 0.05259  0.0593 0.05895 0.06051 0.05982  0.0609 0.06496 0.07339 0.07457 0.08028 0.0
Jamaica  0.11805 0.09955 0.08658 0.09239 0.07545 0.06769 0.06822 0.07341 0.08471 0.09729 0.10342 0.10546 0.11563 0.11283 0.12189 0.13437 0.13774 0.14501 0.14798 0.15
Martinique  0.00934 0.00919 0.00917 0.00906 0.00813 0.00979 0.01053 0.01194 0.01429 0.02028 0.02189 0.01806 0.02012 0.02504 0.02706 0.02766 0.02769 0.02772 0.02777 0
Montserrat  0.00026 0.00028 0.00028 0.00028 0.00028 0.00031 0.00031 0.00035  0.0004  0.0004 0.00053 0.00049 0.00057 0.00057 0.00057 0.00066 0.00062 0.00066 0.00071 0
NetherlandsAntilles 0.23781 0.22241 0.21486 0.19761 0.18614 0.15532  0.1517 0.15405 0.14343 0.15139 0.14774 0.14015 0.13817 0.11234 0.14497 0.15282 0.15243 0.16181 0
Nicaragua  0.03277 0.03356 0.03337 0.03243 0.03494  0.0391  0.0383 0.03915 0.03866 0.04386 0.04126 0.04021 0.04461 0.04185 0.04569 0.04828 0.04986 0.05075 0.05376 0.
```

The above picture is of the data set which consists of year wise electricity consumption of all countries.

```
Main menu
1)enter country name
2)enter year
3)display highest consumption in given year
4)display lowest consumption
5)analysis between 2 countries electric consumption
6)exit
Enter your choice
```

The above picture is the menu of our program which gives you 5 options to choose.

5. TABLES
The following table represents the year wise electricirty consumption.

COUNTRY	1980	1981	1982
BERMUDA	0.00793	0.00686	0.00727
CANADA	9.6947	9.58952	9.20637
GREENLAND	0.00791	0.00746	0.00722

The program gives you highest consumption in the year 1980 = 9.6947btu
and also the lowest consumption in the year 1980 = 0.00791btu

6. REFERENCES
Reference to textbooks, monographs, theses and technical reports should include:
- Year of publication;
- Full title of the publication;
- Publisher;
- City of publication;
- Inclusive page numbers of the work being cited.

Reference to websites should include:
- US government database
- www.data.gov
- Geeksforgeeks
- http://www.geeksforgeeks.org/hashing-data-structure/