|  |  |
| --- | --- |
|  |  |
| Performance Report |  |
|  |  |
|  | SUBJECT: ADA |
|  | SUBMITTED TO:MS. SHIVANGI RAJPUT |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  | Algorithm Analysis Analysis of efficiency of an algorithm can be performed at two different stages, before implementation and after implementation, as  ImageA priori analysis − This is defined as theoretical analysis of an algorithm. Efficiency of algorithm is measured by assuming that all other factors e.g., speed of processor, are constant and have no effect on implementation.  A posterior analysis − This is defined as empirical analysis of an algorithm. The chosen algorithm is implemented using programming language. Next the chosen algorithm is executed on target computer machine. In this analysis, actual statistics like running time and space needed are collected.  Algorithm analysis is dealt with the execution or running time of various operations involved. Running time of an operation can be defined as number of computer instructions executed per operation. Algorithm Complexity The complexity of an algorithm f(N) provides the running time and / or storage space needed by the algorithm with respect of N as the size of input data.  Suppose X is treated as an algorithm and N is treated as the size of input data, the time and space implemented by the Algorithm X are the two main factors which determine the efficiency of X.  Time Factor − The time is calculated or measured by counting the number of key operations such as comparisons in sorting algorithm.  Space Factor − The space is calculated or measured by counting the maximum memory space required by the algorithm. **Time Complexity** **Time complexity** is a concept in computer science that deals with the quantification of the amount of time taken by a set of code or algorithm to process or run as a function of the amount of input. In the other words, time complexity is essentially efficiency, or how long a program function takes to process a given input. **Space Complexity** The space complexity of an algorithm or a computer program is the amount of memory space required to solve an instance of the computational problem as a function of characteristics of the input. It is the memory required by an algorithm until it executes completely.  Time and Space Complexity Tutorials &amp; Notes | Basic Programming |  HackerEarth Project ComplexitiesTime ComplexitiesProduct Details **Time Complexity: O(m\*n)**  Where,  m = no. of records in the ProductRecords table  n = parameters called from ProductRecords table  (Here 3 fields are: SU, Product\_Name, and Cost)  **SQL Query: -**  pst = con.prepareStatement("SELECT \* FROM ProductRecords ORDER BY SU ASC");  https://lh5.googleusercontent.com/F08aBD2dOJuKtqIFC98Iqnh_PQ-SaITP0d5-TDn9HhcFBFd7LIf91vUxKsA7lz3wazRaDzCiRD7yYl7Lc1EEa4mpFdgWUvEiw6lA8AU6cmYRWjdrJERsqcDX7bHCAadCgUl_ou4 Customer Details **Time Complexity: O(m\*n)**  Where,  m = no. of records in the CustomerRecords table  n = parameters called from ProductRecords table  (Here 8 fields are: Customer\_Name, Customer\_Phno, Customer\_Email, Customer\_Address, Seller, Total\_Price, Purchase\_Time, Bill\_No)  **SQL Query: -**  String sql = "SELECT \* FROM CustomerRecords ORDER BY Bill\_No DESC";  https://lh4.googleusercontent.com/HuwU8g5UkahiPC9P26q5gsBSS95CoEMMvTB7k91fCTIwNBEasNX6WrwKOM_vbJLiYzUDm2Yswc7bHWzZu6_UPrKjIxWauyaoYNbM4yAZ5-IAjpvlNgpO64tXuE34GgnwBbsyGlM Login **Time Complexity: O(m\*n)**  Where,  m = no. of records/rows in Registration table  n = parameters called from Registration table  (Here 2 fields are: E-mail and password)  **SQL Query: -**  String sql = "SELECT \* FROM Registration WHERE Email = ? AND Password = ?";  https://lh5.googleusercontent.com/EyBt45pDf_WZc9RswHVsnDA_xqFCoe990vonz3puDRxmowRWxKyw2qcgndEtfcJBH7ASnYSQIU3nvV0twx1WHNl-ulBHZFIa8gFL-u2w5kCQqryvnKOrQm-5UlPvXHa1SEQ5be4 Edit Profile **Time Complexity: O(m\*n\*o)**  Where,  m = no. of records in Registration table  n = no. of columns in Registration table  (Here 7 fields are: r.Name, r.DOB, r.Email, r.Mobile\_Number, r.Gender, r.Address, r.Password)  o = no. of records in Login table  (Here 7 fields are: r.Name, r.DOB, r.Email, r.Mobile\_Number, r.Gender, r.Address, r.Password)  **SQL Query: -**  query1 = "SELECT r.Name, r.DOB, r.Email, r.Mobile\_Number, r.Gender, r.Address, r.Password FROM Registration r, Login l WHERE  r.Email = l.UID";  https://lh4.googleusercontent.com/UrYHA1SirfM7GTL61tvFlICyMskSaXNd-DDUEh-p1Zh0fXVlGwCr2qvHLDGIVO1Ze21O9E3W3KzhQFvqyNdi4th2UlZ44E4kQypHQzKKxiePxkthAdpZpfhuteq-1wX6kCqqhl0 Bill Generation **Time Complexity: O( klog(k)\*m\*n)**  Where,  m = no. Of records in ProductRecords table  n = no. Of columns in ProductRecords table  (Here 2 fields are: Cost, ProductName)  k = no of records in Customer\_Details table  (Sorting is performed according to Bill\_No)  **SQL Query: -**  query1 = "select c.Bill\_No , p.Product\_Name,p.Cost from CustomerRecords c , ProductRecords p where p.SU='"+psq+"'order by c.Bill\_No desc limit 1";  https://lh5.googleusercontent.com/_rof8GtaMHLWwEnulldZLoQL4LWvk23H1vUUJqagJZwhopM0IAIj6m0pZYra9lmgaQnQlo4G5wXI83yl7wSe5mP6KBvpt5cJoVfaGBymJ5L1zheMr9D7_teBN_v5YCDWrFClTws Registration **Time Complexity: O(n)**  Where,  n = no. of columns in Registration table  **SQL Query: -**  query="Insert into Registration values ('"+uname+" ',' "+udob+"', '"+uemail+"', '"+uphno+"', '"+ugender+"', '"+uaddress+"', '"+upassword+"')";  https://lh5.googleusercontent.com/n6E8OKk38iv74lT8_zRxWULOHNDKrk0FJpN0fMo9wVaAyNx4ApTmYNyqV89Q8aY8Wmsg-x1lpjFlNQ8D4UGjh3O5Kv1I33zQnZutwosRBR8PdWB50J6vSsDuSzly5OciG6cymrw Final Bill **Time Complexity: O(p\*q\*r\*s)**  Where,  p = no. of records in ProductRecords table  q = parameters called from ProductRecords table  (Here 2 fields are: Product\_Name and Cost)  r = no. of records in Bill table  s = parameters called from ProductRecords table  (Here 2 fields are: SU and QTY)  **SQL Query: -**  billQuery = "select p.Product\_Name , p.Cost , b.SU, b.QTY from ProductRecords p , Bill b where b.Bill\_No=? AND b.SU=p.SU";  https://lh4.googleusercontent.com/QbIeykp40jJeDqjK331NTXY1hyAiGz374ShpSGXAFCMdypKujNrTRmlLdVRTAaByhuzgwHkm56L2fDzv0k1UXV7w8QSPBttaWa66D7uzaZWejia_OZshEqyDHogS7JlC60rGjYg Customer Bill Info **Time Complexity: O(p\*q\*r\*s)**  Where,  p = no. of records in ProductRecords table  q = parameters called from ProductRecords table  (Here 2 fields are: Product\_Name and Cost)  r = no. of records in Bill table  s = parameters called from ProductRecords table  (Here 2 fields are: SU and QTY)  **SQL Query: -**  billQuery = "select p.Product\_Name , p.Cost , b.SU, b.QTY from ProductRecords p , Bill b where b.Bill\_No=? AND b.SU=p.SU";  https://lh5.googleusercontent.com/H4ua3LsLlaWyN-DfN-dYRdGrS7Sat911QvFCTELVImCMfzNVtqrxom87YXHSsMkSHBVPL5ag15uNW3BM7WI469F9OHaI-XR-XujpOgoN7UdmJr6fZv71HKOAcDLKAr-j6WVfPvc Dashboard **Time Complexity: O(m\*n)**  Where,  m = number of rows in Registration table  n = parameters called from Registration table  (Here 3 fields are: Name, Email, Mobile\_Number)  **SQL Query: -**  QUERY = "select r.Name, r.Email, r.Mobile\_Number, l.UID from Registration r, Login l where r.Email = l.UID ORDER BY l.SNO DESC LIMIT 1";  https://lh5.googleusercontent.com/eL18spQM4PRmUku6NH5eHFmQs3-QjRbX8bfVpAAoiiZmYUZBYEOOho9qICdbWhzwhbeyryHTww96vfeythKYhqLIfLVUzFXNAVusZdliHzpqDcmJykZW_KWfWIq7kvCrO5QFUXI Shop Details **Time Complexity: O(n)**  Where,  n: number of parameters called from ShopDetails table  (Here 6 fields are: ID, Shop\_Name, Owner\_Name, Phone\_Number, Email, Shop\_Address)  **SQL Query: -**  shopQuery = "SELECT \* FROM ShopDetails"  https://lh4.googleusercontent.com/YfG7J8jF8Zb9J1KQVh57BmGM5JGZdtt6guXNKqr3h_SxieYPEuTArWFPWDOganzGPCBwAPAdW-XpJqgnwTliNHvybHU3dQKrXoFKcN9Mp33nCpEfJhb6ts6i0PS48ii4NVuetIA Space ComplexitiesCPU UTILIZATION This data and graph depict the CPU usage on the startup of the APP.   RAM UTILIZATION This data and graph depict the RAM usage on the startup of the APP.   STORAGE UTILIZATION This data and graph depict the storage utilized on the disk. | |  |

|  |  |  |
| --- | --- | --- |
|  |  |  |
| DEVELOPED BY:  AYUSH LUTHRA MANAS SHEKHAR ALANKAR SHARMA  SAURABH WADHWA KESHAV GARG OM GUPTA |
|  |