**Proposer Details**

| Group Number | *[G42]* |
| --- | --- |
| Registration Number of Group Members | 2021-CS-22, 2021-CS-37, 2021-CS-55 |

**Proposal Details**

|  |  |
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| ***Project*** |  |
| Proposed Project Title | PayCash (Mobile Banking) |
| Executive Summary | *This project is about “to facilitate people in the form of financial services with ease and security.”*  *PayCash Mobile Account is an actual bank account. Through this Mobile Account you can enjoy complete freedom of accessing financial services anywhere, anytime! More importantly, you don’t have to rely on traveling to a Bank branch, wait at queues or complete any documentation. Customers can make deposits or withdrawals through any PayCash Customer Care Center.*  *Features:*  *Mobile Account Registration: You can get your Mobile Account registered simply from your mobile app or from nearest PayCash branch. Mobile Account registration is absolutely free of cost..*  *Cash Deposit: You can deposit cash into your Mobile Account absolutely free of cost from any PayCash business centers and franchises. To deposit cash into your Mobile Account, just provide your Mobile number and cash to Agent.*  *Cash Withdrawal: You can withdraw cash from any PayCash business centre. You just need to provide your Mobile number to the Agent, confirm withdrawal with your MPIN and collect cash.*  *Money Transfer: you can send money to any other mobile number ( holding PayCash account), bank account, and CNIC across Pakistan.*  *Pay Utility Bills: You can pay all your Utility Bills through PayCash Mobile Account or through PayCash Customer Care Center.*  *Mobile Load and Bundles: By using a PayCash Mobile Account, you can purchase Mobile Load for ANY network anytime anywhere! Not only for your self but also for your friends and family members.*  *Admin(Franchise Owner) can register new user, view all registered users, search any user, deposit money into user account, view deposited money, view transactions, view paid utility bills, view bought mobile load and bundles, view and edit mobile bundles, view and edit terms and conditions.*  *Moreover, we will scrap data from different mobile companies that also have mobile banking in their telecommunication network. We also will perform different sorting algorithms to sort users based on their credentials.* |
| ***Business Case*** |  |
| Outline the business need for the project | *One can send or receive money, pay bill through his mobile phone using PayCash.* *More importantly, you don’t have to rely on traveling to a Bank branch, wait at queues or complete any documentation.* *You can enjoy complete freedom of accessing financial services anywhere, anytime!* |
| End user of the product | *Everyone who has a registered mobile number can use this app. Only registration with few information is required.* |
| Motivation for Project | *I got the idea for this project from my JazzCash app which I have been using for quite some time now.* |
| State the level of impact expected should the project proceed and implications of not proceeding | *Through this project, we can make the Pakistan a global bank where access to the financial services and security is at your finger tips which will be very beneficial in terms of business.* |
| ***Technical Details*** |  |
| Name of Entity | *[List the name of entity that you are going to scrap]* |
| Attributes of Entity  (Minimum seven attributes/rows can be increased) | |  |  |  | | --- | --- | --- | | *Name* | *Data Type* | *Description* | | UserName | String |  | | Mobile Number | String |  | | Mpin(password) | string or int |  | | Balance | Int |  | | CNIC No. |  |  | | Address |  |  | | Email |  |  | |  |  |  | |
| Sample of Scrapping Source | *Due to internet problem of a colleague, this part was missed* |
| Gitlab Repository Link | *https://gitlab.com/bilalbisharat/paycash.git* |
| Sorting Algorithms |  |
| |  |  | | --- | --- | | **Algorithm Name** | **Description(Each algorithm in 2-3 lines)** | | Insertion Sort | Insertion sort is a sorting algorithm that places an unsorted element at its suitable place in each iteration | | Merge Sort | It is a is a divide and conquer algorithm that continuously cuts down a list into multiple sublists until each has only one item, then merges those sublists into a sorted list. It is one of the most efficient sorting algorithm. | | Bubble Sort | This sorting algorithm works by repeatedly swapping the adjacent elements if they are in the wrong order. | | Hybrid Merge Sort | This sorting algorithm is based on Insertion Sort and Merge Sort.  It first sort small pieces using Insertion Sort, then merges the pieces using a merge of merge sort. | | Quick Sort | Quick Sort is a divide and conquer algorithm. It picks an element as a pivot. It creates two empty arrays to hold elements less than the pivot value and elements greater than the pivot value, and then recursively sort the sub arrays. | | Counting Sort | It is a linear time sorting algorithm that sorts the elements of an array by counting the number of occurrences of each unique element in the array. | | Radix Sort | It is a linear time sorting algorithm that sorts digit by digit starting from least significant digit to most significant digit. Radix sort uses counting sort as a subroutine to sort. | | Bucket Sort | Bucket sort is mainly useful when input is uniformly distributed over a range such as floating point numbers which are in range from 0.0 to 1.0 and are uniformly distributed across the range. | | |
| Searching Algorithms | * *Linear Search: In this, the list or array is traversed sequentially and every element is checked* * *Binary Search: In this type of searching algorithm, the center of the searching structure is repeatedly targeted and divides the search space in half. It is more efficient than linear search* |
| Searching Filters for each data type | * *For string data type, the search will be in ascending or descending order* * *For int data type, the searching will also be in ascending or descending order* |
| Multi-Level Sorting | We will achieve multi-level sorting by sorting the users data by mobile number (int type), by CNIC No.(int type) or by name (string type) in ascending or descending order. |
| Any other features | We will provide its detail later ( in the documentation, if we would manage time for it) |
| ***Interfaces for your project*** |  |
| *[Draw layouts in the pencil tool. For each picture of the UI, provide the following table.]*   |  |  |  | | --- | --- | --- | | UI Component Name | Type of UI component | Purpose of UI Component/Other details | | Welcome Page | Starting Page | Welcome page is a main page from where we have to decide whether to login or signup |  |  |  |  | | --- | --- | --- | | UI Component Name | Type of UI component | Purpose of UI Component/Other details | | SignUp Page | Registration page | In order to access the app sign up is necessary |   C:\Users\DELL\AppData\Local\Microsoft\Windows\INetCache\Content.Word\SignUP_Page_Frame.png   |  |  |  | | --- | --- | --- | | UI Component Name | Type of UI component | Purpose of UI Component/Other details | | Login Page | Login page | In order to access the app login is necessary |   E:\BSCS\3rd_Semester_Data\DSA_Lab\MidTerm_Project\paycash\Pencil_UI\WireFrames\Login_Page_Frame.png  **Customer Features**   |  |  |  | | --- | --- | --- | | UI Component Name | Type of UI component | Purpose of UI Component/Other details | | User Dashboard | User Main Page | To give access to user among features |  |  |  |  | | --- | --- | --- | | UI Component Name | Type of UI component | Purpose of UI Component/Other details | | Send Money | User feature | Send money to any other user of the app | | Pay Utility Bills | User feature | Pay utility bills through app | | Mobile load | User feature | Buy mobile load for any network | | Mobile Bundles | User feature | Subscribe to the mobile packages | | My account | User feature | Check your account | | Terms | Company policy | Company policy to follow | | FAQ’s | For user help | Frequently asked questions to know more about app features | | About us | General information | To know all about the company | | Help | Help page | In order to get help about any feature |   **Admin Features**   |  |  |  | | --- | --- | --- | | UI Component Name | Type of UI component | Purpose of UI Component/Other details | | Admin Dashboard | Admin Main Page | To give access to admin to maintain the app |   E:\BSCS\3rd_Semester_Data\DSA_Lab\MidTerm_Project\paycash\Pencil_UI\WireFrames\admindashboard.png   |  |  |  | | --- | --- | --- | | UI Component Name | Type of UI component | Purpose of UI Component/Other details | | All Users | Admin feature | Showing list of all the registered users |   E:\BSCS\3rd_Semester_Data\DSA_Lab\MidTerm_Project\paycash\Pencil_UI\WireFrames\alluserspage.png   |  |  |  | | --- | --- | --- | | UI Component Name | Type of UI component | Purpose of UI Component/Other details | | Register new user | Admin feature | In order to register new user | | Deposit Money | Admin feature | To deposit money into customer account | | Withdraw money | Admin feature | Withdraw money by the customer | | View Deposit Details | Admin feature | Details of deposited money by any user | | View transaction details | Admin feature | Details of transactions happened between users all the time | | View paid utility bills | Admin feature | Details of utility bills paid all the time by the customer | | View or edit mobile bundles | Admin feature | Details of mobile bundles | | View or edit terms | Admin feature | Policy of the company | | |