Institute of Technology of Cambodia

Department of Information and Communication Engineering

Subject : Algorithm and Programming II

Professor : Mr. Bou Channa

Group : I3 GIC (C)

Student 's name: Rotha Dapravith

ID: e20190915

Report Project Algorithm and Programming

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1.Product Management

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```cpp
1    #include<iostream>
2    #include<conio.h>
3    #include<stdio.h>
4    #include<iomanip>
5    #include<fstream>
6    using namespace std;
7
8    fstream file;
9
10   struct Date{
11       int dd;
12       int mm;
13       int yy;
14   };
15
16   struct Product{
17       int ID;
18       string category;
19       string name;
20       string bar_code;
21       int quantity;
22       Date Product_date;
23       Date Expired_date;
24       float price;
25   };
26
27   Product p[100];
28
29   void createProduct(struct Product p[],int size){
30       file.open("Product.txt",ios::app);
31       for(int i=0;i<size;i++){
32           cout<<"Products info #"<<i+1<<endl;
33           cout<<"Enter product ID: ";cin>>p[i].ID;
34           cout<<"Enter category of product: ";cin>>p[i].category;
35           cout<<"Enter product name: ";cin>>p[i].name;
36           cout<<"Enter bar code of product: ";cin>>p[i].bar_code;
37           cout<<"Enter quantity of product: ";cin>>p[i].quantity;
38           cout<<"Enter product date( day month year ): ";cin>>p[i].Product_date.dd>>p[i].Product_date.mm>>p[i].Product_date.yy;
39           cout<<"Enter expired date( day month year ): ";cin>>p[i].Expired_date.dd>>p[i].Expired_date.mm>>p[i].Expired_date.yy;
40           cout<<"Enter product price($): ";cin>>p[i].price;
41
42           file<<left<<setw(15)<<p[i].ID;
43           file<<left<<setw(15)<<p[i].category;
44           file<<left<<setw(15)<<p[i].name;
45           file<<left<<setw(15)<<p[i].bar_code;
46           fil...<<left<<setw(15)<<p[i].quantity;
```

Start here | Rotha_Dapravith_Algo_Project.cpp | *Product_Management.h ✕ | Book_store_management.h | Number_testing.h | Math_suit_computation.h | Number_convertion_system.h | time_stop.cpp

```cpp
41
42           file<<left<<setw(15)<<p[i].ID;
43           file<<left<<setw(15)<<p[i].category;
44           file<<left<<setw(15)<<p[i].name;
45           file<<left<<setw(15)<<p[i].bar_code;
46           file<<left<<setw(15)<<p[i].quantity;
47           file<<p[i].Product_date.dd<<" \t ";
48           file<<p[i].Product_date.mm<<" \t ";
49           file<<left<<setw(20)<<p[i].Product_date.yy;
50           file<<p[i].Expired_date.dd<<" \t ";
51           file<<p[i].Expired_date.mm<<" \t ";
52           file<<left<<setw(20)<<p[i].Expired_date.yy;
53           file<<left<<setw(15)<<p[i].price<<endl;
54       }
55
56       file.close();
57       cout<<"Successfully Created!";
58       cout<<endl;
59   }
60   void displayAllProducts(struct Product p[]){
61       cout<<"\n2. Display information all products\n";
62       file.open("Product.txt",ios::in);
63       int i=0;
64       while(!file.eof()){
65           file>>p[i].ID;
66           file>>p[i].category;
67           file>>p[i].name;
68           file>>p[i].bar_code;
69           file>>p[i].quantity;
70           file>>p[i].Product_date.dd;
71           file>>p[i].Product_date.mm;
72           file>>p[i].Product_date.yy;
73           file>>p[i].Expired_date.dd;
74           file>>p[i].Expired_date.mm;
75           file>>p[i].Expired_date.yy;
76           file>>p[i].price;
77           i = i + 1;
78       }
79       cout<<endl;
80       cout<<left<<setw(15)<<"ID"<<left<<setw(15)<<"Category"<<left<<setw(15)<<"Name"<<left<<setw(15)<<"Bar Code"<<left<<setw(15)<<"Quantity"<<left<<setw(35)<<"Product Date(dd
81       "Expired Date(dd mm yyyy)"<<left<<setw(20)<<"Price($)/unit"<<endl;
82       for(int k=0;k<i-1;k++){
83           cout<<left<<setw(15)<<p[k].ID;
84           cout<<left<<setw(15)<<p[k].category;
85           cout<<left<<setw(15)<<p[k].name;
```

Start here | Rotha_Dapravith_Algo_Project.cpp | *Product_Management.h ✕ | Book_store_management.h | Number_testing.h | Math_suit_computation.h | Number_convertion_system.h | time_stop.cpp

```cpp
79       cout<<endl;
80       cout<<left<<setw(15)<<"ID"<<left<<setw(15)<<"Category"<<left<<setw(15)<<"Name"<<left<<setw(15)<<"Bar Code"<<left<<setw(15)<<"Quantity"<<left<<setw(35)<<"Product Date(dd
81       "Expired Date(dd mm yyyy)"<<left<<setw(20)<<"Price($)/unit"<<endl;
82       for(int k=0;k<i-1;k++){
83           cout<<left<<setw(15)<<p[k].ID;
84           cout<<left<<setw(15)<<p[k].category;
85           cout<<left<<setw(15)<<p[k].name;
86           cout<<left<<setw(15)<<p[k].bar_code;
87           cout<<left<<setw(15)<<p[k].quantity;
88           cout<<p[k].Product_date.dd<<" \t ";
89           cout<<p[k].Product_date.mm<<" \t ";
90           cout<<left<<setw(20)<<p[k].Product_date.yy;
91           cout<<p[k].Expired_date.dd<<" \t ";
92           cout<<p[k].Expired_date.mm<<" \t ";
93           cout<<left<<setw(20)<<p[k].Expired_date.yy;
94           cout<<left<<setw(15)<<p[k].price<<endl;
95       }
96       cout<<endl;
97       file.close();
98   }
99   void displayProductByID(struct Product p[]){
100      int ID;
101      cout<<"\n3. Display information a product by ID\n";
102      cout<<"\nEnter product ID to display: ";cin>>ID;
103      file.open("Product.txt",ios::in);
104      int i=0;
105      while(!file.eof()){
106          file>>p[i].ID;
107          file>>p[i].category;
108          file>>p[i].name;
109          file>>p[i].bar_code;
110          file>>p[i].quantity;
111          file>>p[i].Product_date.dd;
112          file>>p[i].Product_date.mm;
113          file>>p[i].Product_date.yy;
114          file>>p[i].Expired_date.dd;
115          file>>p[i].Expired_date.mm;
116          file>>p[i].Expired_date.yy;
117          file>>p[i].price;
118          i = i + 1;
119      }
120      cout<<endl;
121      cout<<left<<setw(15)<<"ID"<<left<<setw(15)<<"Category"<<left<<setw(15)<<"Name"<<left<<setw(15)<<"Bar Code"<<left<<setw(15)<<"Quantity"<<left<<setw(35)<<"Product Date(dd
122      "Expired Date(dd mm yyyy)"<<left<<setw(20)<<"Price($)/unit"<<endl;
123      for(int k=0;k<i-1;k++){
124          if(p[k].ID == ID){
```

Start here Rotha_Dapravith_Algo_Project.cpp *Product_Management.h X Book_store_management.h Number_testing.h Math_suit_computation.h Number_convertion_system.h time_stop.cpp

```
121      cout<<left<<setw(15)<<"ID"<<left<<setw(15)<<"Category"<<left<<setw(15)<<"Name"<<left<<setw(15)<<"Bar Code"<<left<<setw(15)<<"Quantity"<<left<<setw(35)<<"Product Date(dd mm yyyy)"<<left<<setw(4(
122      "Expired Date(dd mm yyyy)"<<left<<setw(20)<<"Price($)/1unit"<<endl;
123      for(int k=0;k<i-1;k++){
124          if(p[k].ID != ID){
125              cout<<left<<setw(15)<<p[k].ID;
126              cout<<left<<setw(15)<<p[k].category;
127              cout<<left<<setw(15)<<p[k].name;
128              cout<<left<<setw(15)<<p[k].bar_code;
129              cout<<left<<setw(15)<<p[k].quantity;
130              cout<<p[k].Product_date.dd<<" \t ";
131              cout<<p[k].Product_date.mm<<" \t ";
132              cout<<left<<setw(20)<<p[k].Product_date.yy;
133              cout<<p[k].Expired_date.dd<<" \t ";
134              cout<<p[k].Expired_date.mm<<" \t ";
135              cout<<left<<setw(20)<<p[k].Expired_date.yy;
136              cout<<left<<setw(15)<<p[k].price<<endl;
137          }
138      }
139      cout<<endl;
140      file.close();
141  }
142  void deleteProductByID(struct Product p[]){
143      int ID;
144      cout<<"\n4. Delete a product by ID\n";
145      cout<<"\nEnter product ID to delete: ";cin>>ID;
146      file.open("Product.txt",ios::in);
147      ofstream file2;
148      file2.open("Product2.txt");
149      int i=0;
150      while(!file.eof()){
151          file>>p[i].ID;
152          file>>p[i].category;
153          file>>p[i].name;
154          file>>p[i].bar_code;
155          file>>p[i].quantity;
156          file>>p[i].Product_date.dd;
157          file>>p[i].Product_date.mm;
158          file>>p[i].Product_date.yy;
159          file>>p[i].Expired_date.dd;
160          file>>p[i].Expired_date.mm;
161          file>>p[i].Expired_date.yy;
162          file>>p[i].price;
163          i = i + 1;
164      }
165      for(int k=0;k<i-1;k++){
166          if(p[k].ID != ID){
167              file2<<left<<setw(15)<<p[k].ID;
168              file2<<left<<setw(15)<<p[k].category;
169              file2<<left<<setw(15)<<p[k].name;
170              file2<<left<<setw(15)<<p[k].bar_code;
171              file2<<left<<setw(15)<<p[k].quantity;
172              file2<<p[k].Product_date.dd<<" \t ";
173              file2<<p[k].Product_date.mm<<" \t ";
174              file2<<left<<setw(20)<<p[k].Product_date.yy;
175              file2<<p[k].Expired_date.dd<<" \t ";
176              file2<<p[k].Expired_date.mm<<" \t ";
```

Start here   Rotha_Dapravith_Algo_Project.cpp   *Product_Management.h X   Book_store_management.h   Numb

```
171                  file2<<left<<setw(15)<<p[k].quantity;
172                  file2<<p[k].Product_date.dd<<" \t ";
173                  file2<<p[k].Product_date.mm<<" \t ";
174                  file2<<left<<setw(20)<<p[k].Product_date.yy;
175                  file2<<p[k].Expired_date.dd<<" \t ";
176                  file2<<p[k].Expired_date.mm<<" \t ";
177                  file2<<left<<setw(20)<<p[k].Expired_date.yy;
178                  file2<<left<<setw(15)<<p[k].price<<endl;
179              }
180          }
181          file.close();
182          file2.close();
183          remove("Product.txt");
184          rename("Product2.txt","Product.txt");
185          cout<<"\nSuccessfully deleted!\n";
186          cout<<endl;
187  }
188
189  void updateProductByID(struct Product p[]){
190      Product proNew;
191      int ID;
192      cout<<"\n5. Update a product by ID";
193      cout<<"\nEnter product ID to update: ";cin>>ID;
194      file.open("Product.txt",ios::in);
195      ofstream file2;
196      file2.open("Product2.txt");
197      int i=0;
198      while(!file.eof()){
199          file>>p[i].ID;
200          file>>p[i].category;
201          file>>p[i].name;
202          file>>p[i].bar_code;
203          file>>p[i].quantity;
204          file>>p[i].Product_date.dd;
205          file>>p[i].Product_date.mm;
206          file>>p[i].Product_date.yy;
207          file>>p[i].Expired_date.dd;
208          file>>p[i].Expired_date.mm;
209          file>>p[i].Expired_date.yy;
210          file>>p[i].price;
211          i = i + 1;
212      }
213      for(int k=0;k<i-1;k++){
214          if(p[k].ID != ID){
215              file2<<left<<setw(15)<<p[k].ID;
216              file2<<left<<setw(15)<<p[k].category;
217              file2<<left<<setw(15)<<p[k].name;
218              file2<<left<<setw(15)<<p[k].bar_code;
219              file2<<left<<setw(15)<<p[k].quantity;
220              file2<<p[k].Product_date.dd<<" \t ";
221              file2<<p[k].Product_date.mm<<" \t ";
222              file2<<left<<setw(20)<<p[k].Product_date.yy;
223              file2<<p[k].Expired_date.dd<<" \t ";
224              file2<<p[k].Expired_date.mm<<" \t ";
225              file2<<left<<setw(20)<<p[k].Expired_date.yy;
226              file2<<left<<setw(15)<<p[k].price<<endl;
```

Start here | Rotha_Dapravith_Algo_Project.cpp | Product_Management.cpp | Product_Management.h ✕ | Book_store_management.h | Number_testing.h | Math_suit_computation.h | Number_convertion_system.h | time_stop.cpp

```cpp
257        cout<<endl;
258    }
259    void searchProductByID(struct Product p[]){
260        int ID;
261        cout<<"\n3. Display information a product by ID\n";
262        cout<<"\nEnter product ID to display: ";cin>>ID;
263        file.open("Product.txt",ios::in);
264        int i=0;
265        while(!file.eof()){
266            file>>p[i].ID;
267            file>>p[i].category;
268            file>>p[i].name;
269            file>>p[i].bar_code;
270            file>>p[i].quantity;
271            file>>p[i].Product_date.dd;
272            file>>p[i].Product_date.mm;
273            file>>p[i].Product_date.yy;
274            file>>p[i].Expired_date.dd;
275            file>>p[i].Expired_date.mm;
276            file>>p[i].Expired_date.yy;
277            file>>p[i].price;
278            i = i + 1;
279        }
280        cout<<endl;
281        cout<<left<<setw(15)<<"ID"<<left<<setw(15)<<"Category"<<left<<setw(15)<<"Name"<<left<<setw(15)<<"Bar Code"<<left<<setw(15)<<"Quantity"<<left<<setw(35)<<"Product Date(dd mm yyyy)"<<left<<setw(40)
282        "Expired Date(dd mm yyyy)"<<left<<setw(20)<<"Price($)/1unit"<<endl;
283        for(int k=0;k<i-1;k++){
284            if(p[k].ID == ID){
285                cout<<left<<setw(15)<<p[k].ID;
286                cout<<left<<setw(15)<<p[k].category;
287                cout<<left<<setw(15)<<p[k].name;
288                cout<<left<<setw(15)<<p[k].bar_code;
289                cout<<left<<setw(15)<<p[k].quantity;
290                cout<<p[k].Product_date.dd<<" \t ";
291                cout<<p[k].Product_date.mm<<" \t ";
292                cout<<left<<setw(20)<<p[k].Product_date.yy;
293                cout<<p[k].Expired_date.dd<<" \t ";
294                cout<<p[k].Expired_date.mm<<" \t ";
295                cout<<left<<setw(20)<<p[k].Expired_date.yy;
296                cout<<left<<setw(15)<<p[k].price;
297            }
298        }
299        cout<<endl<<endl;
300        file.close();
301    }
302
303
304
305
306
307
308
309
310
311
312
```

2.Book store Management

Start here | Rotha_Dapravith_Algo_Project.cpp | Product_Management.cpp | Book_store_management.h ✕ | Number_testing.h | Math_suit_computation.h | Number_convertion_system.h | time_stop.cpp

```cpp
1    #include<iostream>
2    #include<conio.h>
3    #include<stdio.h>
4    #include<iomanip>
5    #include<fstream>
6
7    using namespace std;
8
9    fstream file1;
10
11   struct Book{
12       int ID;
13       string book_ISBN;
14       string title;
15       string published_year;
16       string author_name;
17       float price;
18   };
19   Book b[100];
20
21
22
23   void storeallbooks(struct Book b[],int size){
24       char ch;
25       file1.open("Book.txt",ios::app);
26       for(int i=0;i<size;i++){
27
28           cout<<"Detail Book #"<<i+1<<endl;
29           cout<<"Enter book ID: ";cin>>b[i].ID;
30           cout<<"Enter book ISBN: ";cin>>b[i].book_ISBN;
31           cout <<"Enter the book's title : ";
32           getline(cin,b[i].title);getline(cin,b[i].title);
33           cout<<"Enter published year: ";cin>>b[i].published_year;
34           cout<<"Enter author names: ";getline(cin,b[i].author_name);getline(cin,b[i].author_name);
35           cout<<"Enter book price($): ";cin>>b[i].price;
36           cout << "Do you want to add another book(y/n) | (Y|N) : ";
37           cin >> ch;
38           file1<<left<<setw(10)<<b[i].ID<<setw(16)<<b[i].book_ISBN<<setw(25)<<b[i].title<<setw(20)<<b[i].published_year<<setw(24)<<b[i].author_name<<left<<setw(21)<<b[i].price<<endl;
39       }
40       while(ch == 'y' || ch == 'Y');
41       file1.close();
42   }
43   void DisplayAllBookInfo(struct Book b[]){
44       cout<<"\n2. Display information all of books\n";
45       file1.open("Book.txt",ios::in);
46       int i=0;
47       while(!file1.eof()){
48           file1>>b[i].ID;
49           file1>>b[i].book_ISBN;
50           file1>>b[i].title;
51           file1>>b[i].published_year;
52           file1>>b[i].author_name;
53           file1>>b[i].price;
54           i = i + 1;
55       }
56       cout<<endl;
```

Start here | Rotha_Dapravith_Algo_Project.cpp | Product_Management.h | Book_store_management.h ✕ | Number_testing.h | Math_suit_computation.h | Number_convertion_system.h | time_stop.cpp

```cpp
51                 file1>>b[i].published_year;
52                 file1>>b[i].author_name;
53                 file1>>b[i].price;
54                 i = i + 1;
55             }
56         cout<<endl;
57         cout<<left<<setw(10)<<"Book ID"<<setw(16)<<"Book ISBN"<<setw(25)<<"Title"<<setw(16)<<"Published year"<<setw(24)<<"Writer"<<setw(21)<<"price($)"<<endl;
58         for(int k=0;k<i-1;k++){
59             cout<<left<<setw(10)<<b[k].ID;
60             cout<<left<<setw(16)<<b[k].book_ISBN;
61             cout<<left<<setw(25)<<b[k].title;
62             cout<<left<<setw(20)<<b[k].published_year;
63             cout<<left<<setw(24)<<b[k].author_name;
64             cout<<left<<setw(21)<<b[k].price<<endl;
65         }
66         cout<<endl;
67         file1.close();
68     }
69     void DisplayBookByPublished_year(struct Book b[]){
70         string published_year;
71         cout<<"\n3. Display a book by Published year\n";
72         cout<<"\nEnter book published year to display: ";cin>>published_year;
73         file1.open("Book.txt",ios::in);
74         int i=0;
75         while(!file1.eof()){
76             file1>>b[i].ID;
77             file1>>b[i].book_ISBN;
78             file1>>b[i].title;
79             file1>>b[i].published_year;
80             file1>>b[i].author_name;
81             file1>>b[i].price;
82             i = i + 1;
83         }
84         cout<<endl;
85         cout<<left<<setw(10)<<"Book ID"<<setw(16)<<"Book ISBN"<<setw(25)<<"Title"<<setw(16)<<"Published year"<<setw(24)<<"Writer"<<setw(21)<<"price($)"<<endl;
86         for(int k=0;k<i-1;k++){
87             if(b[k].published_year==published_year){
88                 cout<<left<<setw(10)<<b[k].ID;
89                 cout<<left<<setw(16)<<b[k].book_ISBN;
90                 cout<<left<<setw(25)<<b[k].title;
91                 cout<<left<<setw(20)<<b[k].published_year;
92                 cout<<left<<setw(24)<<b[k].author_name;
93                 cout<<left<<setw(21)<<b[k].price<<endl;
94             }
95         }
96         cout<<endl;
97         file1.close();
98     }
99     int searchByID(struct Book bk[]){
100        int ID;
101        cout<<"\nEnter a ID to search: ";cin>>ID;
102        file1.open("Book.txt",ios::in);
103        int i=0;
104        while(!file1.eof()){
105            file1>>b[i].ID;
106            file1>>b[i].book_ISBN;
```

Start here | Rotha_Dapravith_Algo_Project.cpp | Product_Management.h | Book_store_management.h ✕ | Number_testing.h | Math_suit_computation.h | Number_convertion_system.h | time_stop.cpp

```cpp
103        int i=0;
104        while(!file1.eof()){
105            file1>>b[i].ID;
106            file1>>b[i].book_ISBN;
107            file1>>b[i].title;
108            file1>>b[i].published_year;
109            file1>>b[i].author_name;
110            file1>>b[i].price;
111            i = i + 1;
112        }
113        cout<<endl;
114        cout<<"The information of a book by ID\n\n";
115        cout<<left<<setw(10)<<"Book ID"<<setw(16)<<"Book ISBN"<<setw(25)<<"Title"<<setw(20)<<"Published year"<<setw(24)<<"Writer"<<setw(21)<<"price($)"<<endl;
116        for(int k=0;k<i-1;k++){
117            if(bk[k].ID == ID){
118                cout<<left<<setw(10)<<b[k].ID;
119                cout<<left<<setw(16)<<b[k].book_ISBN;
120                cout<<left<<setw(25)<<b[k].title;
121                cout<<left<<setw(20)<<b[k].published_year;
122                cout<<left<<setw(24)<<b[k].author_name;
123                cout<<left<<setw(21)<<b[k].price<<endl;
124            }
125        }
126        cout<<endl;
127        file1.close();
128    }
129    void deleteByID(struct Book b[]){
130        cout<<"\n5. Delete a book by ID\n";
131 //     int ID = searchByID(bk);
132        string answer;
133        int ID;
134        cout<<"Enter a ID to delete this data: ";cin>>ID;
135        if(answer == "yes"){
136            file1.open("Book.txt",ios::in);
137            ofstream tempFile;
138            tempFile.open("temp.txt");
139            int i=0;
140            while(!file1.eof()){
141                file1>>b[i].ID;
142                file1>>b[i].book_ISBN;
143                file1>>b[i].title;
144                file1>>b[i].published_year;
145                file1>>b[i].author_name;
146                file1>>b[i].price;
147                i = i + 1;
148            }
149            for(int k=0;k<i-1;k++){
150                if(b[k].ID != ID){
151                    tempFile<<left<<setw(10)<<b[k].ID;
152                    tempFile<<left<<setw(16)<<b[k].book_ISBN;
153                    tempFile<<left<<setw(25)<<b[k].title;
154                    tempFile<<left<<setw(16)<<b[k].published_year;
155                    tempFile<<left<<setw(24)<<b[k].author_name;
156                    tempFile<<left<<setw(21)<<b[k].price<<endl;
157                }
158            }
```

Start here   Rotha_Dapravith_Algo_Project.cpp   Product_Management.h   Book_store_management.h   ✕

```cpp
158              }
159              file1.close();
160              tempFile.close();
161              remove("Book.txt");
162              rename("temp.txt","Book.txt");
163          cout<<"\nSuccessfully deleted!\n";
164      }else{
165          cout<<"\nThis ID does not exist in the list !!"<<endl;
166          cout<<"\nData couldn't Deleted!.\n";
167      }
168      cout<<endl;
169  }
170  void updateInFile(struct Book bk[]){
171      cout<<"\n6.  Update a book by ID\n";
172      Book bNew;
173  //      int  ID = searchByID(bk);
174      //string answer;
175      int ID;
176      cout<<"Enter a ID to update this data: ";cin>>ID;
177  //      if(answer == "yes"){
178          file1.open("Book.txt",ios::in);
179          ofstream tempFile;
180          tempFile.open("temp.txt");
181          int i=0;
182          while(!file1.eof()){
183              file1>>b[i].ID;
184              file1>>b[i].book_ISBN;
185              file1>>b[i].title;
186              file1>>b[i].published_year;
187              file1>>b[i].author_name;
188              file1>>b[i].price;
189              i = i + 1;
190          }
191          for(int k=0;k<i-1;k++){
192              if(b[k].ID != ID){
193                  tempFile<<left<<setw(10)<<b[k].ID;
194                  tempFile<<left<<setw(16)<<b[k].book_ISBN;
195                  tempFile<<left<<setw(25)<<b[k].title;
196                  tempFile<<left<<setw(16)<<b[k].published_year;
197                  tempFile<<left<<setw(24)<<b[k].author_name;
198                  tempFile<<left<<setw(21)<<b[k].price<<endl;
199              }
200          }
201          cout<<"Enter book new ID: ";cin>>bNew.ID;
202          cout<<"Enter book new ISBN: ";cin>>bNew.book_ISBN;
203          cout<<"Enter book new title: ";cin>>bNew.title;
204          cout<<"Enter published new year: ";cin>>bNew.published_year;
205          cout<<"Enter author new names: ";getline(cin,bNew.author_name);
206                                      getline(cin,bNew.author_name);
207          cout<<"Enter book new price: ";cin>>bNew.price;
208
209          tempFile<<left<<setw(10)<<bNew.ID;
210          tempFile<<left<<setw(16)<<bNew.book_ISBN;
211          tempFile<<left<<setw(25)<<bNew.title;
212          tempFile<<left<<setw(16)<<bNew.published_year;
213          tempFile<<left<<setw(24)<<bNew.author_name;
```

Start here   Rotha_Dapravith_Algo_Project.cpp   Product_Management.h   Book_store_management.h

```cpp
170  void updateInFile(struct Book bk[]){
171      cout<<"\n6.  Update a book by ID\n";
172      Book bNew;
173  //      int  ID = searchByID(bk);
174      //string answer;
175      int ID;
176      cout<<"Enter a ID to update this data: ";cin>>ID;
177  //      if(answer == "yes"){
178          file1.open("Book.txt",ios::in);
179          ofstream tempFile;
180          tempFile.open("temp.txt");
181          int i=0;
182          while(!file1.eof()){
183              file1>>b[i].ID;
184              file1>>b[i].book_ISBN;
185              file1>>b[i].title;
186              file1>>b[i].published_year;
187              file1>>b[i].author_name;
188              file1>>b[i].price;
189              i = i + 1;
190          }
191          for(int k=0;k<i-1;k++){
192              if(b[k].ID != ID){
193                  tempFile<<left<<setw(10)<<b[k].ID;
194                  tempFile<<left<<setw(16)<<b[k].book_ISBN;
195                  tempFile<<left<<setw(25)<<b[k].title;
196                  tempFile<<left<<setw(16)<<b[k].published_year;
197                  tempFile<<left<<setw(24)<<b[k].author_name;
198                  tempFile<<left<<setw(21)<<b[k].price<<endl;
199              }
200          }
201          cout<<"Enter book new ID: ";cin>>bNew.ID;
202          cout<<"Enter book new ISBN: ";cin>>bNew.book_ISBN;
203          cout<<"Enter book new title: ";cin>>bNew.title;
204          cout<<"Enter published new year: ";cin>>bNew.published_year;
205          cout<<"Enter author new names: ";getline(cin,bNew.author_name);
206                                      getline(cin,bNew.author_name);
207          cout<<"Enter book new price: ";cin>>bNew.price;
208
209          tempFile<<left<<setw(10)<<bNew.ID;
210          tempFile<<left<<setw(16)<<bNew.book_ISBN;
211          tempFile<<left<<setw(25)<<bNew.title;
212          tempFile<<left<<setw(16)<<bNew.published_year;
213          tempFile<<left<<setw(24)<<bNew.author_name;
214          tempFile<<left<<setw(21)<<bNew.price<<endl;
215
216          file1.close();
217          tempFile.close();
218          remove("Book.txt");
219          rename("temp.txt","Book.txt");
220          cout<<"\nSuccessfuly updated!";
221
222          cout<<"\nData which updated will be at bottom of the list.\n\n";
223
224  }
225
```

3.Number testing

```
Start here    Rotha_Dapravith_Algo_Project.cpp    Product_Managemen
 1       #include<iostream>
 2       #include<math.h>
 3       using namespace std;
 4
 5    bool isPrime(int num){
 6         bool flag=true;
 7         for(int i = 2; i <= num / 2; i++) {
 8             if(num % i == 0) {
 9                 flag = false;
10                 break;
11             }
12         }
13         return flag;
14    }
15
16    bool isPrime(int num);
17
18    bool checkPerfect(int no){
19         // 3
20         int i = 0;
21         int sum = 0;
22
23         // 4
24         while (i++ < no)
25         {
26             // 5
27             if (no % i == 0 && i < no)
28             {
29                 sum += i;
30             }
31         }
32
33         return sum == no;
34    }
35
36    int reverseNumber(int num);
37    int isPalindrome(int num);
38
39    int isPalindrome(int num){
40
41         if(num == reverseNumber(num))
42         {
43             return 1;
44         }
45
46         return 0;
```

```
Start here    Rotha_Dapravith_Algo_Project.cpp    Product_Management.h    Book_store_management.h
16    bool isPrime(int num);
17
18    bool checkPerfect(int no){
19         // 3
20         int i = 0;
21         int sum = 0;
22
23         // 4
24         while (i++ < no)
25         {
26             // 5
27             if (no % i == 0 && i < no)
28             {
29                 sum += i;
30             }
31         }
32
33         return sum == no;
34    }
35
36    int reverseNumber(int num);
37    int isPalindrome(int num);
38
39    int isPalindrome(int num){
40
41         if(num == reverseNumber(num))
42         {
43             return 1;
44         }
45
46         return 0;
47    }
48
49    int reverseNumber(int num){
50
51         // Finding number of digits in num
52         int digit = (int)log10(num);
53
54
55         if(num == 0)
56             return 0;
57         return ((num%10 * pow(10, digit)) + reverseNumber(num/10));
58    }
59
60
```

4.Basic Math

```
}else if(choice == 4){ //*basic Math
    int a, b;
    history.open("HistoryData.txt",ios::app);
    history<<"\nUser used feature Basic Math on "<<load;
    history.close();
// printing the sum of a and b
cout<<"\n\n\tEnter value of a: ";cin>>a;
cout<<"\n\n\tEnter value of b: ";cin>>b;

cout << "\n\n\tSummation a + b = " << (a + b) << endl;

// printing the difference of a and b
cout << "\n\n\tSubtraction a - b = " << (a - b) << endl;

// printing the product of a and b
cout << "\n\n\tMultiplication a * b = " << (a * b) << endl;

// printing the division of a by b
cout << "\n\n\tDivision a / b = " << (a / b) << endl;
cout<<endl<<endl;
system("\n\tpause");
```

5.Math Suit Computation

```
Start here   Rotha_Dapravith_Algo_Project.cpp   Product_Management.h   Book_store_management.h   Number_testing.h   Ma
1   #include<iostream>
2   using namespace std;
3
4   int add(int n){
5
6       if(n != 0)
7           return n + add(n - 1);
8       return 0;
9
10  }
11
12  void sumOfSeries (int number){ //1^2 + 2^2 + ... + n^2
13      int sum = 0;
14
15      sum = (number * (number + 1) * (2 * number + 1 )) / 6;
16
17      cout << "\n\n\tThe Sum of the Series of " << number << " \n\n\tnumber = " << sum << "\n\n";
18
19      for(int i = 1; i <= number; i++){
20
21          if (i != number){
22              cout << i << "^2 + ";
23          }else{
24              cout << i << "^2 = " << sum;
25          }
26      }
27
28  }
29
30  int sumSquare(int n){ //1+2+3+...+n
31
32      if(n==1){
33          return 1;
34      }else{
35          return n*n+ sumSquare(n-1);
36      }
37
38  }
39
40  void sumPrime(int x){
41
42      int pn; //primary number
43      int sum=0;
44      for(int i=x;i>0;i--){
45          bool not_prime = false;
46          for(int j=2; j< i; j++){
47
48              if(i%j == 0){
49                  not_prime = true;
50                  j = i;
51              }
52          }
53          if(not_prime == false){
54              cout<<"\n\n\tPrimary number: "<<i<<" ";
55              sum = sum + i;
56          }
```

```cpp
12  void sumOfSeries (int number){ //1^2 + 2^2 + ... + n^2
13      int sum = 0;
14
15      sum = (number * (number + 1) * (2 * number + 1 )) / 6;
16
17      cout << "\n\n\tThe Sum of the Series of " << number << " \n\n\tnumber = " << sum << "\n\n";
18
19      for(int i = 1; i <= number; i++){
20
21          if (i != number){
22              cout << i << "^2 + ";
23          }else{
24              cout << i << "^2 = " << sum;
25          }
26      }
27
28  }
29
30  int sumSquare(int n){ //1+2+3+...+n
31
32      if(n==1){
33          return 1;
34      }else{
35          return n*n+ sumSquare(n-1);
36      }
37
38  }
39
40  void sumPrime(int x){
41
42      int pn; //primary number
43      int sum=0;
44      for(int i=x;i>0;i--){
45          bool not_prime = false;
46          for(int j=2; j< i; j++){
47
48              if(i%j == 0){
49                  not_prime = true;
50                  j = i;
51              }
52          }
53          if(not_prime == false){
54              cout<<"\n\n\tPrimary number: "<<i<<" ";
55              sum = sum + i;
56          }
57      }
58      cout<<endl<<"\n\n\tThe sum of all primary number between 1 to  "<<pn<<" is : "<<sum;
59  }
60
61   void sumPrime(int x);
62
63
```

6.Number Conversion system

```cpp
Start here   Rotha_Dapravith_Algo_Project.cpp   Product_Management.h   Book_store_management.h   Number_testing.h   N

11      ///*Number convertion system ****//
12      void binaryToDecimal(){
13
14          int a[20],i,j,temp,flag=0,sum=0;
15          long num;
16
17          cout<<"\n\tEnter Binary Number :";
18          cin>>num;
19          i=0;
20          while(num){
21          temp=num%10;
22          num=num/10;
23          flag++;
24          a[i]=temp;
25          i++;
26          }
27          for(i=0;i<flag;i++){
28          sum+=(pow(2,i)*a[i]);
29          }
30        cout<<"\n\tDecimal Number of Entered Binary is :"<<sum;
31
32      }
33
34      void decimalToBinary(){
35          int num,temp,i=0,bin[20];
36          cout<<"\n\tEnter Decimal Number :";
37          cin>>num;
38          while(num>0){
39          temp=num%2;
40          bin[i++]=temp;
41          num=num/2;
42          }
43          cout<<"\n\tBinary Number of Given Decimal Number :";
44
45          for(int j=i-1;j>=0;j--){
46          cout<<bin[j];
```

Start here | Rotha_Dapravith_Algo_Project.cpp | Product_Management.h | Book_store_management.h | Number_testing.h | Math

```cpp
45              for(int j=i-1;j>=0;j--){
46              cout<<bin[j];
47              }
48      }
49
50  void octalToDecimal(){
51          char num[30];
52          int i,sum=0,temp=0;
53          cout<<"\n\tEnter Octal Number :";
54          cin>>num;
55          int len=strlen(num);
56
57          for(i=len-1;i>=0;i--){
58          sum+=(pow(8,temp))*(((int)num[i])-48);
59          temp++;
60          }
61          cout<<"\n\tDecimal Number of given Octal number is "<<sum;
62
63      }
64
65
66  void decimalToOctal(){
67          int num,temp,i=0,octal[20];
68          cout<<"\n\tEnter Decimal Number :";
69          cin>>num;
70          while(num>0){
71          temp=num%8;
72          num=num/8;
73          octal[i]=temp;
74          i++;
75          }
76          cout<<"\n\tOctal Number of Entered Decimal Number is ";
77
78          for(int j=i-1;j>=0;j--){
79          cout<<octal[j];
80          }
```

Start here | Rotha_Dapravith_Algo_Project.cpp | Product_Management.h | Book_store_m

```cpp
75          }
76          cout<<"\n\tOctal Number of Entered Decimal Number is ";
77
78          for(int j=i-1;j>=0;j--){
79          cout<<octal[j];
80          }
81      }
82
83
84  void decimaltoHexaDecimal(){
85
86          int num,temp,i=0;
87          char hexadecimal[20];
88          cout<<"\n\tEnter Decimal Number :";
89          cin>>num;
90
91          while(num>0){
92           temp=num%16;
93           num=num/16;
94
95           if(temp==10){
96            hexadecimal[i]='A';
97           }
98           else if(temp==11){
99            hexadecimal[i]='B';
100          }
101          else if(temp==12){
102
103           hexadecimal[i]='C';
104          }
105          else if(temp==13){
106           hexadecimal[i]='D';
107          }
108          else if(temp==14){
109           hexadecimal[i]='E';
110          }
111          else if(temp==15){
112           hexadecimal[i]='F';
113          }
114          else{
115           hexadecimal[i]=(char(temp))+48;
116          }
117          i++;
118          }
119         hexadecimal[i]='\0';
120         int len=strlen(hexadecimal);
121         cout<<"\n\tOctal Number of Entered Decimal Number is ";
122
123         for(i=len-1;i>=0;i--){
124          cout<<hexadecimal[i];
125         }
126         cout<<"\n\n";
127     }
```

```
128    ,
129  □void displaymenu(){
130
131         cout<<"\n\n";
132         cls();
133         cout<<"\n\t=============================="<<endl;
134         cout<<" \n\t | ** NUMBER CONVERSIONS ** |"<<endl;
135         cout<<"\n\t=============================="<<endl;
136         cout<<"\n\t1.  Binary to Decimal"<<endl;
137         cout<<"\n\t2.  Decimal to Binary"<<endl;
138         cout<<"\n\t3.  Octal to Decimal"<<endl;
139         cout<<"\n\t4.  Decimal to Octal"<<endl;
140         cout<<"\n\t5.  Decimal to HexaDecimal"<<endl;
141         cout<<"\n\t0.  quit program"<<endl;
142         cout<<"\n\t**************************"<<endl;
143         cout<<"\n\tPlease input Your Choice : ";
144
145   }
146
```

7.Main Program

```
Start here   Rotha_Dapravith_Algo_Project.cpp  X   Product_Management.h   Book_store_management.h   Number_testi

 1     #include<iostream>
 2     #include<fstream>
 3     #include<windows.h>
 4     #include<time.h>
 5     #include<conio.h>
 6     #include<string.h>
 7     #include<cmath>
 8     #include<ctime>
 9     #include"Product_Management.h"
10     #include"Book_store_management.h"
11     #include"Number_testing.h"
12     #include"Math_suit_computation.h"
13     #include"Number_convertion_system.h"
14     using namespace std;
15
16
17     time_t mytime = time(0);
18     char *load = ctime(&mytime);
19
20     fstream history;
21
22  □void SetColor(int ForgC){
23
24         WORD wColor;
25         //This handle is needed to get the current background attribute
26
27         HANDLE hStdOut = GetStdHandle(STD_OUTPUT_HANDLE);
28         CONSOLE_SCREEN_BUFFER_INFO csbi;
29         //csbi is used for wAttributes word
30
31         if(GetConsoleScreenBufferInfo(hStdOut, &csbi))
32         {
33             //To mask out all but the background attribute, and to add the color
34             wColor = (csbi.wAttributes & 0xF0) + (ForgC & 0x0F);
35             SetConsoleTextAttribute(hStdOut, wColor);
36         }
37         return;
38
39
40   }
41
42  □int GetFontSize(HANDLE windowHandle, COORD *size){
43
44         CONSOLE_FONT_INFOEX font = { sizeof(CONSOLE_FONT_INFOEX) };
45
46         if (!GetCurrentConsoleFontEx(windowHandle, 0, &font))
```

Start here Rotha_Dapravith_Algo_Project.cpp ✕ Product_Management.h Book_store_management.h Number_testing.h Math_suit_computatio

```cpp
41
42  int GetFontSize(HANDLE windowHandle, COORD *size){
43
44      CONSOLE_FONT_INFOEX font = { sizeof(CONSOLE_FONT_INFOEX) };
45
46      if (!GetCurrentConsoleFontEx(windowHandle, 0, &font))
47          {
48          return 0;
49          }
50
51      *size = font.dwFontSize;
52
53      return 1;
54      }
55
56  int SetFontSize(HANDLE windowHandle, COORD size){
57
58      CONSOLE_FONT_INFOEX font = { sizeof(CONSOLE_FONT_INFOEX) };
59
60      if (!GetCurrentConsoleFontEx(windowHandle, 0, &font)){
61          return 0;
62          }
63
64      font.dwFontSize = size;
65
66      if (!SetCurrentConsoleFontEx(windowHandle, 0, &font)){
67          return 0;
68          }
69
70      return 1;
71  }
72
73  void intro(){
74
75      cout<<"\n\n\n\n\n\n\n\t\t\t\tFinal Algo.Project\n\t\t\t\t~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~";
76      cout<<"\n\n\t\t\tMade By: Rotha Dapravith\n\t\t\t------------------------";
77      cout<<"\n\n\t\t\tID: e20190915\n\t\t\t--------------------------------";
78      cout<<"\n\n\t\t\tGroup: I3 GIC(C)\n\t\t\t--------------------------------";
79      getch();
80
```

Start here Rotha_Dapravith_Algo_Project.cpp ✕ Product_Management.h Book_store_managemen

```cpp
81
82  void loading(){
83
84      SetColor(9);
85      printf("\n\n\t\t\t\t\t\t\tLoading.....\n");
86      printf("\t\t\t\t\t\t   ");
87
88      for(int i=0; i<=20; i++){
89          SetColor(9);
90          Sleep(50);
91          printf("%c",219);
92          SetColor(9);
93          }
94      printf("\n\n\n\t\t\t\t       ");
95      system("pause");
96  }
97
98  void welcome(){
99
100     system("cls");
101     cls();
102     cout<<"\n\n\n\n\n\n\n\n\n\n\t\t\t\tWelcome to Algo.Project ";
103     getch();
104 }
105
106
107
108 main(){
109
```

```
Start here  Rotha_Dapravith_Algo_Project.cpp ✕  Product_Management.h  Book_store_management.h  Number_testing.h  Math_
   107
   108  ☐main(){
   109
   110
   111        int choice;
   112  //      time_t now = time(0);
   113  //      tm*ltm = localtime(&now);
   114        system("Color 5");
   115
   116        intro();
   117        welcome();
   118        loading();
   119        cls();
   120        HANDLE h = GetStdHandle(STD_OUTPUT_HANDLE);
   121        COORD size;
   122
   123        if (GetFontSize(h, &size)){
   124            /* Grow by 50% */
   125            size.X += (SHORT)(size.X * .6);
   126            size.Y += (SHORT)(size.Y * .6);
   127            SetFontSize(h, size);
   128        }
   129
   130        cout<<"\t\t\t\t\t\t\tHistory Data of each feature 1-6"<<endl<<endl;
   131
   132
   133        SetColor(2);
   134        cls();
   135        cout<<"\n\t\t=========================================================="<<endl;
   136        cout<<"\t\t\t*** Algorithm and Programming Project Menu ***"<<endl;
   137        cout<<"\t\t=========================================================="<<endl<<endl;
   138        cout<<"\t\t\t\t1.Product Management"<<endl<<endl;
   139        cout<<"\t\t\t\t2.Book store Management"<<endl<<endl;
   140        cout<<"\t\t\t\t3.Number testing"<<endl<<endl;
   141        cout<<"\t\t\t\t4.Basic Math"<<endl<<endl;
   142        cout<<"\t\t\t\t5.Math suit computation"<<endl<<endl;
   143        cout<<"\t\t\t\t6.Number conversion"<<endl<<endl;
   144        cout<<"\t\t\t\t0.Exit program"<<endl<<endl;
   145        cout<<"\n\t\t\t\tPlease Input your choice: ";cin>>choice;
```

```
Start here  Rotha_Dapravith_Algo_Project.cpp ✕  Product_Management.h  Book_store_management.h  Number_testi
   147        if(choice==0){
   148            exit(0);
   149        }else if(choice == 1){
   150            cls();
   151            int size;
   152            int option;
   153            history.open("HistoryData.txt",ios::app);
   154            history<<"\nUser used feature product Management on "<<load;
   155            history.close();
   156
   157            cout<<endl;
   158            system("Color 03");
   159            system("Color 9F");
   160
   161            while(1){
   162                cout<<"\n\n\t\t1. Create or Insert a product";
   163                cout<<"\n\n\t\t2. Display information all products";
   164                cout<<"\n\n\t\t3. Display information a product by ID";
   165                cout<<"\n\n\t\t4. Delete a product by ID";
   166                cout<<"\n\n\t\t5. Update a product by ID";
   167                cout<<"\n\n\t\t6. Search a product ";
   168                cout<<"\n\n\t\t0. Exit program\n";
   169                cout<<"\n\n\t\tEnter a number to choose a option: ";cin>>option;
   170                cls();
   171                if(option == 1){
   172
   173                    cout<<"\n1. Create products";
   174                    cout<<"\nEnter a number which you want to add:";cin>>size;
   175                    createProduct(p,size);
   176                }
   177                else if(option == 2){
   178                    displayAllProducts(p);
   179                }
   180                else if(option == 3){
   181                    displayProductByID(p);
   182                }
   183                else if(option == 4){
   184                    deleteProductByID(p);
   185                }
   186                else if(option == 5){
   187                    updateProductByID(p);
   188                }
   189                else if(option == 6){
   190                    searchProductByID(p);
   191                }
   192                else if(option == 0){
```

Start here | Rotha_Dapravith_Algo_Project.cpp ✕ | Product_Management.h | Book_store_management.h | Number_testing.h

```
189              else if(option == 6){
190                  searchProductByID(p);
191              }
192              else if(option == 0){
193                  exit(0);
194                  system("pause");
195                  break;
196              }
197          }
198
199      }else if(choice == 2){
200
201          int size;
202          int choice;
203          char ch;
204          history.open("HistoryData.txt",ios::app);
205          history<<"\nUser used feature Book store Management on "<<load;
206          history.close();
207          //cls();
208      do{
209          system("cls");
210          cout<<"\n\n\t\t ***Book Store Management ***"<<endl;
211          cout << "\n\n\t\t=== Menu ===";
212          cout << "\n\n\t1. Create new book";
213          cout << "\n\t2. Show book by ID";
214          cout << "\n\t3. Display books by published year";
215          cout << "\n\t4. Search book by ID";
216          cout << "\n\t5. Update book by ID";
217          cout << "\n\t6. Delete book by ID";
218          cout << "\n\t0. Exit program";
219          cout<<"\nChoose your option number: ";cin>>choice;
220
221          switch(choice){
222              case 1:
223              cout<<"\n1. Create information of books";
224              cout<<"\nEnter a number of Book you want to create: ";cin>>size;
225              storeallbooks(b,size);
226              break;
227              case 2:
228              DisplayAllBookInfo(b);
229              system("pause");
230              break;
231              case 3:
232              DisplayBookByPublished_year(b);
233              system("pause");
234              break;
```

Start here | Rotha_Dapravith_Algo_Project.cpp ✕ | Product_Management.h | Book_store_management.h | Number_testing.h

```
221          switch(choice){
222              case 1:
223              cout<<"\n1. Create information of books";
224              cout<<"\nEnter a number of Book you want to create: ";cin>>size;
225              storeallbooks(b,size);
226              break;
227              case 2:
228              DisplayAllBookInfo(b);
229              system("pause");
230              break;
231              case 3:
232              DisplayBookByPublished_year(b);
233              system("pause");
234              break;
235              case 4:
236              cout<<"\n4. Search & display a book info by ID\n";
237              searchByID(b);
238              system("pause");
239              break;
240              case 5:
241              updateInFile(b);
242              system("pause");
243              break;
244              case 6:
245              deleteByID(b);
246              system("pause");
247              break;
248
249              case 0:
250              exit(0);
251              system("pause");
252              break;
253
254          }
255
256      }while(choice!=0);
257
```

Start here | Rotha_Dapravith_Algo_Project.cpp ✕ | Product_Management.h | Book_store_management.h | Number_testing.h

```cpp
257
258              }else if(choice == 3){
259
260                 int num;
261                 bool flag;
262                  history.open("HistoryData.txt",ios::app);
263                   history<<"\nUser used feature Number testing on"<<load;
264                   history.close();
265
266                    cout<<"\n\n\t1. Check primary number";
267                    cout<<"\n\n\tEnter any number : ";
268                   cin>>num;
269                   flag = isPrime(num);
270                   if (flag==true){
271                   cout<<"\t"<<num<<" is a primary number";
272                   }else{
273                   cout<<"\t"<<num<<" is not a primary number";
274                   }
275                   cout<<"\n\n\t2. Check perfect number";
276                   cout << "\n\n\tEnter a number : "; cin >> num;
277
278          if (checkPerfect(num)){
279                  cout << "\tIt is a perfect number";
280          }
281          else{
282                  cout << "\tIt is not a perfect number";
283          }
284           cout<<"\n\n\t3. Check palindrome number";
285           cout<<"\n\n\tEnter any number: ";
286          cin>>num;
287
288          if(isPalindrome(num) == 1){
289                  cout<<"\t"<<num<<" \n\tIt is palindrome number";
290          }
291          else{
292                  cout<<"\t"<<num<<" \n\tIt is not palindrome number";
293                  cout<<endl<<endl;
294                  system("\n\n\tpause");
295          }
296
297           }else if(choice == 4){ //*basic Math
298               int a, b;
299               history.open("HistoryData.txt",ios::app);
300               history<<"\nUser used feature Basic Math on "<<load;
301               history.close();
302
```

Start here | Rotha_Dapravith_Algo_Project.cpp ✕ | Product_Management.h | Book_store_management.h | Number_testing.h | Math_suit_computation.h

```cpp
297              }else if(choice == 4){ //*basic Math
298                    int a, b;
299                  history.open("HistoryData.txt",ios::app);
300                  history<<"\nUser used feature Basic Math on "<<load;
301                  history.close();
302          // printing the sum of a and b
303          cout<<"\n\n\tEnter value of a: ";cin>>a;
304          cout<<"\n\n\tEnter value of b: ";cin>>b;
305
306          cout << "\n\n\tSummation a + b = " << (a + b) << endl;
307
308          // printing the difference of a and b
309          cout << "\n\n\tSubtraction a - b = " << (a - b) << endl;
310
311          // printing the product of a and b
312          cout << "\n\n\tMultiplication a * b = " << (a * b) << endl;
313
314          // printing the division of a by b
315          cout << "\n\n\tDivision a / b = " << (a / b) << endl;
316          cout<<endl<<endl;
317          system("\n\tpause");
318
319           }else if(choice == 5){
320           int number=0;
321           int n,x;
322           int sum=0,i=1;
323           int num,count;
324
325            history.open("HistoryData.txt",ios::app);
326                history<<"\nUser used feature Math suit Computation on "<<load;
327                history.close();
328
329          cout<<"\n\n\t1. 1+2+3+...+n";
330          cout << "\n\n\tEnter a number: ";
331          cin >> n;
332
333          cout << "\n\n\tSummation of 1+2+3+...+n = " << sumSquare(n);
```

```
Start here   Rotha_Dapravith_Algo_Project.cpp  X   Product_Management.h   Book_store_management.h   Number_testing.h   Math_suit_computation.h   Num

319              }else if(choice == 5){
320              int number=0;
321              int n,x;
322              int sum=0,i=1;
323              int num,count;
324
325               history.open("HistoryData.txt",ios::app);
326                    history<<"\nUser used feature Math suit Computation on "<<load;
327                    history.close();
328
329             cout<<"\n\n\t1. 1+2+3+...+n";
330             cout << "\n\n\tEnter a number: ";
331             cin >> n;
332
333             cout << "\n\n\tSummation of 1+2+3+...+n =  " << sumSquare(n);
334
335             cout<<"\n\n\t2. 1+3+5+...+n";
336             cout<<"\n\n\tEnter a number: ";
337             cin>>n;
338
339             while(i<=n){
340                 sum+=i;
341                 i+=2;
342             }
343             cout<<"\n\n\tThe sum of the series 1+3+5+...+n = "<<sum;
344
345             cout<<"\n\n\t3. 1^2+2^2+...+n^2";
346             cout << "\n\n\tEnter the Number to find sum of Series 1^2 + 2^2 + n^2 =  ";
347             cin >> number;
348
349             sumOfSeries (number);
350
351             cout<<"\n\n\t4. Sum all primary numbers in between 1 to n";
352
353             cout<<"\n\n\tEnter a number:  ";cin>>number;
354             sumPrime(number);
```

```
Start here   Rotha_Dapravith_Algo_Project.cpp  X   Product_Management.h   Book_store_management.h   Number_testing.h   Math_suit_computation.h   Number_convertion_system.h

353             cout<<"\n\n\tEnter a number:  ";cin>>number;
354             sumPrime(number);
355             cout<<endl<<endl;
356             system("\n\n\tpause");
357             }else if(choice == 6){
358                 int choice;
359                  history.open("HistoryData.txt",ios::app);
360                 history<<"\nUser used feature Number convertion system on "<<load;
361                 history.close();
362                 cls();
363             do{
364             displaymenu();
365             cin>>choice;
366
367             switch(choice){
368                 case 0: exit(0);
369                 cls();
370                 case 1: binaryToDecimal(); break;
371                 cls();
372                 case 2: decimalToBinary(); break;
373                 cls();
374                 case 3: octalToDecimal(); break;
375                 cls();
376                 case 4: decimalToOctal();break;
377                 cls();
378                 case 5: decimaltoHexaDecimal(); break;
379                 cls();
380                 default:
381                  cout<<"\n\tInvalid Input! Please check number choice in menu";
382                  cout<<"\n\n";
383                  cout<<endl<<endl;
384
385              }
386
387             getch();
388             }
```

Start here | Rotha_Dapravith_Algo_Project.cpp ✕ | Product_Management.h | Book_store_management.h

```cpp
348
349             sumOfSeries (number);
350
351         cout<<"\n\n\t4. Sum all primary numbers in between 1 to n";
352
353         cout<<"\n\n\tEnter a number:   ";cin>>number;
354         sumPrime(number);
355         cout<<endl<<endl;
356         system("\n\n\tpause");
357     }else if(choice == 6){
358             int choice;
359             history.open("HistoryData.txt",ios::app);
360             history<<"\nUser used feature Number convertion system on "<<load;
361             history.close();
362             cls();
363     do{
364     displaymenu();
365     cin>>choice;
366
367     switch(choice){
368         case 0: exit(0);
369         cls();
370         case 1: binaryToDecimal(); break;
371         cls();
372         case 2: decimalToBinary(); break;
373         cls();
374         case 3: octalToDecimal(); break;
375         cls();
376         case 4: decimalToOctal();break;
377         cls();
378         case 5: decimaltoHexaDecimal(); break;
379         cls();
380         default:
381         cout<<"\n\tInvalid Input! Please check number choice in menu";
382         cout<<"\n\n";
383         cout<<endl<<endl;
384
385      }
386
387      getch();
388     }
389
390     while(choice>0);
391
392     }
393     else{
394         cout<<"\n\n\t\tInvalid choice!!";
395
396     }
397
398
399
400
401
402 }
403
```

"C:\Users\TRC\OneDrive - itc.edu.kh\Documents\Algorithm Semester 2\Project Algo\Rotha_Dapravith_Algo_Project.exe"

```
                    Final Algo.Project
                    ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~


                    Made By: Rotha Dapravith
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                    ID: e20190915
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                    Group: I3 GIC(C)
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```