```
import java.util.*;
public class Example{
       static String usrName = "hesh";
       static String pass="1234";
       static String[][] suppliers = new String[0][2];
  static String[] suplierHeaders = {"#", "ID", "Name"};
       static String[][] categories = new String[1][2];
  static String[] categareHeaders ={"@","Name","ID"};
  static String[][] items = new String[1][6];
  static String[] itemHeaders ={"","code","SID","Cat","Desc","price","qty"};
  static String[] newheders = {"code", "SID", "Cat", "Desc", "price", "qty"};
private final static void clearConsole(){
final String os = System.getProperty("os.name");
try {
if (os.equals("Linux")) {
System.out.print("\033\143");
} else if (os.equals("Windows")) {
new ProcessBuilder("cmd", "/c", "cls").inheritIO().start().waitFor();
} else {
System.out.print("\033[H\033[2J");
System.out.flush();
} catch (final Exception e) {
System.err.println(e.getMessage());
}
        private static int isFull(String[][] array){
     for (int i = 0; i < array.length; i++) {
          if (array[i][0]==null) {
            return i;
          }
     }
     return -1;
  public static String[][] grow(String[][] oldArray,int ar){
     int newArrayCapacity = oldArray.length +1;
```

```
String[][] newArray = new String[newArrayCapacity][ar];
  for (int i = 0; i < oldArray.length; i++) {
    newArray[i] = Arrays.copyOf(oldArray[i], oldArray[i].length);
  }
  return newArray;
}
public static int search(String[][] array ,String value ){
  for (int i = 0; i < array.length; i++) {
    if (array[i][0].equals(value)) {
       return i;
     }
  }
  return -1;
public static String[][] deleteRow(String[][] array, int rowToDelete) {
  String[][] newArray = new String[array.length - 1][array[0].length];
  int newRow = 0;
  for (int i = 0; i < array.length; i++) {
    if (i != rowToDelete) {
       newArray[newRow] = array[i];
       newRow++;
    }
  }
  return newArray;
}
public static void generateTable(String[] headers, String[][] data) {
  int rows = data.length;
  int columns = data[0].length + 1;
  int[] columnWidths = new int[columns];
  for (String[] row : data) {
    for (int j = 0; j < row.length; j++) {
       int length = row[j].length();
```

```
if (length > columnWidths[j + 1]) {
          columnWidths[j + 1] = length;
       }
     }
  }
  columnWidths[0] = String.valueOf(rows).length() + 2;
  printRow(headers, columnWidths);
  for (int i = 0; i < rows; i++) {
     String[] rowData = new String[columns];
     rowData[0] = String.valueOf(i + 1);
     System.arraycopy(data[i], 0, rowData, 1, data[i].length);
     printRow(rowData, columnWidths);
     if (i == rows - 1) {
       printBottomBorder(columnWidths);
  }
}
public static void printRow(String[] row, int[] columnWidths) {
  int columns = row.length;
  for (int j = 0; j < \text{columns}; j++) {
     System.out.print("+" + repeat("-", columnWidths[i] + 2));
  System.out.println("+");
  for (int j = 0; j < \text{columns}; j++) {
     System.out.printf("| %-" + columnWidths[j] + "s ", row[j]);
  System.out.println("|");
}
public static void printBottomBorder(int[] columnWidths) {
  int columns = columnWidths.length;
  for (int j = 0; j < \text{columns}; j++) {
```

```
System.out.print("+" + repeat("-", columnWidths[j] + 2));
    System.out.println("+");
  public static String repeat(String str, int times) {
    return new String(new char[times]).replace("\0", str);
  }
      public static void searchSupplier() {
    clearConsole();
    System.out.println( "+-----+");
    Scanner scanner = new Scanner(System.in);
    boolean wantFind = true ;
    while (wantFind) {
      boolean tryAgain = true;
      while (tryAgain) {
       System.out.print("\nsupplier ID :");
       String suplierID = scanner.nextLine();
       int index = search(suppliers, suplierID);
       if (index == -1) {
        System.out.print("ID not found . try again(y/n)");
        char input = scanner.nextLine().toLowerCase().charAt(0);
        if (input == 'n') {
          tryAgain= false;
          wantFind=false;
        }
       }else{
        System.out.print("Suppler Name:"+suppliers[index][1]+ "\n");
        System.out.print("added successfully! Do you add another find(y/n)?");
        char input = scanner.nextLine().toLowerCase().charAt(0);
        if (input == 'n') {
          tryAgain= false;
           wantFind = false;
        }else{
                                clearConsole();
                                System.out.println( "+--------;);
System.out.println( "| SEARCH SUPPLIER
|");
                                System.out.println( "+-----+");
                                }
        }
```

```
}
  }
  clearConsole();
  supplierManage();
public static void viewSuppliers() {
  clearConsole();
  System.out.println( "+-------");
 generateTable(suplierHeaders, suppliers);
  Scanner scanner = new Scanner(System.in);
  boolean key = true;
  while (key) {
    System.out.print("Do you want to go supplier manage page(Y/N)?");
    char press = scanner.nextLine().toLowerCase().charAt(0);
    if ( press == 'y') {
      key= false;
     clearConsole();
     supplierManage();
    }
  }
}
public static void deleteSupplier() {
  clearConsole();
  System.out.println( "+--------");
 Scanner scanner = new Scanner(System.in);
  boolean wantFind = true:
  while (wantFind) {
    boolean tryAgain = true;
    while (tryAgain) {
      System.out.print("\nSupplier ID: ");
      String supplierID = scanner.nextLine();
      int index = search(suppliers, supplierID);
      if (index == -1) {
        System.out.print("can't find supplier id.Try again (y/n): ");
```

```
char input = scanner.nextLine().toLowerCase().charAt(0);
          if (input == 'n') {
            wantFind = false:
            tryAgain = false;
          }
        } else {
          suppliers = deleteRow(suppliers, index);
          System.out.print("deleted successfully! Do you want to delete another?(y/n) ");
          char input = scanner.nextLine().toLowerCase().charAt(0);
          if (input == 'n') {
            wantFind = false;
            tryAgain = false;
            clearConsole();
          }else{
                                    clearConsole();
      System.out.println( "+------");
                                    System.out.println( "| DELETE SUPPLIER
|");
      System.out.println( "+-----+");
        }
    clearConsole();
    supplierManage();
  }
  public static void updateSupplier() {
    clearConsole();
    System.out.println( "+-------");
   Scanner scanner = new Scanner(System.in);
    boolean wantFind = true;
    while (wantFind) {
      boolean tryAgain = true;
      while (tryAgain) {
      System.out.print("\nSupplier ID :");
      String suplierID = scanner.nextLine();
      int index = search(suppliers, suplierID);
```

```
if (index == -1) {
         System.out.print("can't find supplier id. try again(y/n)");
         char input = scanner.nextLine().charAt(0);
         if (input == 'N' || input == 'n') {
           tryAgain= false;
           wantFind=false;
         }
       }else{
           System.out.println("Supplier Name :" +suppliers[index][1]);
           System.out.println();
           System.out.print("Enter the new Suppler Name :" );
           suppliers[index][1]= scanner.nextLine();
           System.out.print("Update Sucsessfully! Do you want to update annother
suplier(Y/N)");
           char input = scanner.nextLine().charAt(0);
           if (input == 'N' || input == 'n') {
             wantFind = false;
             tryAgain= false;
           }else{
                                        clearConsole();
      System.out.println( "+-------; System.out.println( "| UPDATE SUPPLIER
|");
      System.out.println( "+------");
                                        }
         }
       }
    }
    clearConsole();
    supplierManage();
  }
  public static void addSupplier() {
    clearConsole();
    System.out.println( "+-----+");
    System.out.println("| ADD SUPPLIER |");
System.out.println("+-----+");
             System.out.println();
```

```
boolean doYouWant = true;
while (doYouWant){
  Scanner scanner = new Scanner(System.in);
  System.out.print("Supplier ID :");
  String newID = scanner.nextLine();
  int x =search(suppliers, newID);
  if (x==-1) {
    if (isFull(suppliers)==-1) {
    suppliers = grow(suppliers,2);
    }
    int lastIndex =suppliers.length-1;
    suppliers[lastIndex][0]=newID;
    System.out.print("Supplier Name : ");
    suppliers[lastIndex][1]= scanner.nextLine();
    System.out.print("added succesfully!");
  }else{
    System.out.print("already exists.");
  System.out.print(" Do you want to add another supplier(Y/N)?");
  char isWant = scanner.next().charAt(0);
  if (isWant == 'N' || isWant == 'n'){
    doYouWant = false;
  }else{
  clearConsole();
                System.out.println( "+------");
                System.out.println("| ADD SUPPLIER |");
System.out.println("+-------");
  System.out.println();
}
clearConsole();
supplierManage();
```

}

```
System.out.println();
      System.out.println("[1] Add Supplier "+"[2] Update Supplier");
System.out.println("[3] Delete Supplier "+"[4] View Suppliers");
System.out.println("[5] Search Supplier "+"[6] Home Page");
      System.out.println();
      Scanner input = new Scanner(System.in);
      System.out.print("Ente an option to continue > ");
      int num =input.nextInt();
      switch(num) {
case 1:
  addSupplier();
  break;
case 2:
 updateSupplier();
 break:
case 3:
 deleteSupplier();
 break;
case 4:
 viewSuppliers();
break:
case 5:
  searchSupplier();
break:
case 6:
  clearConsole();
  homePage();
break;
default:
  System.out.println("worng option try again! \n\n");
```

```
supplierManage();
    break;
  }
}
    public static void backHomePage(){
           Scanner input = new Scanner(System.in);
           System.out.print("Password change successfully! Do want to go home page.(Y/N):");
           String YaN =input.next();
           if(YaN.equals("y")){
                   clearConsole();
                   homePage();
                   }else{
                          newPass();
    public static void newPass(){
           Scanner input = new Scanner(System.in);
           System.out.print("Enter your new password :");
           String newPassword = input.next();
           pass=newPassword;
                  backHomePage();
    public static void changePassword(){
           Scanner input = new Scanner(System.in);
           System.out.print("Enter your current password :");
           String curentPass = input.next();
           if(pass.equals(curentPass)){
                          newPass();
                   }else{
                          System.out.println("incorrect password. try again!");
                          changePassword();
    public static void case1Details(){
           Scanner input= new Scanner(System.in);
           System.out.print("Please enter the user name to verify it's you :");
```

```
String verifyName = input.next();
                    if(usrName.equals(verifyName)){
                                System.out.println("Hey hesh");
                                changePassword();
                          }else{
                                System.out.println("invalid user name. try again! :");
                                case1Details();
                                }
        }
  public static void case1(){
        System.out.println("+-----+");
        |");
        case1Details();
        }
  public static void addNewItemCategory() {
clearConsole();
System.out.println("+-------;);
System.out.println("| ADD ITEM CATEGORY
System.out.println("+-----+");
Scanner scanner = new Scanner(System.in);
boolean addAgain = true;
while (addAgain) {
  if (categories[0][0]==null) {
    System.out.print("Enter the new item Categary:");
    String catName = scanner.nextLine();
    categories[0][0]= catName;
    System.out.print("add a ID :");
    categories[0][1] =scanner.nextLine();
  } else {
    int lastRow = categories.length-1;
    System.out.print("Categary Name :");
    String catName = scanner.nextLine();
    int isFound = search(categories, catName);
   if (isFound!=-1) {
      System.out.println("Category alredy added . ");
    }else{
```

```
if (categories[lastRow][0]!=null) {
           categories = grow(categories, 2);
         lastRow=categories.length-1;
         categories[lastRow][0]= catName;
         System.out.print("add a ID :");
        categories[lastRow][1] =scanner.nextLine();
         System.out.println("Added Succesfull :)");
      }
    generateTable(categareHeaders, categories);
    System.out.println(" \n Do you want to add annother(y/n)");
    char input = scanner.nextLine().charAt(0);
    if (input == 'n') {
      clearConsole();
      stockManage();
    }
  }
}
public static void deleteItemCategory() {
  clearConsole();
  System.out.println("+--------;;;
  Scanner scanner= new Scanner(System.in);
  if (categories[0][0]==null) {
    System.out.println("No categoryies :");
    manageItemCatagories();
  } else {
    boolean addAgain = true;
  l1:while (addAgain) {
      System.out.print(" Categary name to delete :");
      String delName = scanner.nextLine();
      int foundIndex = search(categories, delName);
      if (foundIndex==-1) {
         System.out.println("Categery not found . ");
      }else{
        if (foundIndex==0) {
           categories[0][0]= null;
           categories[0][1]= null;
```

```
break l1;
        } else {
          deleteRow(categories, foundIndex);
      }
      System.out.print("Delete Succesfull:) \n Do you want to delete annother(y/n)");
      char input = scanner.nextLine().charAt(0);
      if (input == 'n') {
      addAgain = false;
      }
  manageItemCatagories();
public static void updateItemCategory() {
  clearConsole();
  Scanner scanner = new Scanner(System.in);
  if (categories[0][0]==null) {
    System.out.println("No categaryies to update :");
    manageItemCatagories();
  } else {
    boolean updateAgain = true;
    while (updateAgain) {
      System.out.print(" Categary name to update :");
      String newName = scanner.nextLine();
      int foundIndex = search(categories, newName);
      if (foundIndex==-1) {
        System.out.println("Categary not found try aggain ");
      } else {
        System.out.println("new Name :");
        categories[foundIndex][0] = scanner.nextLine();
        System.out.println("Update Succesfull:) ");
      }
      System.out.print(" \n Do you want to update annother(\n/\n)");
```

```
char input = scanner.nextLine().toLowerCase().charAt(0);
         if (input == 'n') {
         updateAgain = false;
    }
    manageItemCatagories();
    public static void addItem() {
    System.out.println("+-----+");
    System.out.println();
             System.out.println("OOPS! It seems that you don't have any item categories in the
system.");
             Scanner scanner = new Scanner(System.in);
             System.out.print("Do you want to add a new item category?(Y/N)");
             String YandN=scanner.nextLine();
      if(YandN.equals("y")) {
                    addNewItemCategory();
             }else{
                    boolean addAnother = true;
     while (addAnother) {
       System.out.print("Input a item code : ");
      String itemCode = scanner.nextLine();
      if (items[0][0]==null) {
         items[0][0]=itemCode;
         addItemHelp(itemCode);
       } else {
         int index=search(items, itemCode);
         if (index != -1) {
         System.out.println("Item already added :( ");
           int emptyIndex = isFull(items);
           if (emptyIndex==-1) {
             items=grow(items,6);
           addItemHelp(itemCode);
         }
       }
      System.out.print("Do you want to add annother (y/n)");
      char input = scanner.nextLine().charAt(0);
```

```
if (input == 'n') {
      addAnother = false;
  }
                   }
public static void addItemHelp(String itemCode){
  Scanner scanner = new Scanner(System.in);
  int row = items.length-1;
  items[row][0]=itemCode;
  System.out.print("Item description :");
  items[row][3]= scanner.nextLine();
  System.out.print("Unit price :");
  items[row][4]=scanner.nextLine();
  System.out.print("Qty on hand :");
  items[row][5]=scanner.nextLine();
  if (suppliers[0][0]==null) {
     Scanner scanner2 = new Scanner(System.in);
     System.out.print("No supliers found :( | add supliers(y/n)");
    char input = scanner2.nextLine().charAt(0);
    if (input == 'y') {
       addSupplier();
     }else{
       for (int i = 0; i < items[row].length; i++) {
         items[row][i]= null;
       }
       return;
  }
  System.out.println("Chose suplier number \n");
  generateTable(suplierHeaders,suppliers);
  System.out.print("\nSUPPLIER NUMBER ->");
  int supNumber = scanner.nextInt();
  items[row][1]= suppliers[supNumber-1][0];
  if (categories[0][0]==null) {
     Scanner scanner2 = new Scanner(System.in);
     System.out.print("No items category found :( | add category (y/n)");
```

```
char input = scanner2.nextLine().charAt(0);
    if (input == 'y') {
       addNewItemCategory();
     }else{
       for (int i = 0; i < items[row].length; i++) {
         items[row][i]= null;
       }
       return;
    }
  }
  System.out.println("Chose a catogery \n");
  generateTable(categareHeaders, categories);
  System.out.print("\nCATEGERY NUMBER ->");
  int catNumber = scanner.nextInt();
  items[row][2]= categories[catNumber-1][0];
  System.out.println("Item added sucsesfully ");
}
public static void getItemsSupplierWise() {
  clearConsole();
  System.out.println("| GET ITEM SUPPLIER WISE |")
System.out.println("+-----+\n");
  Scanner scanner = new Scanner(System.in);
  if (items[0][0]==null || suppliers[0][0]==null) {
     System.out.println("No suppliers or categorys found ");
    System.out.print("Go back \rightarrow (y/n)");
    char input = scanner.nextLine().toLowerCase().charAt(0);
    if (input == 'y') {
     return;
  }
  boolean again= true;
  while (again) {
     System.out.println("Suppler ID :");
    String id = scanner.nextLine();
    int index = search(suppliers, id);
    if (index==-1) {
       System.out.println("ID not found");
     } else {
       System.out.println("Supplier name :"+ suppliers[index][1] +"\n");
       printRowf(newheders);
```

```
for (String[] item : items) {
          if (item[1].equals(index)) {
            printRowf(item);
       System.out.println();
       System.out.println("Search sucseccfull");
     System.out.println("\n Do you want to search again (y/n)");
     char input = scanner.nextLine().toLowerCase().charAt(0);
     if (input == 'n') {
       again=false;
  }
}
//done
public static void categorizeItems() {
  Scanner scanner = new Scanner(System.in);
  for (String[] category : categories) {
     String categoryName = category[0];
     System.out.println("Category: " + categoryName);
     printRowf(newheders);
     for (String[] item : items) {
       if (item[2].equals(categoryName)) {
          printRowf(item);
       }
     System.out.println();
  boolean ex = true;
  while (ex) {
     System.out.println(" \n Go bacy (y/n)");
     char input = scanner.nextLine().toLowerCase().charAt(0);
     if (input == 'y') {
       ex = false;
     }
public static void printRowf(String[] row) {
  int columns = row.length;
  for (int i = 0; i < \text{columns}; i++) {
     System.out.print("+----");
  }
```

```
System.out.println("+");
  for (String value : row) {
     System.out.printf("| %-10s", value);
  System.out.println("|");
  for (int i = 0; i < \text{columns}; i++) {
     System.out.print("+----");
  System.out.println("+");
public static void rankItemsPerUnitPrice() {
  clearConsole();
  System.out.println("+-----+");
  System.out.println("| RANK ITEMS PER UNIT PRICE System.out.println("+---------;");
                                                                          |");
  Scanner scanner = new Scanner(System.in);
  if (items[0][0] == null) {
     boolean ex = true;
     while (ex) {
       System.out.print("NO ITEMS FOUND GO BACK (y/n) ->");
       char input = scanner.nextLine().toLowerCase().charAt(0);
       if (input == 'y') {
         ex = false;
          return;
       }
     }
  } else {
     int n = items.length;
     for (int i = 0; i < n - 1; i++) {
       for (int j = 0; j < n - i - 1; j++) {
          int first = Integer.valueOf(items[i][4]);
          int second = Integer.valueOf(items[j + 1][4]);
         if (first > second) {
            String[] temp = items[j];
            items[i] = items[i + 1];
            items[j + 1] = temp;
          }
       }
     generateTable(itemHeaders, items);
```

```
}
    boolean ex = true;
    while (ex) {
      System.out.println(" \n Go bacy (y/n)");
      char input = scanner.nextLine().charAt(0);
      if (input == 'y') {
       ex = false;
      }
    }
  }
      public static void manageItemCatagories() {
    clearConsole();
    System.out.println("+-----+");
    |");
            System.out.println();
            System.out.println("[1] Add New Item Category
                                                         "+"[2] Delete Item
Category");
            System.out.println("[3] Update Item Category "+"[4] Stock Management");
            System.out.println();
    System.out.print("Enter an option to continue >");
    Scanner scanner = new Scanner(System.in);
    int num = scanner.nextInt();
    switch (num) {
      case 1:
        addNewItemCategory();
        manageItemCatagories();
        break;
      case 2:
        deleteItemCategory();
        break;
      case 3:
        updateItemCategory();
        break;
      case 4:
        stockManage();
```

```
break;
    default:
      System.out.println("invalid input :( ");
      manageItemCatagories();
      break;
  }
}
    |");
           System.out.println("[1] Manage Item Categories "+"[2] Add Item");
System.out.println("[3] Get Item Supplier Wise "+"[4] View Items");
System.out.println("[5] Rank Items Per Unit Price "+"[6] Home Page");
           System.out.println();
           Scanner input = new Scanner(System.in);
           System.out.print("Enter an option to continue > ");
  int num = input.nextInt();
  switch (num) {
    case 1:
      manageItemCatagories();
      break;
    case 2:
      clearConsole();
                         addItem();
      break;
    case 3:
      clearConsole();
      getItemsSupplierWise();
      break;
    case 4:
      clearConsole();
      categorizeItems();
      break;
    case 5:
      clearConsole();
      rankItemsPerUnitPrice();
```

```
break;
     case 6:
                    clearConsole();
      homePage();
      break;
     default:
       System.out.println("try again");
      break:
   }
 }
     public static void homePage(){
          System.out.println("+-----+");
          System.out.println("| WELCOME TO IJSE STOCK MANAGEMENT
SYSTEM
            |");
          System.out.println("[5] Exit the system");
          System.out.println();
          Scanner input = new Scanner(System.in);
          System.out.print("Ente an option to continue > ");
          int option =input.nextInt();
          switch(option){
               case 1:
                    clearConsole();
                    case1();
                    break;
               case 2:
                     clearConsole();
                     supplierManage();
                     break;
               case 3:
```

```
clearConsole();
                      stockManage();
                     break;
              case 4:
                      clearConsole();
                     LoginPage();
                     break;
              case 5:
                      clearConsole();
                      break;
       }
}
public static void usrpass(){
       Scanner input = new Scanner(System.in);
       System.out.print("user pass: ");
       String pw = input.next();
       if(pass.equals(pw)){
              clearConsole();
              homePage();
       }else{
              System.out.println("user password is invalid. please try again!");
                                                          usrpass();
              }
public static void usrName(){
Scanner input = new Scanner(System.in);
       System.out.print("user name: ");
       String userName = input.next();
       if(userName.equals(usrName)){
                      usrpass();
                             }else{
```

```
System.out.println("user name is invalid. please try

usrName();

}

public static void LoginPage(){
    System.out.println("+------+");
    System.out.println("| LOGIN PAGE |");
    System.out.println("+----+");

usrName();

}

public static void main(String args[]){
    LoginPage();

}
```