Institute of Software Engineering

Graduate Diploma in Software Engineering

ITS1010-Programming Fundamentals

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Batch GDSE71

Course work

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```
import java.util.*;

public class Main {
    public static void main(String args[]) {

        String userName = "aloka";
        String password = "1234";

        clearConsole();

        String[][] supplier = new String[0][2]; // supplier array

        loginPage(userName, password, supplier);
        credentilManage(userName, password, supplier);

    }

    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) {
            // handle the exception
            System.err.println(e.getMessage());
        }
    }

    public static void loginPage(String userName, String password, String[][] supplier) {
        Scanner scanner = new Scanner(System.in);

        System.out.println("+-----------------------------------------------------------------------+");
        System.out.println("|                           LOGIN PAGE                                  |");
        System.out.println("+-----------------------------------------------------------------------+\n");

        String inputUserName;
        String inputPassWord;

        do {
            System.out.print("User Name : ");
            inputUserName = scanner.next();

            if (!userName.equals(inputUserName)) {
                System.out.println("User name is invalid. Please try again!\n");
            }
        } while (!userName.equals(inputUserName));
        do {
            System.out.print("\nPassword  : ");
            inputPassWord = scanner.next();

            if (!password.equals(inputPassWord)) {
                System.out.println("Password is incorrect. Please try again!");
            }
        } while (!password.equals(inputPassWord));

        clearConsole();

        mainMenu(inputUserName, inputPassWord, supplier);
    }

    public static void mainMenu(String userName, String password, String[][] supplier ) {
        Scanner input = new Scanner(System.in);

        System.out.println("+----------------------------------------------------------------------------------------+");
        System.out.println("|                  WELCOME TO IJSE STOCK MANAGEMENT
SYSTEM                 |");
        System.out.println("+----------------------------------------------------------------------------------------+\n");

        System.out.print("[1] Change the Credentils");
        System.out.println("\t\t\t[2] Supplier Manage");
        System.out.print("[3] Stock Manage");
        System.out.println("\t\t\t\t[4] Log out");
        System.out.println("[5] Exit the system\n");

        System.out.print("Enter an option to continue > ");
        int inputNum = input.nextInt();

        //String [][] supplier = new String[0][2]; // null error
        String[] category = new String[0];    // category array
        String [][] item = new String [0][6]; // item array

        clearConsole();
        switch (inputNum) {
            case 1 -> credentilManage(userName, password, supplier);
            case 2 -> supplierManage(supplier , category , item);
            case 3 -> stockManage(supplier, category , item);
            case 4 -> loginPage(userName , password , supplier);
            case 5 -> exitSystem();
            default -> {
                System.out.println("\n\nWrong number. please try again\n");
                mainMenu(userName, password, supplier);
            }
        }
    }

    public static void credentilManage(String userName , String password , String[][] supplier)
{

        System.out.println("+----------------------------------------------------------------------------------------+");
        System.out.println("|                              CREDENTIAL MANAGE                              |");
        System.out.println("+----------------------------------------------------------------------------------------+\n");
        Scanner scanner = new Scanner(System.in);

        String verifyUserName;
        String verifyPassword;

        do {
            System.out.print("Please enter the user name to verify it's you: : ");
            verifyUserName = scanner.next();

            if (!userName.equals(verifyUserName)) {
                System.out.println("User name is invalid. Please try again!\n");
            } else {
                System.out.println("Hey " + verifyUserName+",");
            }

        } while (!userName.equals(verifyUserName));


        do {
            System.out.print("\nEnter yout current password  : ");
            verifyPassword = scanner.next();

            if (!password.equals(verifyPassword)) {
                System.out.println("Password is incorrect. Please try again!");
            } else {
                System.out.print("Enter your new password      : ");
                String newPassword = scanner.next();

                System.out.print("\nPassword changed successfully! Do you want to go home
page (y/n) ");
                char answer = scanner.next().charAt(0);
                if (answer == 'y' || answer == 'Y') {
                    clearConsole();
                    mainMenu(verifyUserName, newPassword, supplier);
                } else {
                    clearConsole();
                    credentilManage(userName , password , supplier);
                }
            }
        } while (!password.equals(verifyPassword));
    }

    public static void exitSystem() {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Are you sure! you are leaving this program? [y/n] ");
        char answer = scanner.next().charAt(0);

        clearConsole();
        if (answer == 'y' || answer == 'Y' ) {
            System.out.println("\nbye byeee.......!");
            System.exit(0);
        } else {
            System.out.println("\n\nYou can continue this programme.\n");
            mainMenu(null, null, null);
        }

    }

    public static String[][] supplierManage(String[][] supplier , String [] category , String [][]
item) {

        System.out.println("+--------------------------------------------------------------------------------+");
        System.out.println("|                                  SUPPLIER MANAGE                                |");
        System.out.println("+--------------------------------------------------------------------------------+\n");

        System.out.print("  [1] Add supplier");
        System.out.println("\t\t\t\t[2] Update supplier");
        System.out.print("  [3] Delete supplier");
        System.out.println("\t\t\t\t[4] View supplier");
        System.out.print("  [5] Search supplier");
        System.out.println("\t\t\t\t[6] Home page ");

        Scanner scanner = new Scanner(System.in);
        System.out.print("\nEnter an option to continue > ");
        int inputNum = scanner.nextInt();

        switch (inputNum) {
            case 1 -> {
                clearConsole();
                addSupplier(supplier , category , item);
            }
            case 2 -> {
                clearConsole();
                updateSupplier(supplier , category , item);
            }
            case 3 -> {
                clearConsole();
                deleteSupplier(supplier , category , item);
            }
            case 4 -> {
                clearConsole();
                viewSupplier(supplier , category , item);
            }
            case 5 -> {
                clearConsole();
                searchSupplier(supplier , category , item);
            }
            case 6 -> {
                clearConsole();
                mainMenu(null, null, supplier);
            }
            default -> {
                clearConsole();
                System.out.println("\n\nWrong number. try again.\n");
                supplierManage(supplier , category , item);
            }

        }
        return supplier;
    }

    public static String[][] addSupplier(String[][] supplier , String [] category , String [][] item) {
        Scanner scanner = new Scanner(System.in);
        boolean addNewsupplier = true;

        while (addNewsupplier = true) {

            System.out.println("+------------------------------------------------------------------------------+");
            System.out.println("|                                     ADD SUPPLIER                                 |");
            System.out.println("+------------------------------------------------------------------------------+\n");

            String[][] newSupplier = new String[supplier.length + 1][2];

            for (int i = 0; i < supplier.length; i++) {
                for (int j = 0; j < 2; j++) {
                    newSupplier[i][j] = supplier[i][j];
                }
            }
            supplier = newSupplier;

            System.out.print("\nEnter Supplier ID   : ");
            String supplierId = scanner.nextLine();


            boolean checkId = false;
            for (int i = 0; i < supplier.length; i++) {
                if (supplier[i][0] != null && supplier[i][0].equals(supplierId)) {
                    System.out.println("This supplier is already added.");
                    checkId = true;
                    break;
                }
            }

            if (!checkId) {
                System.out.print("Enter supplier name : ");
                String supplierName = scanner.nextLine();

                supplier[supplier.length - 1][0] = supplierId;
                supplier[supplier.length - 1][1] = supplierName;

                System.out.print("\nSupplier added successfully!");
                System.out.print("Do you want to add another supplier [y/n]? ");
                char answer = scanner.next().charAt(0);
                scanner.nextLine();

                if (answer == 'y' || answer == 'Y') {
                    addNewsupplier = true;
                }
                if (answer == 'n' || answer == 'N') {
                    addNewsupplier = false;
                    clearConsole();
                    supplierManage(newSupplier , category , item);
                }

                clearConsole();
            }
        }

        return supplier;
    }

    public static void updateSupplier(String[][] supplier , String [] category , String [][] item) {
        Scanner scanner = new Scanner(System.in);
                                    boolean updateSup = true;

        while (updateSup = true) {
            System.out.println("+--------------------------------------------------------------------------+");
            System.out.println("|                                UPDATE SUPPLIER                              |");
            System.out.println("+--------------------------------------------------------------------------+\n");

            System.out.print("\nInput Supplier ID   : ");
            String supplierId = scanner.nextLine();

            boolean supplierFound = false;

            for (int i = 0; i < supplier.length; i++) {
                if (supplier[i][0] != null && supplier[i][0].equals(supplierId)) {
                    supplierFound = true;
                    System.out.println("Supplier name      : " + supplier[i][1]);

                    System.out.print("Supplier new name  : ");
                    String newName = scanner.nextLine();
                    supplier[i][1] = newName;

                    System.out.print("Update successfully! Do you want to update another supplier?
[y/n] ");
                    char answer = scanner.next().charAt(0);
                    scanner.nextLine();

                    if (answer == 'n' || answer == 'N') {
                                                                        updateSup = false;
                        clearConsole();
                        supplierManage(supplier , category , item);
                        return;
                    } else {
                                                                        updateSup = true;
                        clearConsole();
                    }
                    break;
                }
            }

            if (!supplierFound) {
                System.out.println("Supplier ID not found. Please try again.");
            }

        }
```

```
}

public static void deleteSupplier(String[][] supplier , String [] category , String [][] item) {
    Scanner scanner = new Scanner(System.in);
    boolean deleteSup = true;

    while (deleteSup = true) {
        System.out.println("+------------------------------------------------------------------------------+");
        System.out.println("|                                  DELETE SUPPLIER                                |");
        System.out.println("+------------------------------------------------------------------------------+\n");

        System.out.print("\nEnter supplier Id : ");
        String supplierId = scanner.nextLine();

        boolean checkId = false;
        int index = -1;
        for (int i = 0; i < supplier.length; i++) {
            if (supplier[i][0] != null && supplier[i][0].equals(supplierId)) {
                checkId = true;
                index = i;
                break;
            }
        }

        if (checkId) {
            for (int i = index; i < supplier.length - 1; i++) {
                supplier[i] = supplier[i + 1];
            }
            supplier[supplier.length - 1] = new String[2];

            System.out.println("\nSupplier is deleted successfully!");
            System.out.print("Do you want to delete another supplier [y/n] : ");
            char answer = scanner.next().charAt(0);
            scanner.nextLine();

            if (answer == 'n' || answer == 'N' ) {
                deleteSup = false;
                clearConsole();
                supplierManage(supplier , category , item);
                return;
            }
            if (answer == 'y' || answer == 'Y'){
                clearConsole();
            }
        } else {
            System.out.println("Supplier ID is not found.");
        }

    }
}

public static void viewSupplier(String[][] supplier , String [] category , String [][] item) {
    Scanner scanner = new Scanner(System.in);

    System.out.println("+------------------------------------------------------------------------+");
```

```
        System.out.println("|                              VIEW SUPPLIERS                              |");
        System.out.println("+--------------------------------------------------------------------------+");

                        System.out.printf("\n\n+-----------------------+-----------------------+%n");
                        System.out.printf("|     %-10s  |          %-10s  |%n", "SUPPLIER ID",
"SUPPLIER NAME");
                        System.out.printf("+-----------------------+-----------------------+%n");

                        for (int i = 0; i < supplier.length; i++) {
                                    if (supplier[i][0] != null & supplier[i][1] != null ){
                                                System.out.printf("|     %-10s  |          %-10s  |%n", supplier[i][0],
supplier[i][1]);
                                    }
                        }

                        System.out.printf("+-----------------------+-----------------------+%n");

        System.out.print("\n\nDo you want to go supplier manage page [y/n]? ");
        char answer = scanner.next().charAt(0);

        if (answer == 'y' || answer == 'Y') {
            clearConsole();
            addSupplier(supplier , category , item);
        }
        if (answer == 'n' || answer == 'N') {
            clearConsole();
            supplierManage(supplier , category , item);
        }
    }

    public static void searchSupplier(String[][] supplier , String [] category , String [][] item) {
        Scanner scanner = new Scanner(System.in);
        boolean searchSup = true;

        while (searchSup = true) {
            System.out.println("+--------------------------------------------------------------------------------+");
            System.out.println("|                                SEARCH SUPPLIER                                 |");
            System.out.println("+--------------------------------------------------------------------------------+\n");

            System.out.print("\nInput Supplier ID  : ");
            String supplierId = scanner.nextLine();

            boolean supplierFound = false;

            for (int i = 0; i < supplier.length; i++) {
                if (supplier[i][0] != null && supplier[i][0].equals(supplierId)) {
                    supplierFound = true;
                    System.out.println("Supplier name      : " + supplier[i][1]);

                    System.out.print("added successfully! Do you want to search another supplier?
[y/n] ");
                    char answer = scanner.next().charAt(0);
                    scanner.nextLine();

                    if (answer == 'n' || answer == 'n') {
```

```
                                  searchSup = false;
          clearConsole();
          supplierManage(supplier , category , item);
          return;
        }
        if (answer == 'y' || answer == 'Y') {
                                  searchSup = true;
          clearConsole();
        }
        break;
      }
    }

    if (!supplierFound) {
      System.out.println("Supplier ID not found. Please try again.");
    }

  }
}

public static void stockManage(String[][] supplier, String[] category , String [][] item) {
  Scanner scanner = new Scanner(System.in);

  System.out.println("+-----------------------------------------------------------------------------+");
  System.out.println("|                                 STOCK MANAGEMENT                                |");
  System.out.println("+-----------------------------------------------------------------------------+\n");

  System.out.print(" [1] Manage Item Categories");
  System.out.println("\t\t\t [2] Add Item");
  System.out.print(" [3] Get Items Supplier Wise");
  System.out.println("\t\t\t [4] View Item");
  System.out.print(" [5] Rank items per Unit Price");
  System.out.println("\t\t\t [6] Home Page");

  System.out.print("\nEnter an option to continue > ");
  int inputNum = scanner.nextInt();

  switch (inputNum) {
    case 1 -> {
      clearConsole();
      category = manageItemCategories(supplier, category  , item);
                      }
    case 2 -> {
      clearConsole();
      item = addItem(supplier, category , item);
                      }
    case 3 -> {
                      clearConsole();
                      getItemsSupplierWise(supplier , category , item);
                 }
    case 4 -> {
     clearConsole();
     viewItem(supplier , category , item);
     }
    case 5 ->{
        clearConsole();
        rankItemsPerUnitPrice(supplier , category , item);
       }
      case 6 -> {
       clearConsole();
       mainMenu(null , null , supplier);
       }

      default -> {
        clearConsole();
        System.out.println("\n\nWrong number. try again.\n");
        stockManage(supplier , category , item);
      }

    }
  }

  public static String[] manageItemCategories(String[][] supplier, String[] category , String [][]
item) {
    Scanner scanner = new Scanner(System.in);

    System.out.println("+---------------------------------------------------------------------------+");
    System.out.println("|                         MANAGE ITEM CATEGORY                          |");
    System.out.println("+---------------------------------------------------------------------------+\n");

    System.out.print(" [1] Add New Item Category ");
    System.out.println("\t\t\t [2] Delete Item Category");
    System.out.print(" [3] Update Item Category");
    System.out.println("\t\t\t [4] Stock Management");

    System.out.print("\nEnter an option to continue > ");
    int inputNum = scanner.nextInt();

    switch (inputNum) {
      case 1 -> {
        clearConsole();
        addNewItemCategory(supplier, category , item);
      }
      case 2 -> {
        clearConsole();
        deleteItemCategory(supplier, category , item);
      }
      case 3 -> {
        clearConsole();
        updateItemCategory(supplier, category , item );
      }
      case 4 -> {
        clearConsole();
        stockManage(supplier, category , item);
      }
      default -> {
        clearConsole();
        System.out.println("\n\nWrong number. try again.\n");
        manageItemCategories(supplier, category , item);
      }
```

```
        }

        return category;
    }

    public static String[] addNewItemCategory(String[][] supplier, String[] category , String [][] 
item) {
        Scanner scanner = new Scanner(System.in);
        boolean addNewCategory = true;

        while (addNewCategory = true) {
            System.out.println("+------------------------------------------------------------------+");
            System.out.println("|                            ADD ITEM CATEGORY                         |");
            System.out.println("+------------------------------------------------------------------+\n");

            String[] newCategory = new String[category.length + 1];

            for (int i = 0; i < category.length; i++) {
                newCategory[i] = category[i];
            }

            System.out.print("\n\nInput Category name   : ");
            String categoryName = scanner.nextLine();

            boolean checkId = false;
            for (int i = 0; i < category.length; i++) {
                if (category[i] != null && category[i].equals(categoryName)) {
                    System.out.println("This category is already added.");
                    checkId = true;
                    break;
                }
            }

            if (!checkId) {
                newCategory[category.length] = categoryName;
                category = newCategory;

                System.out.println("\nCategory added successfully!");
                System.out.print("Do you want to add another category [y/n]? ");
                char answer = scanner.next().charAt(0);
                scanner.nextLine();

                if (answer == 'n' || answer == 'N') {
                    addNewCategory = false;
                    clearConsole();
                    manageItemCategories(supplier, category , item);
                   // deleteItemCategory(supplier, newCategory , item );
                   // updateItemCategory(supplier, newCategory , item);
                }
                if (answer == 'y' || answer == 'Y') {
                    addNewCategory = true;
                }
                clearConsole();
            }
        }
        return category;
    }

    public static void deleteItemCategory(String[][] supplier, String[] category , String [][] item) {
        Scanner scanner = new Scanner(System.in);
        boolean deleteCategory = true;

        while (deleteCategory = true) {

            System.out.println("+-----------------------------------------------------------------------------+");
            System.out.println("|                               DELETE ITEM CATEGORY
  |");
            System.out.println("+-----------------------------------------------------------------------------+\n");

            System.out.print("\nEnter category name: ");
            String categoryName = scanner.nextLine();

            boolean checkId = false;
            int index = -1;
            for (int i = 0; i < category.length; i++) {
                if (category[i] != null && category[i].equals(categoryName)) {
                    checkId = true;
                    index = i;
                    break;
                }
            }

            if (checkId) {
                for (int i = index; i < category.length - 1; i++) {
                    category[i] = category[i + 1];
                }
                category[category.length - 1] = null;

                System.out.println("\nSupplier is deleted successfully!");
                System.out.print("\nDo you want to delete another supplier [y/n] : ");
                char answer = scanner.next().charAt(0);
                scanner.nextLine();

                if (answer == 'n' || answer == 'N') {
                    deleteCategory = false;
                    clearConsole();
                    manageItemCategories(supplier , category , item);
                    return;
                }
                if (answer == 'y' || answer == 'Y') {
                    deleteCategory = true;
                }
            } else {
                System.out.println("Supplier ID is not found.");
            }

        }
    }
  public static void updateItemCategory(String[][] supplier, String[] category , String [][] item)
{
      Scanner scanner = new Scanner(System.in);
      boolean updateCategory = false;


      while (updateCategory = true) {
         System.out.println("+--------------------------------------------------------------------------------+");
         System.out.println("|                              UPDATE ITEM CATEGORY
|");
         System.out.println("+--------------------------------------------------------------------------------+\n");

         System.out.print("\nEnter category name : ");
         String categoryName = scanner.nextLine();

         boolean supplierFound = false;
         for (int i = 0; i < category.length; i++) {
            if (category[i].equals(categoryName)) {
               supplierFound = true;

               System.out.print("Category new name   : ");
               String newName = scanner.nextLine();
               category[i] = newName;

               System.out.print("Update successfully! Do you want to update another supplier?
[y/n] ");
               char answer = scanner.next().charAt(0);
               scanner.nextLine();

               if (answer == 'n' || answer == 'N') {
                  updateCategory = false;
                  clearConsole();
                  manageItemCategories(supplier, category , item);
                  deleteItemCategory(supplier, category , item);
                  return;
               }
               if (answer == 'y' || answer == 'Y') {
                                                   clearConsole();
                  updateCategory = true;
               }
               break;
            }
         }
         if (!supplierFound) {
            System.out.println("Category name not found. Please try again.");
         }
        // clearConsole();
      }

  }

  public static String[][] addItem(String[][] supplier, String[] category, String[][] item) {
      Scanner scanner = new Scanner(System.in);
      boolean add = true;
```

```
            while (add == true) {


System.out.println("\n+----------------------------------------------------------------------+");
                        System.out.println("|                              ADD ITEM
|");

System.out.println("+----------------------------------------------------------------------+\n");

    if (supplier.length == 0) {
      System.out.println("OOPS! it seems that you don't have any supplier in the system");
      System.out.print("Do you want to add a new supplier? [y/n] ");
      char answer = scanner.next().charAt(0);

      if (answer == 'y' || answer == 'Y') {
        clearConsole();
        supplier = addSupplier(supplier , category , item);
      }
      if (answer == 'n' || answer == 'N'){
        clearConsole();
        stockManage(supplier, category, item);
        return item;
      }
    }

    if (category.length == 0) {
      System.out.println("OOPS! it seems that you don't have any item category in the
system");
      System.out.print("Do you want to add a new category? [y/n] ");
      char answer = scanner.next().charAt(0);

      if (answer == 'y' || answer == 'Y') {
        clearConsole();
        category = addNewItemCategory(supplier, category, item);
      } else {
        clearConsole();
        stockManage(supplier, category, item);
        return item;
      }
    }



      String[][] newItem = new String[item.length + 1][6];
      for (int i = 0; i < item.length; i++) {
        for (int j = 0; j < item[i].length; j++) {
          newItem[i][j] = item[i][j];
        }
      }
      item = newItem;

      System.out.print("\nEnter item code   : ");
      String itemCode = scanner.next();

      boolean checkId = false;
```

```
        for (int i = 0; i < item.length; i++) {
           if (item[i][0] != null && item[i][0].equals(itemCode)) {
              System.out.println("This item is already added.");
              checkId = true;
              break;
           }
        }

        if (!checkId) {
           System.out.println("\n\nSuppliers list:");

           System.out.printf("+----------------+---------------------+----------------------+%n");
                                System.out.printf("|     %-8s |  %-10s  |           %-10s  |%n",
"#","SUPPLIER ID", "SUPPLIER NAME");

System.out.printf("+----------------+---------------------+----------------------+%n");

                                for (int i = 0; i < supplier.length; i++) {
                                        if (supplier[i][0] != null & supplier[i][1] != null){
                                                System.out.printf("|     %-8s |  %-10s  |
%-10s  |%n",(i+1), supplier[i][0], supplier[i][1]);
                                        }


                                }


System.out.printf("+----------------+---------------------+----------------------+%n");

           System.out.print("\nEnter the supplier number : ");
           int supplierNumber = scanner.nextInt();
           scanner.nextLine();

           String supplierId = null;
           if (supplierNumber > 0 && supplierNumber <= supplier.length) {
              supplierId = supplier[supplierNumber - 1][0];
           }

           System.out.println("\n\nCategories list:");

           System.out.printf("+----------------+----------------------+%n");
           System.out.printf("|           %-8s |             %-15s  |%n" , "#" , "CATEGORY
NAME");
           System.out.printf("+----------------+----------------------+%n");

           for (int i = 0; i < category.length; i++) {
                                        if (category[i] != null){
                                                System.out.printf("|     %-8s |  %-15s  |%n" ,
(i+1) , category[i]);
                                        }

           }
           System.out.printf("+----------------+----------------------+%n");

           System.out.print("\n\nInput Item Category Number : ");
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```
                int categoryNumber = scanner.nextInt();
                scanner.nextLine();

                String categoryName = null;
                if (categoryNumber > 0 && categoryNumber <= category.length) {
                    categoryName = category[categoryNumber - 1];
                }

                System.out.print("\n\nInput description: ");
                String description = scanner.next();

                System.out.print("\nInput unit price: ");
                double unitPrice = scanner.nextDouble();

                System.out.print("\nInput quantity on hand: ");
                int qtyonHand = scanner.nextInt();

                item[item.length - 1][0] = itemCode;
                item[item.length - 1][1] = supplierId;
                item[item.length - 1][2] = categoryName;
                item[item.length - 1][3] = description;
                item[item.length - 1][4] = String.valueOf(unitPrice);
                item[item.length - 1][5] = String.valueOf(qtyonHand);

                System.out.println("\nItem added successfully");

                System.out.print("Do you want to add another Item [y/n]? ");
                char anotherAnswer = scanner.next().charAt(0);

                if (anotherAnswer == 'y' || anotherAnswer ==  'Y') {
                    add = true;
                }
                if (anotherAnswer == 'n' || anotherAnswer == 'N'){
                    add = false;
                    clearConsole();
                    stockManage(supplier, category, item);
                   // getItemsSupplierWise(supplier, category, item);
                }
                clearConsole();
            }
        }

        return item;
    }

    public static void getItemsSupplierWise(String[][] supplier, String[] category, String[][] item)
{
        Scanner scanner = new Scanner(System.in);
        boolean searchsup = true;


        while (searchsup = true ) {

            System.out.println("+------------------------------------------------------------------------+");
            System.out.println("|                               SEARCH SUPPLIER                           |");
            System.out.println("+----------------------------------------------------------------------+\n");

            System.out.print("\nEnter supplier id : ");
            String supplierId = scanner.next();

            boolean checkId = false;
            for (int i = 0; i < supplier.length; i++) {
                if (supplier[i][0] != null && supplier[i][0].equals(supplierId)) {
                    checkId = true;

                    System.out.print("Supplier name    : " + supplier[i][1]+"\n\n");


System.out.printf("+------------+-----------------+------------+-------------+------------+%n");
                    System.out.printf("| %-10s | %-15s | %-10s | %-10s | %-10s |%n", "Item Code",
"Description", "Unit Price", "Qty On Hand", "Category");

System.out.printf("+------------+-----------------+------------+-------------+------------+%n");

                    for (int j = 0; j < item.length; j++) {
                        if (item[j][1] != null && item[j][1].equals(supplierId)) {
                            System.out.printf("| %-10s | %-15s | %-10s | %-10s  | %-10s |%n",
item[j][0], item[j][3], item[j][4], item[j][5], item[j][2]);
                        }
                    }

System.out.printf("+------------+-----------------+------------+-------------+------------+%n");
                }
            }

            if (!checkId) {
                System.out.println("Supplier not found.");
            }
            System.out.print("\nDo you want to search for another supplier? [y/n] ");
            char answer = scanner.next().charAt(0);

            if (answer == 'n' || answer == 'N') {
                searchsup = false;

                clearConsole();
                stockManage(supplier, category, item);
            }
            if (answer == 'y' || answer == 'Y') {
                clearConsole();
                searchsup = true;
            }
        }
        clearConsole();
    }

    public static void viewItem (String [][] supplier , String [] category , String [][] item){
        Scanner scanner  =  new Scanner(System.in);

        if (item.length == 0) {
                            System.out.print("items not initialize. please add items.\n\n ");
```

```
                                clearConsole();
                  addItem(supplier, category, item);
                            }



System.out.println("+------------------------------------------------------------------+");
                System.out.println("|                         VIEW ITEM                      |");

System.out.println("+------------------------------------------------------------------+\n");


                for (int i = 0; i < category.length; i++){
                    System.out.println("\nItem Category : " + category[i]);


System.out.printf("+------------+-----------+------------+-----------+------------+%n");
                    System.out.printf("| %-10s | %-10s | %-10s | %-10s | %-10s |%n", "Supplier
ID", "Item Code", "Description", "Unit Price", "qty On Hand");

System.out.printf("+------------+-----------+------------+-----------+------------+%n");

                    for (int j = 0; j < item.length; j++){
                        if (item[j][2] != null && item[j][2].equals(category[i])){
                            System.out.printf("| %-11s | %-10s | %-11s | %-10s | %-11s |%n",
item[j][1], item[j][0], item[j][3], item[j][4], item[j][5]);

                        }
                    }


System.out.printf("+------------+-----------+------------+-----------+------------+%n");
        }


        System.out.print("\nDo you want to go stock manage page? [y/n] ");
        char answer = scanner.next().charAt(0);

        if (answer == 'y' || answer == 'Y') {
            clearConsole();
            stockManage(supplier, category, item);
        }
        if (answer == 'n' || answer == 'N') {
            clearConsole();
            mainMenu(null, null, supplier);
        }
    }

    public static void rankItemsPerUnitPrice(String[][] supplier, String[] category, String[][] item)
{
        Scanner scanner = new Scanner(System.in);

        if (item.length == 0) {
            System.out.print("items not initialize. please add items.\n\n ");
            addItem(supplier, category, item);
        }

        System.out.println("+---------------------------------------------------------------------------+");
        System.out.println("|                               RANKED UNIT PRICE                           |");
        System.out.println("+---------------------------------------------------------------------------+\n");

        double[] unitPrices = new double[item.length];
        for (int i = 0; i < item.length; i++) {
            unitPrices[i] = Double.parseDouble(item[i][4]); // Convert String to double
        }

        double[] sortedUnitPrices = arraySort(unitPrices);


System.out.printf("+--------------+------------+--------------+------------+--------------+------------+%n");
        System.out.printf("| %-12s | %-10s | %-12s | %-10s | %-12s | %-10s |%n", "Supplier ID",
"Item Code", "Description", "Unit Price", "Qty On Hand", "Category");

System.out.printf("+--------------+------------+--------------+------------+--------------+------------+%n");

        for (double unitPrice : sortedUnitPrices) {
            for (String[] currentItem : item) {
                if (Double.parseDouble(currentItem[4]) == unitPrice) { // Convert String to double
                    System.out.printf("| %-12s | %-10s | %-12s | %-10s | %-12s | %-10s |%n",
currentItem[1], currentItem[0], currentItem[3], currentItem[4], currentItem[5], currentItem[2]);
                }
            }
        }


System.out.printf("+--------------+------------+--------------+------------+--------------+------------+%n");


        System.out.print("\nDo you want to go stock manage page? [y/n] ");
        char answer = scanner.next().charAt(0);

        if (answer == 'y' || answer == 'Y') {
            clearConsole();
            stockManage(supplier, category, item);
        }
        if (answer == 'n' || answer == 'N') {
            clearConsole();
            mainMenu(null, null, supplier);
        }
    }

    public static double[] arraySort(double[] newArray) {
        for (int i = 0; i < newArray.length - 1; i++) {
            for (int j = 0; j < newArray.length - 1 - i; j++) {
                if (newArray[j] > newArray[j + 1]) {
                    double temp = newArray[j];
                    newArray[j] = newArray[j + 1];
                    newArray[j + 1] = temp;
                }
            }
        }

        return newArray;
    }

}
```