Subject-Computer Science and Carrier Pathways.

Course Code-ETCCCP 105

Assignment Number-01

Assignmenmt Title-Design and Stimulate a real world Processing Using Flowcharts and Pseudocode.

Program-B.Tech CSE Core

TOPIC-Liberary Book Browsing System

step 1-Problem Section

A Liberary Book System is a digital solution that allows users to search and explore books available in a liberary. Instead od manually going through shelves, users can quickly find books by entering keywords such as the book's title , author ,or genre. The system also helps liberarians manage the collection by adding new books, updating information, and marketing borrowed books. This makes library management faster, more efficient, and error free.

Step 2-Problem Analysis

Abstraction:-

Abstraction refers to focusing only on essential details and ignoring unnecesary information.

1. Book Details(title, author,genre,availability)

2.We ignore irrelevant details such as the book's cover design or the physical location of the shalf.

Decomposition:-

Decomposition means breaking the main problem into smaller, manageable parts.

The Liberary Book Browsing System can be divided into the folllowing components:-

1. Book Management: Add, remove or update book records.

2. Search Function: Allows users to search by title, author, or genre.

3. Display Function: Show the matching books with their details.

4. Availability Check: Indicate whether the book is available or borrowed.

Patern Recognition:-

Pattern recognition involves identifying similarties with other systems.

The systems shows patterns similar to:

1. Online Shoping Websites(searching items by name or category)

2. Movie or Music Apps(Browsing by Genre or Creator)

3. E-Book Platforms(Displaying available and unavailble books)

Step 3-Solution Design

Flowcharts:-

Start

↓

Search Book

↓

Search

↓

Enter Book Name

↓

Is Book Found?

↓ ↓

Yes No

Show Details Show "Not Available"

↓

END

Pseudocode:-

```
START
Display "Library Menu"
Display "1. Search Book"
Display "2. Exit"
Input Choice
if choice==1: Then
    Display "Enter Book Name"
    Input book_name
    if book_name is in library then
        Display "Book Found"
        Display Book Details
    else:
        Display "Book Not Available"
else:
   if choice==2: Then
        Diusplay "Exiting the System"
END
```

Step 4-Implementation(Python Code)

```
Liberaray=[{title:"Harry Potter",author:"J.K Rowling",
Genre:"Fiction"},{title:"Chacha Chaudhary",author:"Pran
Kumar Sharma",Genre:"Comedy"}]

choice=int(input("enter choice"))

if choice==1:
    book_name=input("enter book name")
    for i in Liberary:
            if book[tittle].lower()==book_name.lower():
                    print(i)
                    break
else:
   print("Invalid choice")
```

Expected Output

1. Search Book

2.Enter your choice(1 or any other)

3. Enter the book name:-Harry Potter

output:-title:Harry Potter,Author:J.K. Rowling,Genre:Fiction

Step 5-Report Compilation]

The Liberary Browsing System assignment includes all the steps from problem identification to implementatation. The Report contains:-

1. Introduction

2. Problem Analysis

-Abstraction

-Decomposition

-Patern Recognition

3. Flowcharts

4.Pseudocode

5.Python Program

6.Expected Output

Design:-

I made flowcharts, pseudocodes and python code to write down the logic in a structural way.

Implementation:- This system was implemented in python using dictionaries in which the dictionary was inside a list. The dictionary stores title,author and genre of the book. The code searches for the book according to the users choice.

Reflection:-

Wrorking on the Liberary Book Browsing System hepled me to understand the complete process of solving a real world problem using computational thinking.