Total Marks-15   **Instructor Dr. Wafa Basit**   **Total Time-20 minutes**
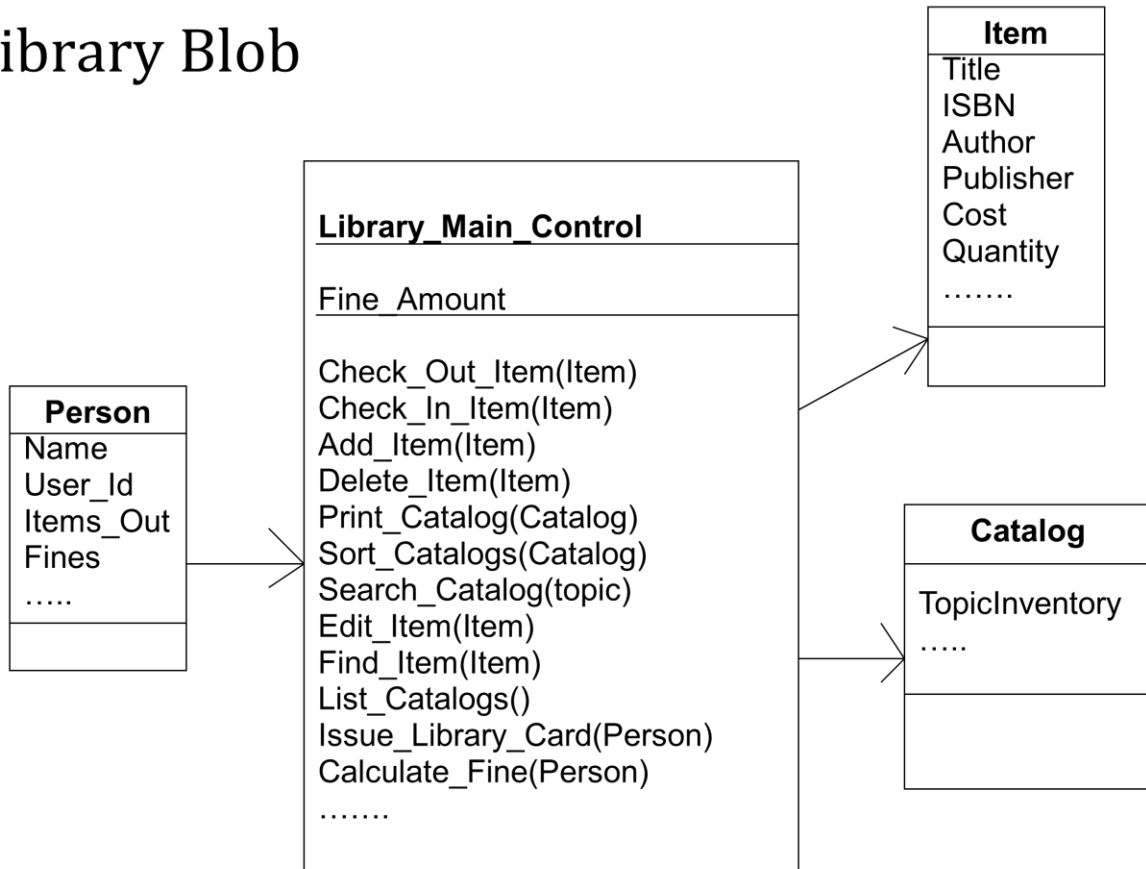
Identify the anti –pattern and improve the design keeping in the mind the design principles taught in the class.

Library Blob

Item
Title
ISBN
Author
Publisher
Cost
Quantity
....

Library_Main_Control

Fine_Amount

Check_Out_Item(Item)
Check_In_Item(Item)
Add_Item(Item)
Delete_Item(Item)
Print_Catalog(Catalog)
Sort_Catalogs(Catalog)
Search_Catalog(topic)
Edit_Item(Item)
Find_Item(Item)
List_Catalogs()
Issue_Library_Card(Person)
Calculate_Fine(Person)
....

Person
Name
User_Id
Items_Out
Fines
.....

Catalog

TopicInventory
.....

"This is the class that is really the heart of our architecture "

Redefine Relationships

Fine

Fine_Amount

Calculate_Fine(Person)

Library_Main_Control

SelectItemMenu(item,menuchoice)

SelectCatalogMenu(Catalog, menuchoice)
Find _fine(Person)

Issue_Library_Card(Person)
....

Item

Title
ISBN
Author
Publisher
Cost
Quantity
....

Check_Out_Item()
Check_In_Item()
Add_Item()
Delete_Item()
Edit_Item()
Find_Item()

Person

Name
User_Id
Items_Out
Fines
.....

Catalog

Topic_Inventory
....

Print_Catalog()
Sort_Catalog()
Search_Catalog(topic)
List_Catalogs()
SelectItemMenu(item,menuchoice)