**UML Design**

**Login:**

**QDialog**

**Logino**

-userLabel\* : QLabel

-passLabel\*: QLabel

-userLineEdit\*: QLineEdit

-passLineEdit\*: QLineEdit

-loginButton\*: QPushButton

-quitButton\*: QPushButton

+Logino(parent: QWidget\*) : void

+~Logino(): void

-reject() : void

-OnQuit(): void

-OnLogin(): void

**Dashboard**

**Dashboard:**

**Dashboard**

**//Variables for username Display**

-userNameLabel\*: QLabel

-userNameBox\*: QGroupBox

-userNameLayout\*: QHBoxLayout

**//Variables for timeline Display**

-timelineLabel\*: QLabel

-timelineCombo\*: QComboBox

-timelineBox\*: QGroupBox

-timelineLayout\*: QHBoxLayout

**//Variables for Display Button**

-addIncomeButton\*: QPushButton

-addExpenseButton\*: QPushButton

-viewTransactionButton\*: QPushButton

-buttonBox\*: QGroupBox

-buttonLayout\*: QGridLayout

**// Variable to combine Timeline and Buttons**

-groupTimelineButtonsLayout\*: QVBoxLayout

// **Variables for Figures Display**

-monthLabel\*: QLabel

-monthValueLabel\*: QLabel

-previousBalanceLabel\*: QLabel

-previousBalanceValueLabel\*: QLabel

-currentIncomeLabel\*: QLabel

-currentIncomeValueLabel\*: QLabel

-currentExpenseLabel\*: QLabel

-currentExpenseValueLabel\*: QLabel

-currentMonthBalanceLabel\*: QLabel

-currentMonthBalanceValueLabel\*: QLabel

QLabel \*totalBalanceLabel;

QLabel \*totalBalanceValueLabel;

QGroupBox \*figureBox;

QGridLayout \*figureLayout;

**QWidget**

-totalBalanceLabel\*: QLabel

-totalBalanceValueLabel\*: QLabel

-figureBox\*: QGroupBox

-figureLayout\*: QGridLayout

**// Variable to combine Figures, Timeline and Buttons**

-groupFiguresTimelineButtonsLayout\*:QHBoxLayout

**// Variables for Graph Display**

-customPlot\*:QCustomPlot

-graphLabel\*: QLabel

-graph\*:QCPBarsGroup

-incomeGraph\*: QCPBars

-expenseGraph\*: QCPBars

-QVector<QString> labels

-QVector<double> ticks

**//Income and Expense Data to show in Graph**

-incomeData: QVector<double>

-expenseData: QVector<double>

-graphBox\*:QGroupBox

-graphLayout\*:QVBoxLayout

**// Variable to combine Graph, Figures, Timeline and Buttons**

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-groupraphFiguresTimelineButtonsLayout\*: QVBoxLayout

**// Variable to display Main layout**

-mainLayout\*:QVBoxLayout

**// Expense Window**

**-**AddExpense expenseWindow

**// Income Window**

**-**AddIncome incomeWindow

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-monthStr\*:QString

-prevBalanceStr\*: QString

-currentIncomeStr\*:QString

-currentExpenseStr\*:QString

-currentMonthBalanceStr\*:QString

-totalBalanceStr\*:QString-

+getTimeline(int index): void

+showExpenseWindow(): void

+showIncomeWindow() : void

+Dashboard(parent: QWidget\*) : void

+~Dashboard(): void

+showUserName():void

+showTimeline():void

+showButtons():void

+combineTimelineButtons():void

+showFigures(): void

+combineFiguresTimelineButtons(): void

+showGraph(): void

+combineGraphFiguresTimelineButtons():void

+showMainLayout():void

+updateGraph(int timeline):void

+updateFigures(int timeline): void

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1.

ReadDatabase

-fileName: String

- username: string

-Date: string

+ReadTransaction (Transaction& data): void

Xsdmasbcf,Anf,af

Date

WriteDatabase

2.

-fileName: String

- username: string

+writeTransaction(Transaction& tran): void

+ResetUserData(): void

Xsdmasbcf,Anf,af

3.

Transaction

-amount: double

-description: string

-TranCategory\_t category: string

-paymentType\_t paymentType: string

**//Method to get Transaction details given by user**

**+** getTransactionDetails(): void

**// Send the Transaction Details to DataBase to make an entry**

+ sendTransactionToDatabase(): void

**// Get/Set Methods**

**+**TranType\_t getType(): void

**+**getAmount():double

+getDescription(): string

+getCategory():TranCategory\_t

+getPaymentType():PaymentType\_t

+setType(TranType\_t t): void

+setAmount(double amount): void

+setDescription(string s): void

+ setCategory(TranCategory\_t category) : void

+setPaymentType(PaymentType\_t paymentType): void

+ setDate(int month, int day, int year): void

**GraphData**

4.

-userName: string

-fileName: string

-date: string

-incomeValue[31]: int

-expenseVvalue[31]: int

**//Load last 6 days' expense & income into respective vector**

+ LastSixDays(vector<double>& sixDays\_Expense, vector<double>& sixDays\_Income, Date date) : void

**//Load last 6 Months' expense & income into respective vector**

+ LastSixMonths(vector<double>& sixMonths\_Expense,vector<double>& sixMonths\_Income, Date date): void

**//Load last 6 Years' expense & income into respective vector**

**+** LastSixYears(vector<double>& sixYears\_Expense, vector<double>& sixYears\_Income, Date date): void

5.

-month: int

-day: int

-year: int

**// constructor**

+Date(int month = 1, int day = 1, int year = 2016)

**//Get Set Methods**

**+getm**onth(): int

**+**getDay(): int

+getYear(): int

+setMonth(int month): void

+setDay(int day: void

+ setYear(int year): void

Date