MINI PROJECT

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Code:

```
package application; import
javafx.application.Application; import javafx.stage.Stage;
import javafx.scene.Scene; import
javafx.scene.layout.GridPane; import
javafx.scene.control.Button; import
javafx.scene.control.Label; import
javafx.scene.control.TextField; import javafx.geometry.Pos;
import javafx.geometry.HPos; public class
LoanCalculator extends Application { private TextField
tfAnnualInterestRate = new TextField(); private TextField
tfNumberOfYears = new TextField(); private TextField
tfLoanAmount = new TextField(); private TextField
tfMonthlyPayment = new TextField(); private TextField
tfTotalPayment = new TextField(); private Button
btCalculate = new Button("Calculate");
@Override
public void start(Stage primaryStage) {
// Create UI
GridPane gridPane = new GridPane();
gridPane.setHgap(5); gridPane.setVgap(5);
gridPane.add(new Label("Annual Interest Rate:"), 0, 0);
gridPane.add(tfAnnualInterestRate, 1, 0);
gridPane.add(new Label("Number of Years:"), 0, 1);
gridPane.add(tfNumberOfYears, 1, 1);
gridPane.add(new Label("Loan Amount:"), 0, 2);
gridPane.add(tfLoanAmount, 1, 2); gridPane.add(new
Label("Monthly Payment:"), 0, 3);
gridPane.add(tfMonthlyPayment, 1, 3);
gridPane.add(new Label("Total Payment:"), 0, 4);
gridPane.add(tfTotalPayment, 1, 4);
gridPane.add(btCalculate, 1, 5);
btCalculate.setOnAction(e -> calculateLoanPayment());
```

```
Scene scene = new Scene(gridPane, 400, 250);
primaryStage.setScene(scene); primaryStage.show();
}
private void calculateLoanPayment() {
// Get values from text fields double
interest =
Double.parseDouble(tfAnnualInterestRate.getText()); int
year = Integer.parseInt(tfNumberOfYears.getText());
double loanAmount = Double.parseDouble(tfLoanAmount.getText());
// Create a loan object
Loan loan = new Loan(interest, year, loanAmount); //
Display monthly payment and total payment
tfMonthlyPayment.setText(String.format("$%.2f",
loan.getMonthlyPayment()));
tfTotalPayment.setText(String.format("$%.2f",
loan.getTotalPayment()));
}
public static void main(String[] args) {
launch(args);
}
}
class Loan implements java.io.Serializable { private double
annualInterestRate; private int numberOfYears; private
double loanAmount; private java.util.Date loanDate; public
Loan(double annualInterestRate, int numberOfYears,
double loanAmount) { this.annualInterestRate =
annualInterestRate; this.numberOfYears = numberOfYears;
this.loanAmount = loanAmount; loanDate = new
java.util.Date();
}
public double getAnnualInterestRate() {
return annualInterestRate;
}
public void setAnnualInterestRate(double annualInterestRate) {
this.annualInterestRate = annualInterestRate;
}
public int getNumberOfYears() {
return numberOfYears;
```

```
}
public void setNumberOfYears(int numberOfYears) {
this.numberOfYears = numberOfYears;
}
public double getLoanAmount() { return
loanAmount;
}
public void setLoanAmount(double loanAmount) {
this.loanAmount = loanAmount;
}
public double getMonthlyPayment() { double
monthlyInterestRate = annualInterestRate / 1200; double
monthlyPayment = loanAmount * monthlyInterestRate / (1 -
(Math.pow(1 / (1 + monthlyInterestRate), numberOfYears * 12)));
return monthlyPayment;
}
public double getTotalPayment() { double totalPayment =
getMonthlyPayment() * numberOfYears *
12;
return totalPayment;
}
public java.util.Date getLoanDate() {
return loanDate;
}
}
```

Output: