Project

Project Part 1: Mortgage Rate Calculator

Purpose

One of the most common uses of Java applications is an online amortization calculator for current mortgage rates. A mortgage loan calculator is a tool that allows for quick access to loan amount, years the loan will take to pay off, and interest rates. The purpose of Project Part 1 is to create a loan amortization calculator that will allow the user to input a specific loan amount along with the number of years and interest rate, and with a click of a button be able to see a full report of monthly payments and the overall length of the loan.

Course Objectives and Learning Outcomes

- Write Java programs by using primitive data types and operations.
- Write Java programs by using user-defined methods for real world objects.
- Write Java programs by using user-defined objects and classes.
- Create, compile, and execute a Java program.
- Write a Java program to display text in a message dialog box.
- Identify and analyze the different numeric data types to support object-oriented programming.
- Create user interfaces using frames, panels, and simple GUI components.

Required Resources

- ITT Tech Virtual Library
- Textbook

Project Logistics

To successfully complete Part 1 of the project, you must develop a Java application that will display a loan amortization table. To receive a passing grade, the application must do the following:

1. Allow loan amount inputs
2. Allow number of years of loan inputs
3. Allow interest rate of loan inputs
4. Produce output that generates monthly payments and total loan repayment based on input

Deliverables

- One working Java application file
- Documentation on any problem areas

- Due in Unit 8

Project Part 2: Enhanced Mortgage Rate Calculator

Purpose

Java applications are commonly used to create online amortization calculators for current mortgage rates. An amortization calculator is a tool that helps users input the loan amount, years the loan will take to pay off, and the interest rates to receive a report of monthly payments. The purpose of Project Part 2 is to create a loan amortization calculator that lets the user input a specific loan amount, number of years, and interest rate. Then with a click of a button the calculator displays a full report of monthly payments along with the decrease in the overall balance for each month.

Course Objectives and Learning Outcomes

- Write Java programs by using primitive data types and operations.
- Write Java programs by using user-defined methods for real world objects.
- Write Java programs by using user-defined objects and classes.
- Develop GUIs (Graphical User Interfaces) for Java applications.
- Create, compile, and execute a Java program.
- Write a Java program to display text in a message dialog box.
- Identify and analyze the different numeric data types to support object-oriented programming.
- Write a program that receives input from the console.
- Create user interfaces using frames, panels, and simple GUI components.

Required Resources

- ITT Tech Virtual Library
- Textbook

Project Logistics

To successfully complete Part 2 of the project, you must develop another amortization table in Java. To receive a passing grade, the application must do the following:

1. Allow the input of the loan amount
2. Allow the input of interest rate
3. Allow the input of length of loan
4. Produce output to display overall monthly decrease in total payments from overall loan amount.

Deliverables

- One working Java application file

- Documentation on any problem areas
- Due in Unit 11

Final Project Grading Rubric

The final project is worth 17% of the overall grade. The final project has two parts, the first part being 8% of the overall grade and the second part being 9% of the overall grade. Grade each question based off of the information that is listed below.

Calculations: Do the math calculations for the interest rates produce the desired results every time? Excellent results every time, 3 points, satisfactory, 2 points and poor, 1 point.

GUI: Does the Java program have a Graphical User Interface and not in the command prompt? Excellent GUI display, 3 points, satisfactory, 2 points, and poor, 1 point.

Documentation: Throughout the Java programming code, are different sections documented to make reviewing the code and changes easy to understand? Excellent documentation is present and easy to understand, 3 points, satisfactory, 2 points, and poor, 1 point.

Code: Are all sections of the code relevant to the application that will be created and displayed on the computer? Excellent use of code format and structure, 3 points, satisfactory, 2 points, and poor, 1 point.

Display: Does the application display the input boxes along with the output information in the correct areas of the application? Excellent use of alignment and positioning, 3 points, satisfactory, 2 points, and poor, 1 point.

Comparison: Is the application able to display several interest rates on the same page of the application for comparison purposes? Excellent use of comparing multiple input information, 3 points, satisfactory, 2 points, and poor, 1 point.

Week:
Final Exam Date:
Student Name:
Part 1: / 18 (8%)
Part 2: / 18 (9%)
Total Grade: / 36

Directions: Grade both sections based off of the table below. The results will be combined for the overall final project grade worth 17%.

	Part 1	**Part 2**
Calculations		
GUI		
Documentation		
Code		
Display		
Comparison		
Total		

Writing Assignment Rubric

Length: If the paper meets the required length, 3 points; 75% of length, 2 points; and less than 75%, 1 point.

Context: Is the paper organized with an introduction and conclusion? Excellent organization, 3 points; satisfactory organization, 2 points; poor organization, 1 point.

Progression: Does the writer progress logically from paragraph to paragraph and idea to idea? Excellent progression of ideas, 3 points; satisfactory progression, 2 points; poor progression, 1 point.

Coverage: Does the writer cover all areas of each assigned topic or question? Excellent coverage of question asked, 3 points; satisfactory coverage, 2 points; poor coverage, 1 point.

Elaboration: Does the writer provide evidence for conclusions or statements using the text or other materials? Excellent elaboration of ideas, 3 points; satisfactory elaboration, 2 points; poor elaboration, 1 point.

Week:
Assignment:
Student Name:
Total Grade: / 15

Directions: Provide a rating that best represents performance in completing the assignment.

	Excellent: 3	**Satisfactory: 2**	**Poor: 1**
Length			
Context			
Progression			
Coverage			
Elaboration			
Total			

Question Assignment Rubric

The assignments, either written or questions are worth 2% each week for a total of 20% of the overall grade. Grade each question assignment based off of the information that is listed below.

Multiple Choices: There are a total of 20 questions, either multiple choice or fill in the blank.

Week:

Question Assignment:

Student Name:

Total Grade: / 20

Directions: Each question is worth 1 point and each question only has one correct answer.