

Java Projects

The following pages describe the 9 projects proposed for the Java course (CS102). Please, note the following:

- The project counts towards 10% of the final grade.
- Groups of 2-3 students, based on your TA approval, will be responsible for working on one project. Only one student will be allowed to work on his/her own if the total number of students is odd. This student must take the project #9.
- Each group will give a short presentation to show their project and to explain the role of each student in the project. This is due during the last week of the course

Please, form a group and register your group and the chosen project with your TA. Max of 2 groups per lab are allowed to take the same project.

In the following pages 9 separate projects are detailed, each in a separate page.

1. Text File Chopper

The File chopper takes one file as an input and divides it into a number of files each file containing x lines. The interface takes the file name as input and the number of lines, each of the output files should contain. For example, if you give a file with 20 lines as input and enter 4 as number of lines. Then 5 files will be generated, each containing only 4 lines of the input file. The interface should look as in the figure:

File Name:	Browse	
Number of lines:		
Run	Close	

Note, that the output files will be generated in the same directory where the input file resides.

2. Text File Assembler

The file assembler can combine files into one file. The interface takes the names of max of three files and the name of the output file. If for example each file contains 3 lines of text, the resulting file will have 15 lines in total. The interface should look as following:

File1 Name:	Browse	
File2 Name:	Browse	
File3 Name:	Browse	
Output File Name:		
Run		Close

3. Calculator

The calculator is a simple calculator interface. The calculator can add, subtract, multiply, divide, and calculate the square root. You can use the methods you have written before. The interface should look as follows:

1	2	3	sqrt
4	5	6	*
7	8	9	/
0	+	-	=
Close			

The top box shows the number and the buttons below operate like any other calculator.

4. Encryption/Decryption

For security purposes, some files need to be encrypted, then decrypted later on when needed. The project implements a very simple encryption/decryption process:

The encryption here works by subtracting a value from the ASCII code of each character in the file then writing the new characters into an output file, which is stored in the same directory where the input file is stored.

The decryption reverses the process of encryption. It works by adding a value to the ASCII code of each character in the input file then writing the new characters into an output file, which is stored in the same directory where the input file is stored.

The interface looks as following:

Input File Name: Browse			
Encrypt	Decrypt	Close	

5.File/Text Search

This project searches for a word in a file. It returns the number of occurrences. For each occurrence, it shows the line number and the location in the line.

For example, if we have the following file as input:

*The Java class has 18 students.
The students need to work hard to grasp the material.
When assigning a homework, it must be done in time.
All what is taken in class is to be practiced at home.*

and we are looking for the word “to”, then the output will be saved in an output file and will contain the following:

*Line # : Location
2 : 18
4 : 30*

The program has the following interface:

File Name:	Browse	
Word:		
Run		Close

Note, that the output of running the application will be written into the empty space in the lower part of the interface.

6.Directory Details

This project will list files/directories found in a given directory. The project will take the name of the directory. For each file, it will list its name, size, last date of modification, type. For each directory, it will list its name, last modification, type, and whether empty or not.

For example, if we have the following file as input:

<i>file name</i>	<i>size</i>	<i>last Modification</i>	<i>type</i>	<i>empty</i>
<i>course.txt</i>	<i>232</i>	<i>12/12/2008 23:12</i>	<i>file</i>	
<i>courses</i>		<i>12/12/2008 23:12</i>	<i>directory</i>	<i>no</i>

The program has the following interface:

Directory:	Browse	

Note, that the output of running the application will be written into the empty space in the lower part of the interface.

7. My Vocabulary

This project will allow you to enter a new word, with its meaning and picture of a word to your word list. It will also allow you to look for a word and show it, its meaning, and word related to it if exists.

The project will add new words to file called vocabulary.txt

The new word with its meaning and the path of picture will be appended to the vocabulary.txt.

The program has the following interface:

Word		
Meaning		
Picture	Browse	
Add	Close	

Note, when searching for a word, the word, its picture (not the path), and its meaning is to be shown in the empty space in the lower part of the interface.

8.Text File Details

This project is given a file name. It then open that file, calculate the number of words, and lines in that file. Program will list number of words, number of lines in text file, and file size.

The program has the following interface:

File Name:		Browse	
Run		Close	

Note, that the output of running the application will be written into the empty space in the lower part of the interface.

9. Java Projects Interface

This project displays an interface to interact with all other projects. It has buttons to activate all other projects as shown in the Figure.

File Chopper	File Assembler	Calculator	Encryption/ Decryption	Name of Project and who did it ← →
Text Search	File Details	Vocabulary	Directory Details	

Each button will activate the corresponding project. In addition, two arrow buttons are required. The buttons let you go back and forth and browse each of the 9 projects with brief info about it and who did it.