CS209A_Lab2

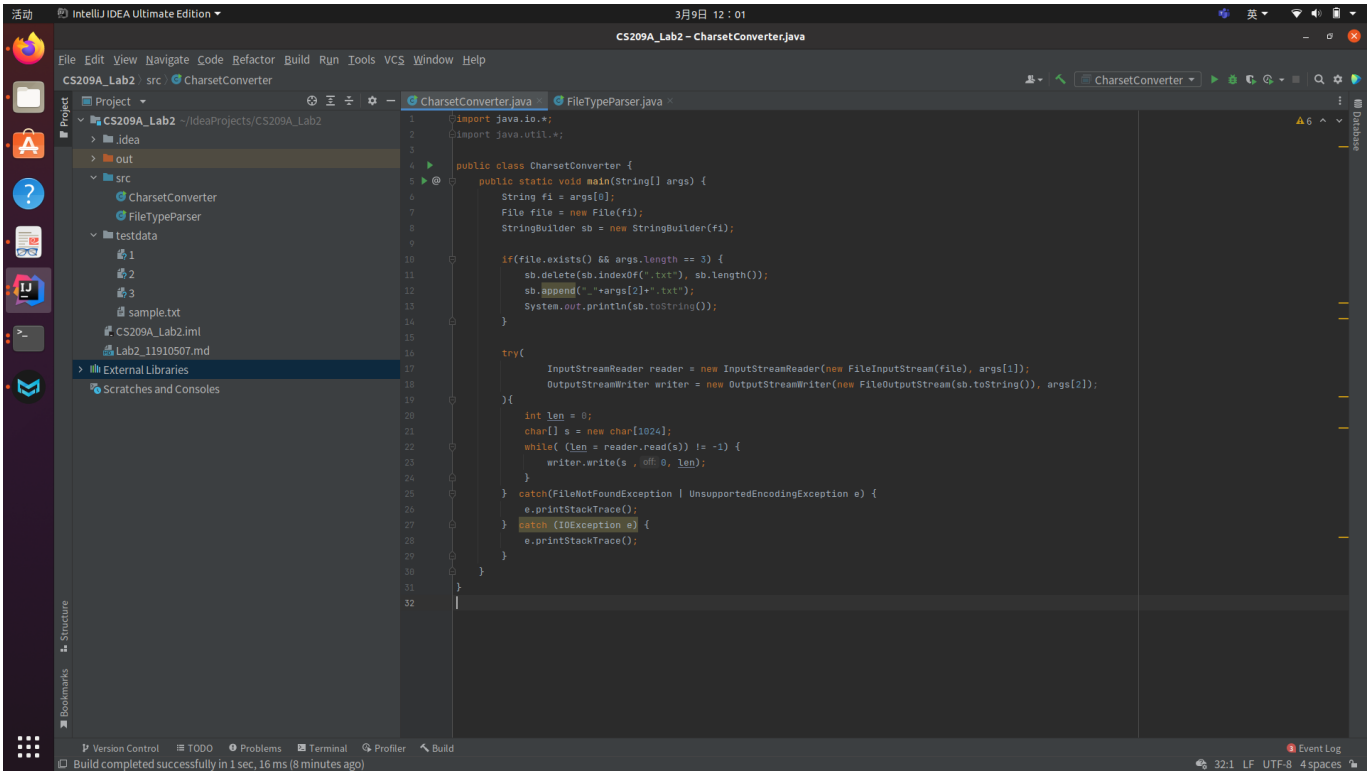
worked by 11910507

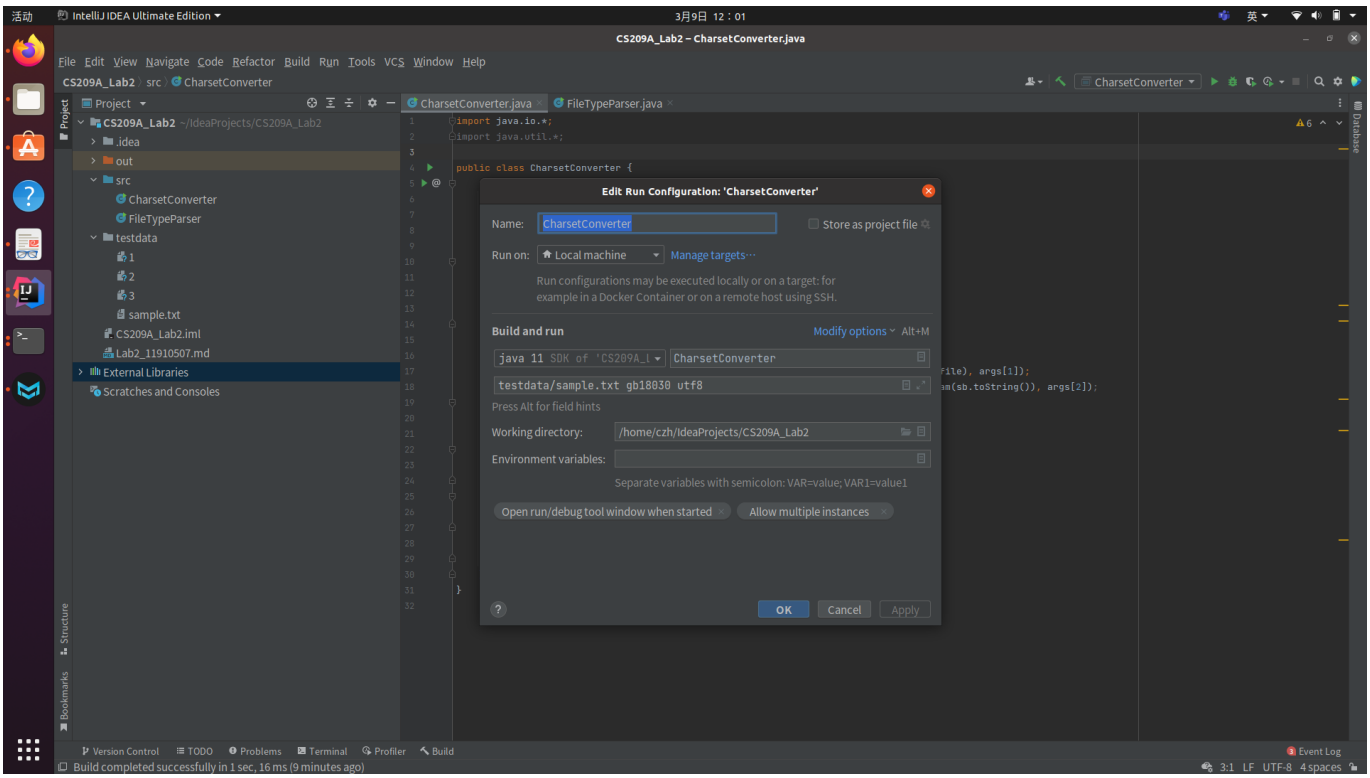
Q1

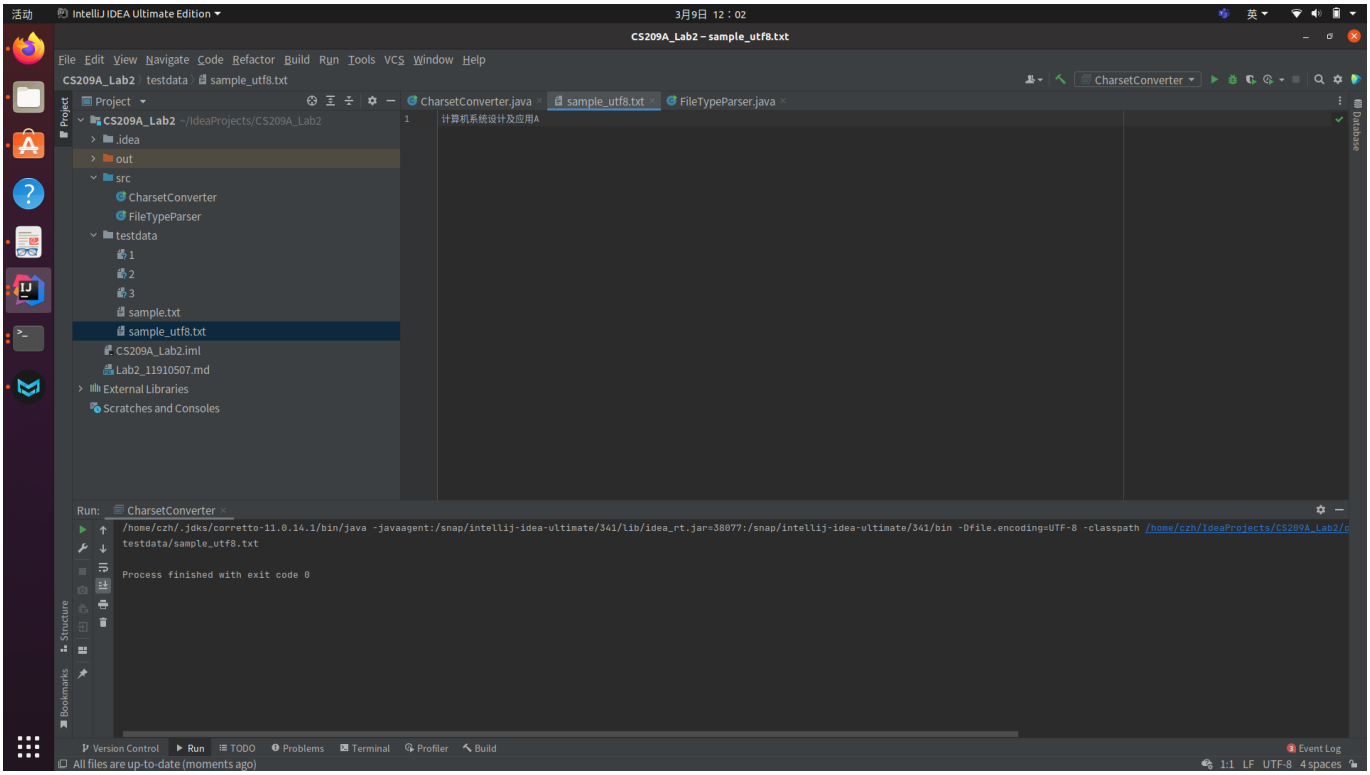
Code

```java
import java.io.*;
import java.util.*;

public class CharsetConverter {
    public static void main(String[] args) {
        //args is the array of input value
        String fi = args[0];
        File file = new File(fi);
        StringBuilder sb = new StringBuilder(fi);

        //Use StringBuilder to create the output file name
        if(file.exists() && args.length == 3) {
            sb.delete(sb.indexOf(".txt"), sb.length());
            sb.append("_"+args[2]+".txt");
            System.out.println(sb.toString());
        }

        try(
                //Read with args[1] and Write as args[2]
                InputStreamReader reader = new InputStreamReader(new FileInputStream(file),
args[1]);
                OutputStreamWriter writer = new OutputStreamWriter(new
FileOutputStream(sb.toString()), args[2]);
        ){
            int len = 0;
            char[] s = new char[1024];
            while( (len = reader.read(s)) != -1) {
                writer.write(s ,0, len);
            }

        }
        //Exception is a must for program to run
        catch(FileNotFoundException | UnsupportedEncodingException e) {
            e.printStackTrace();
        }  catch (IOException e) {
            e.printStackTrace();
        }
    }
}
```

Result


活动
IntelliJ IDEA Ultimate Edition
3月9日 12：01
英
CS209A_Lab2 – CharsetConverter.java
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
CS209A_Lab2 src CharsetConverter
CharsetConverter
Project
CS209A_Lab2 ~/IdeaProjects/CS209A_Lab2
.idea
out
src
CharsetConverter
FileTypeParser
testdata
1
2
3
sample.txt
CS209A_Lab2.iml
Lab2_11910507.md
External Libraries
Scratches and Consoles
CharsetConverter.java
FileTypeParser.java
import java.io.*;
import java.util.*;
public class CharsetConverter {
public static void main(String[] args) {
String fi = args[0];
File file = new File(fi);
StringBuilder sb = new StringBuilder(fi);
if(file.exists() && args.length == 3) {
sb.delete(sb.indexOf(".txt"), sb.length());
sb.append("_"+args[2]+".txt");
System.out.println(sb.toString());
}
try(
InputStreamReader reader = new InputStreamReader(new FileInputStream(file), args[1]);
OutputStreamWriter writer = new OutputStreamWriter(new FileOutputStream(sb.toString()), args[2]);
){
int len = 0;
char[] s = new char[1024];
while((len = reader.read(s)) != -1) {
writer.write(s , off: 0, len);
}
} catch(FileNotFoundException | UnsupportedEncodingException e) {
e.printStackTrace();
} catch (IOException e) {
e.printStackTrace();
}
}
}
Version Control
TODO
Problems
Terminal
Profiler
Build
Event Log
Build completed successfully in 1 sec, 16 ms (8 minutes ago)
32:1 LF UTF-8 4 spaces


活动
IntelliJ IDEA Ultimate Edition
3月9日 12：01
英
CS209A_Lab2 – CharsetConverter.java
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
CS209A_Lab2 src CharsetConverter
CharsetConverter
Project
CS209A_Lab2 ~/IdeaProjects/CS209A_Lab2
.idea
out
src
CharsetConverter
FileTypeParser
testdata
1
2
3
sample.txt
CS209A_Lab2.iml
Lab2_11910507.md
External Libraries
Scratches and Consoles
CharsetConverter.java
FileTypeParser.java
Edit Run Configuration: 'CharsetConverter'
Name: CharsetConverter
Store as project file
Run on: Local machine
Manage targets…
Run configurations may be executed locally or on a target: for example in a Docker Container or on a remote host using SSH.
Build and run
Modify options Alt+M
java 11 SDK of 'CS209A_L
CharsetConverter
testdata/sample.txt gb18030 utf8
Press Alt for field hints
Working directory: /home/czh/IdeaProjects/CS209A_Lab2
Environment variables:
Separate variables with semicolon: VAR=value; VAR1=value1
Open run/debug tool window when started
Allow multiple instances
OK
Cancel
Apply
Version Control
TODO
Problems
Terminal
Profiler
Build
Event Log
Build completed successfully in 1 sec, 16 ms (9 minutes ago)
3:1 LF UTF-8 4 spaces


活动
IntelliJ IDEA Ultimate Edition
3月9日 12：02
英
CS209A_Lab2 – sample_utf8.txt
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
CS209A_Lab2 testdata sample_utf8.txt
CharsetConverter
Project
CharsetConverter.java
sample_utf8.txt
FileTypeParser.java
CS209A_Lab2 ~/IdeaProjects/CS209A_Lab2
.idea
out
src
CharsetConverter
FileTypeParser
testdata
1
2
3
sample.txt
sample_utf8.txt
CS209A_Lab2.iml
Lab2_11910507.md
External Libraries
Scratches and Consoles
1
计算机系统设计及应用A
Run:
CharsetConverter
/home/czh/.jdks/corretto-11.0.14.1/bin/java -javaagent:/snap/intellij-idea-ultimate/341/lib/idea_rt.jar=38077:/snap/intellij-idea-ultimate/341/bin -Dfile.encoding=UTF-8 -classpath /home/czh/IdeaProjects/CS209A_Lab2/o
testdata/sample_utf8.txt
Process finished with exit code 0
Version Control
Run
TODO
Problems
Terminal
Profiler
Build
Event Log
All files are up-to-date (moments ago)
1:1 LF UTF-8 4 spaces

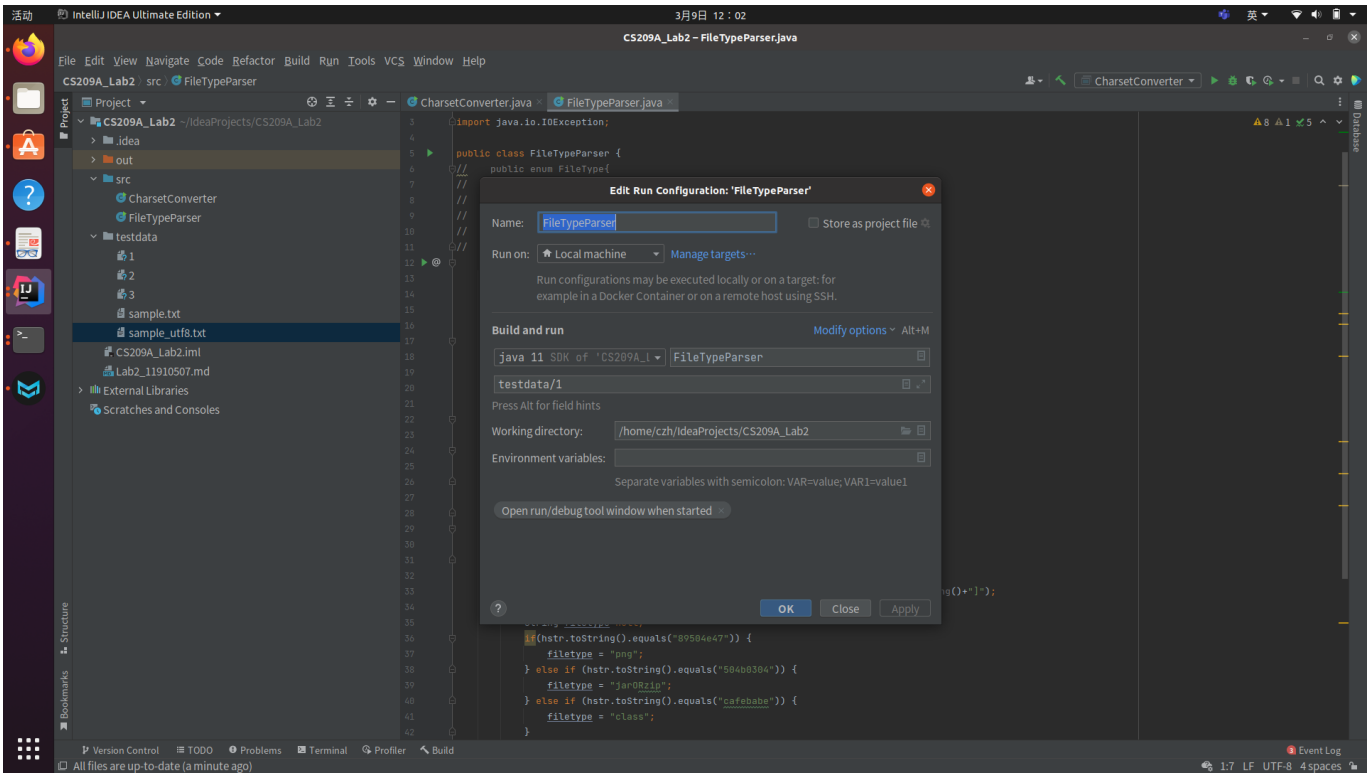
Q2

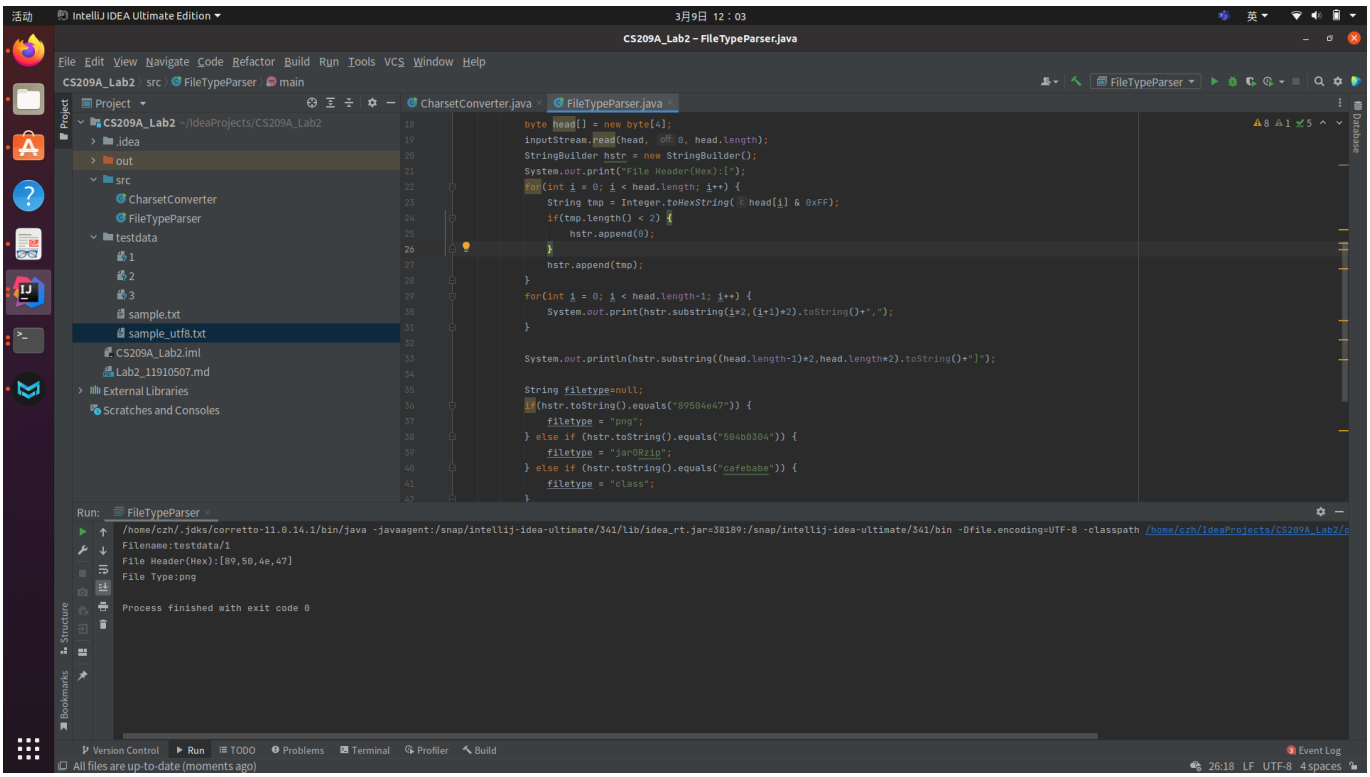
Code

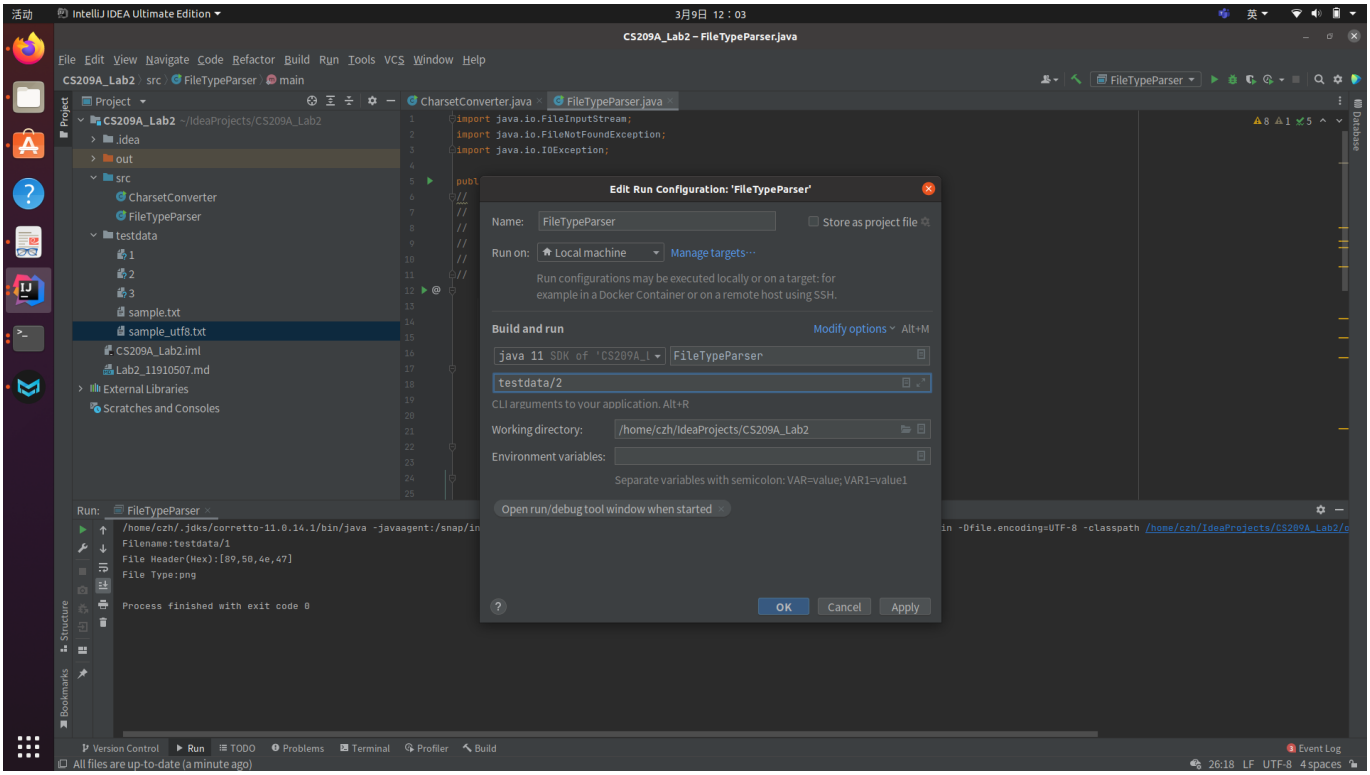
```java
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.IOException;

public class FileTypeParser {

    public static void main(String[] args) {
        String fi = args[0];
        System.out.println("Filename:"+fi);
        try(
                FileInputStream inputStream = new FileInputStream(fi);
                ) {
            byte head[] = new byte[4];
            //Get the first 4 bytes of the file head as file header
            inputStream.read(head, 0, head.length);
            StringBuilder hstr = new StringBuilder();
            System.out.print("File Header(Hex):[");

            //byte to HexString for comparing the head
            for(int i = 0; i < head.length; i++) {
                String tmp = Integer.toHexString(head[i] & 0xFF);
                if(tmp.length() < 2) {
                    hstr.append(0);
                }
                hstr.append(tmp);
            }
            for(int i = 0; i < head.length-1; i++) {
                System.out.print(hstr.substring(i*2,(i+1)*2).toString()+",");
            }

            System.out.println(hstr.substring((head.length-1)*2,head.length*2).toString()+"]");

            //Get File Type
            String filetype=null;
            if(hstr.toString().equals("89504e47")) {
                filetype = "png";
            } else if (hstr.toString().equals("504b0304")) {
                filetype = "jarORzip";
            } else if (hstr.toString().equals("cafebabe")) {
                filetype = "class";
            }
            System.out.println("File Type:"+filetype);

        } catch (FileNotFoundException e) {
            e.printStackTrace();
        } catch (IOException e) {
            e.printStackTrace();
```

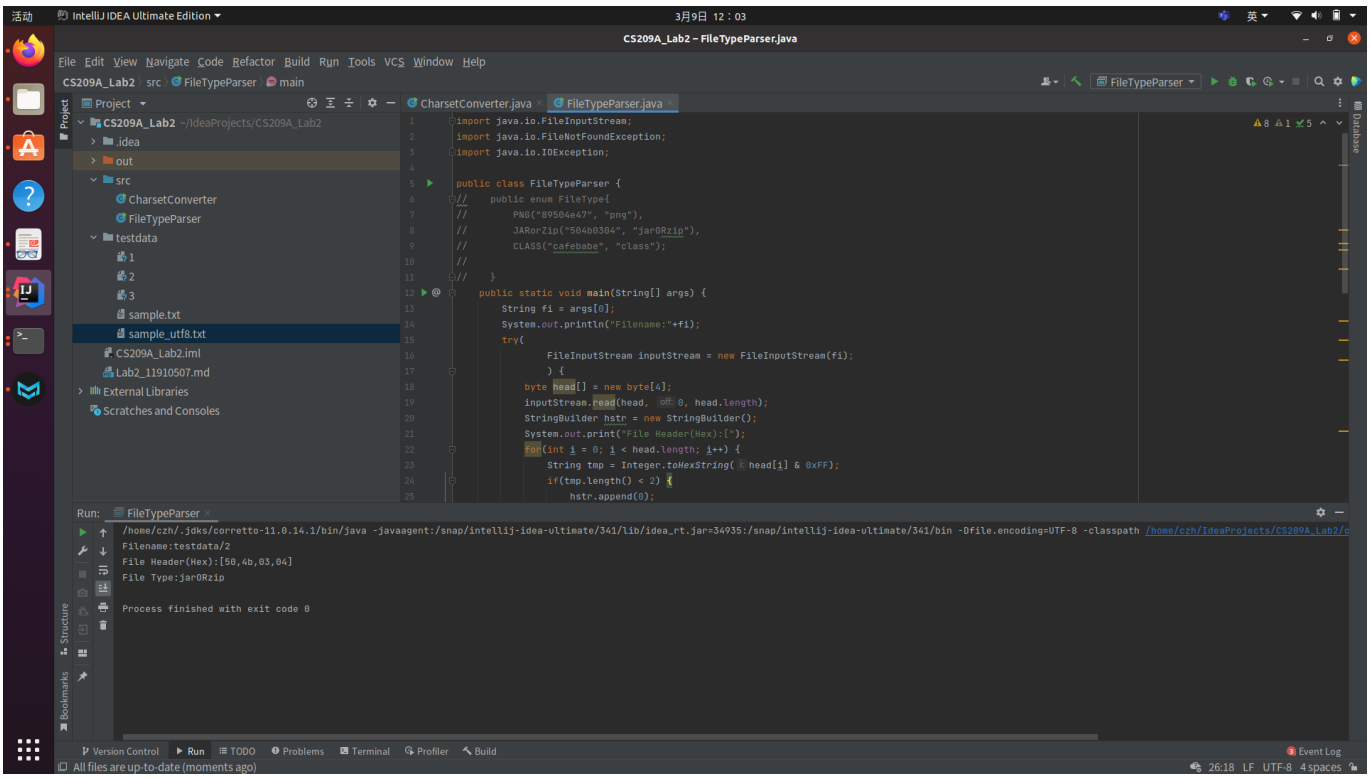
```
        }
    }
}
```

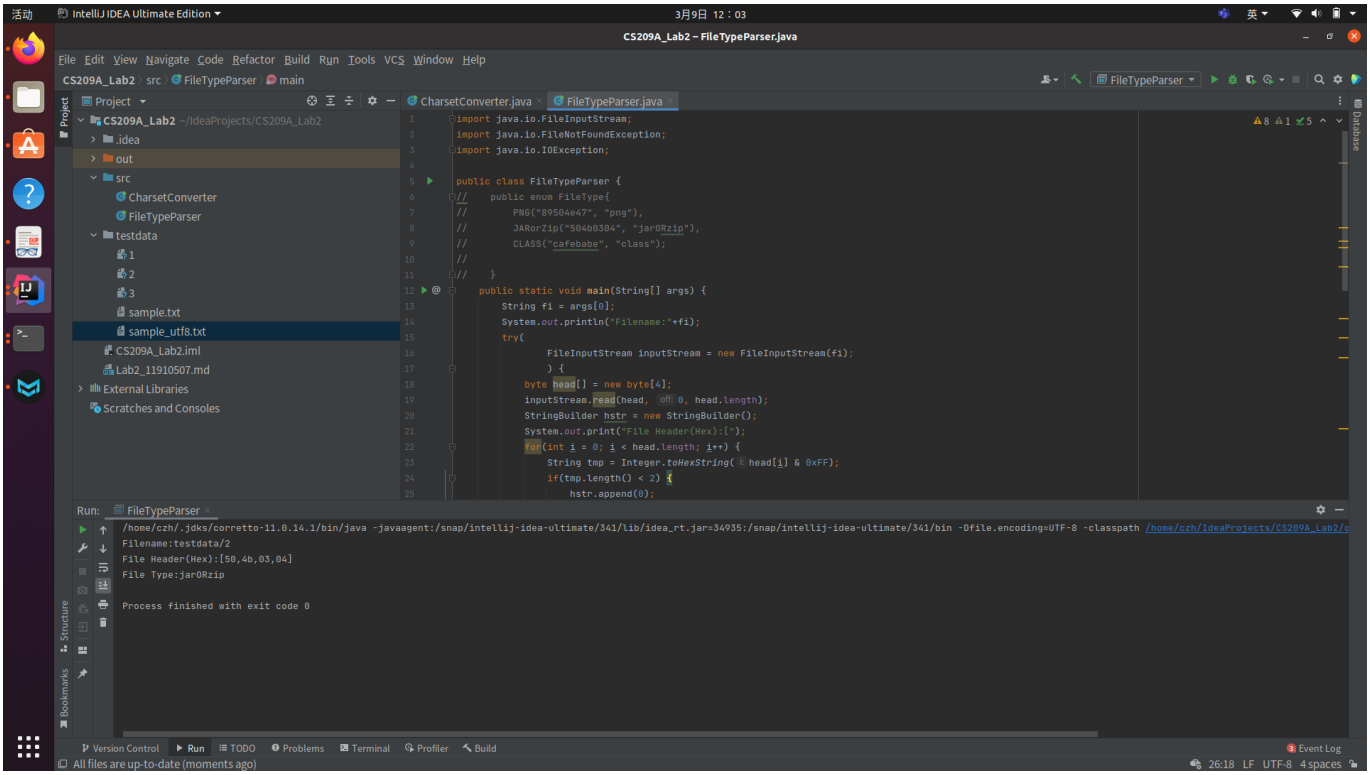
Result


IntelliJ IDEA Ultimate Edition
CS209A_Lab2 – FileTypeParser.java
Edit Run Configuration: 'FileTypeParser'
Name: FileTypeParser
Store as project file
Run on: Local machine
Manage targets...
Run configurations may be executed locally or on a target: for example in a Docker Container or on a remote host using SSH.
Build and run
Modify options Alt+M
java 11 SDK of 'CS209A_L
FileTypeParser
testdata/1
Press Alt for field hints
Working directory: /home/czh/IdeaProjects/CS209A_Lab2
Environment variables:
Separate variables with semicolon: VAR=value; VAR1=value1
Open run/debug tool window when started
OK
Close
Apply


IntelliJ IDEA Ultimate Edition
CS209A_Lab2 – FileTypeParser.java
Run: FileTypeParser
/home/czh/.jdks/corretto-11.0.14.1/bin/java -javaagent:/snap/intellij-idea-ultimate/341/lib/idea_rt.jar=38189:/snap/intellij-idea-ultimate/341/bin -Dfile.encoding=UTF-8 -classpath /home/czh/IdeaProjects/CS209A_Lab2/o
Filename:testdata/1
File Header(Hex):[89,50,4e,47]
File Type:png
Process finished with exit code 0


CS209A_Lab2 – FileTypeParser.java
Edit Run Configuration: 'FileTypeParser'
Name: FileTypeParser
Store as project file
Run on: Local machine
Manage targets…
Run configurations may be executed locally or on a target: for example in a Docker Container or on a remote host using SSH.
Build and run
Modify options Alt+M
java 11 SDK of 'CS209A_L
FileTypeParser
testdata/2
CLI arguments to your application. Alt+R
Working directory: /home/czh/IdeaProjects/CS209A_Lab2
Environment variables:
Separate variables with semicolon: VAR=value; VAR1=value1
Open run/debug tool window when started
OK
Cancel
Apply
Filename:testdata/1
File Header(Hex):[89,50,4e,47]
File Type:png
Process finished with exit code 0


CS209A_Lab2 – FileTypeParser.java
Filename:testdata/2
File Header(Hex):[50,4b,03,04]
File Type:jarORzip
Process finished with exit code 0


活动
IntelliJ IDEA Ultimate Edition
3月9日 12：03
英
CS209A_Lab2 – FileTypeParser.java
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help
CS209A_Lab2 › src › FileTypeParser › main
FileTypeParser
Project
CS209A_Lab2 ~/IdeaProjects/CS209A_Lab2
.idea
out
src
CharsetConverter
FileTypeParser
testdata
1
2
3
sample.txt
sample_utf8.txt
CS209A_Lab2.iml
Lab2_11910507.md
External Libraries
Scratches and Consoles
CharsetConverter.java
FileTypeParser.java
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.IOException;
public class FileTypeParser {
// public enum FileType{
// PNG("89504e47", "png"),
// JARorZip("504b0304", "jarORzip"),
// CLASS("cafebabe", "class");
//
// }
public static void main(String[] args) {
String fi = args[0];
System.out.println("Filename:"+fi);
try(
FileInputStream inputStream = new FileInputStream(fi);
) {
byte head[] = new byte[4];
inputStream.read(head, off: 0, head.length);
StringBuilder hstr = new StringBuilder();
System.out.print("File Header(Hex):[");
for(int i = 0; i < head.length; i++) {
String tmp = Integer.toHexString(i: head[i] & 0xFF);
if(tmp.length() < 2) {
hstr.append(0);
Run: FileTypeParser
/home/czh/.jdks/corretto-11.0.14.1/bin/java -javaagent:/snap/intellij-idea-ultimate/341/lib/idea_rt.jar=34935:/snap/intellij-idea-ultimate/341/bin -Dfile.encoding=UTF-8 -classpath /home/czh/IdeaProjects/CS209A_Lab2/o
Filename:testdata/2
File Header(Hex):[50,4b,03,04]
File Type:jarORzip
Process finished with exit code 0
Version Control
Run
TODO
Problems
Terminal
Profiler
Build
Event Log
All files are up-to-date (moments ago)
26:18 LF UTF-8 4 spaces