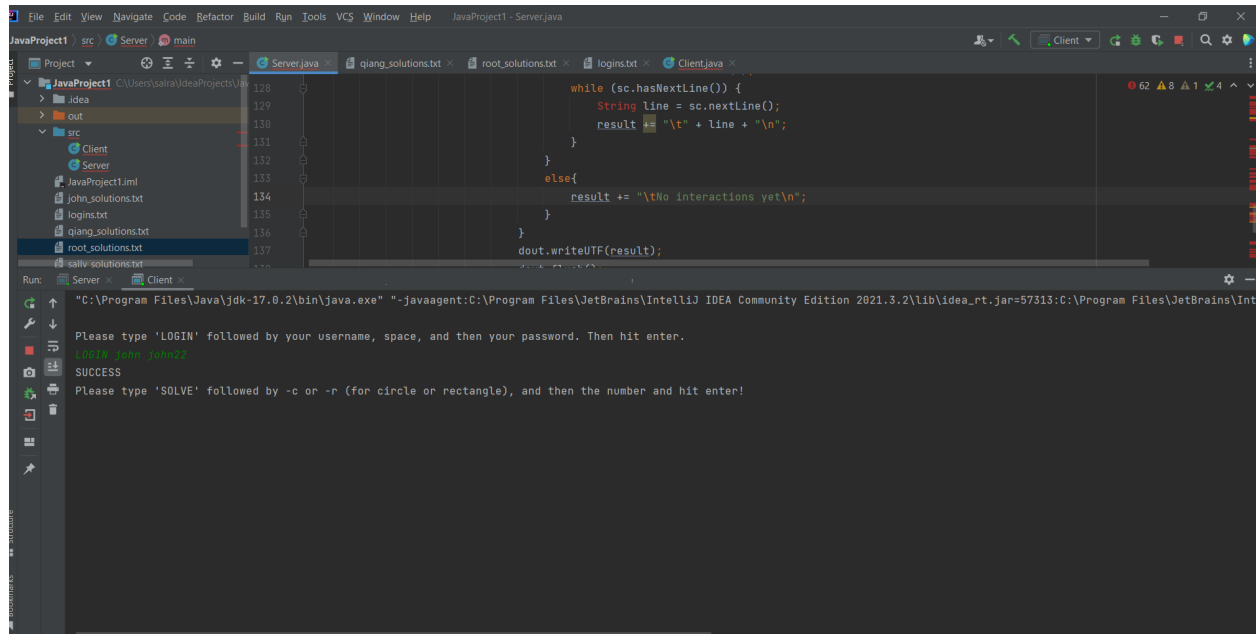


## OUTPUTS:

### LOGIN:

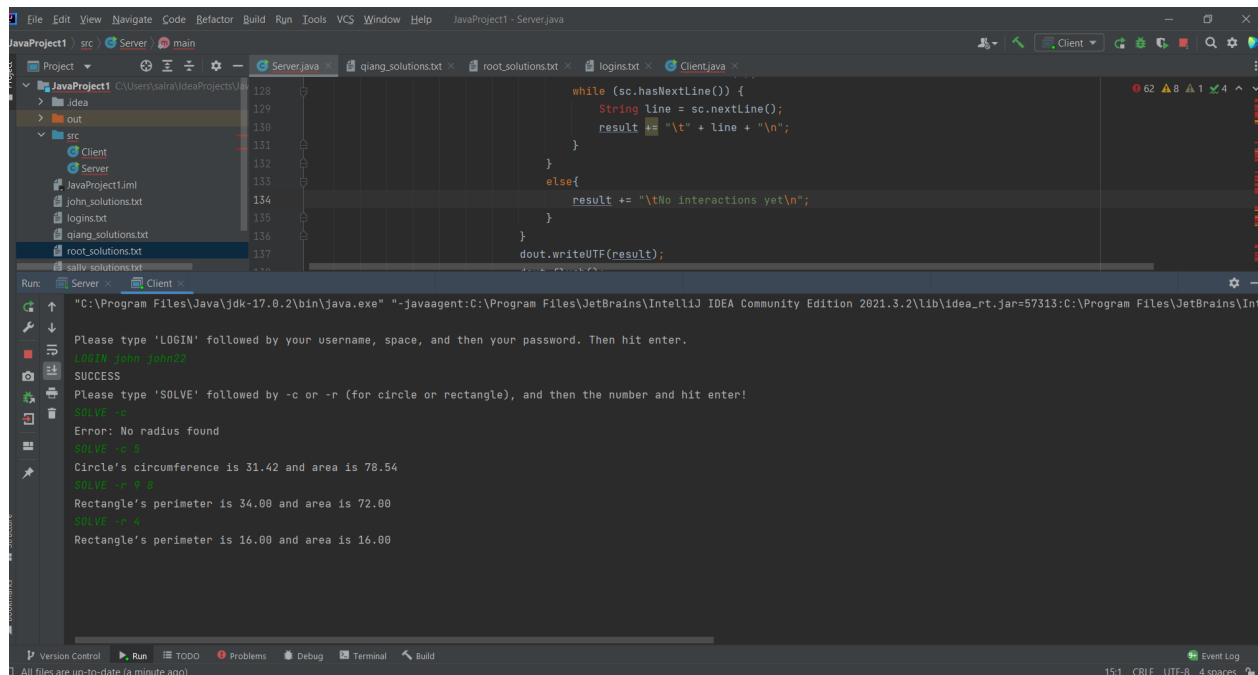


The screenshot shows the IntelliJ IDEA interface with the 'Server.java' file open. The 'Run' console at the bottom displays the following output:

```
"C:\Program Files\Java\jdk-17.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\lib\idea_rt.jar=57313:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\bin" -Didea.config.path=C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\conf -Didea.copyright.path=C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\copyright -Didea.home.path=C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\bin -Didea.platform.prefix=java -Didea.vendor.id=idea -Djava.awt.headless=true -Djava.class.path=C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\bin\idea_rt.jar -jar C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\bin\idea_rt.jar 57313

Please type 'LOGIN' followed by your username, space, and then your password. Then hit enter.
LOGIN: John 123456
SUCCESS
Please type 'SOLVE' followed by -c or -r (for circle or rectangle), and then the number and hit enter!
```

### SOLVE:

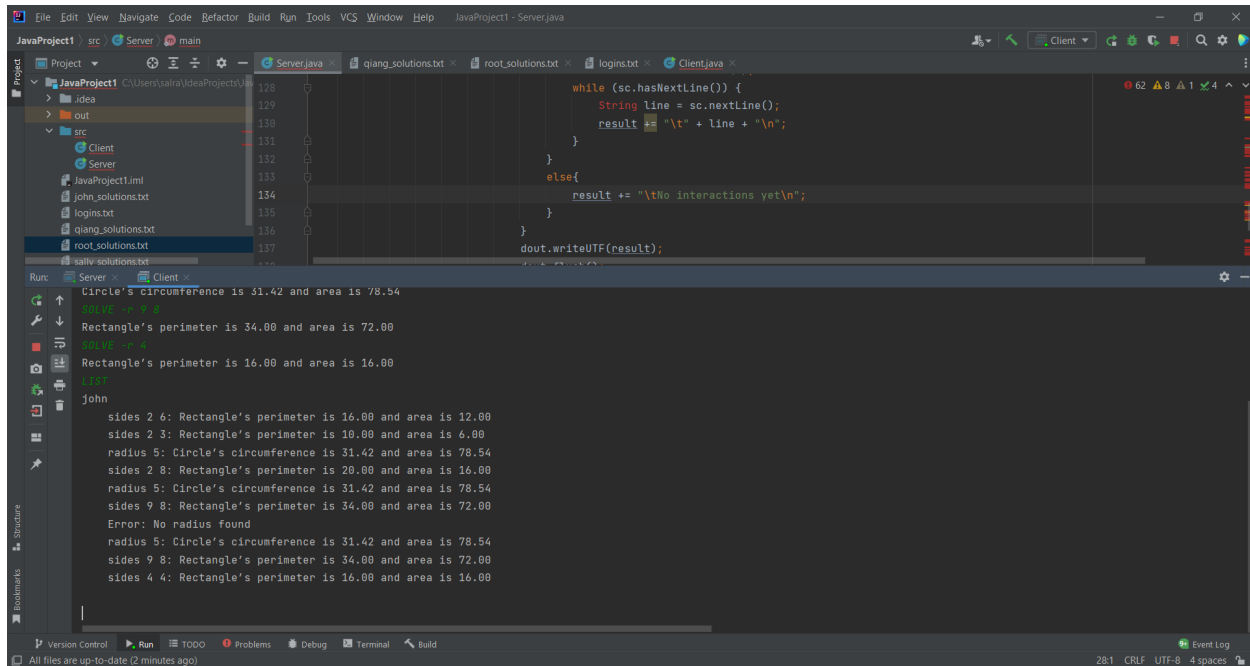


The screenshot shows the IntelliJ IDEA interface with the 'Server.java' file open. The 'Run' console at the bottom displays the following output:

```
"C:\Program Files\Java\jdk-17.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\lib\idea_rt.jar=57313:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\bin" -Didea.config.path=C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\conf -Didea.copyright.path=C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\copyright -Didea.home.path=C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\bin -Didea.platform.prefix=java -Didea.vendor.id=idea -Djava.awt.headless=true -Djava.class.path=C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\bin\idea_rt.jar -jar C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.3.2\bin\idea_rt.jar 57313

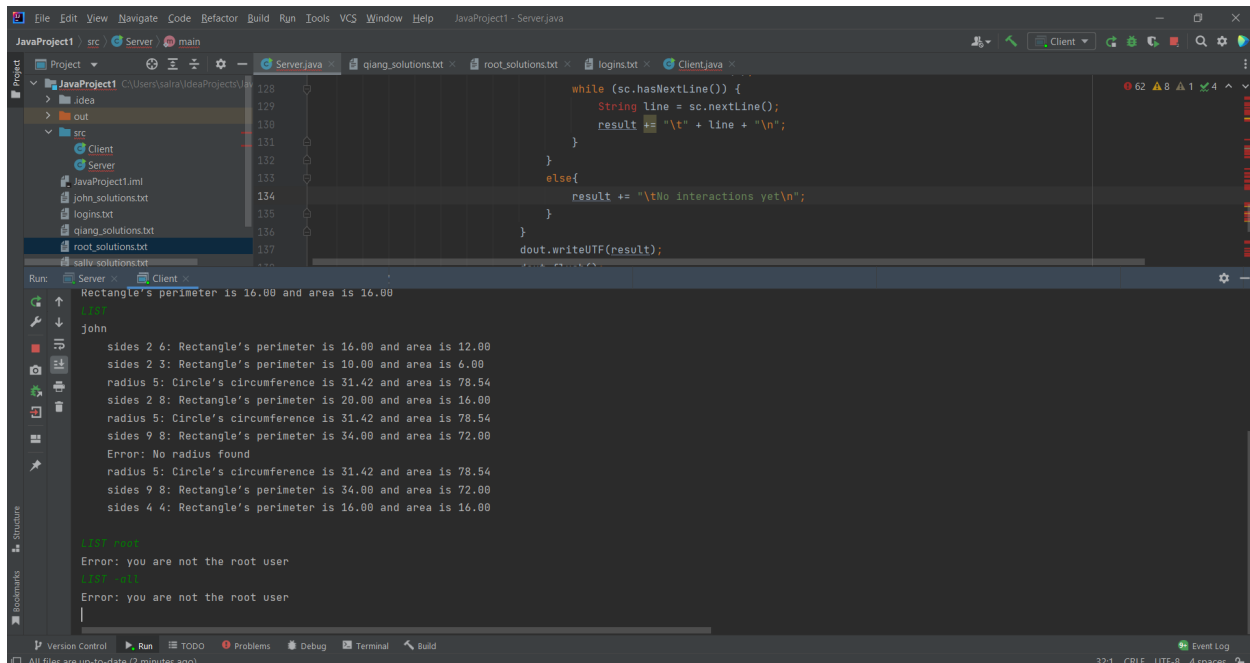
Please type 'LOGIN' followed by your username, space, and then your password. Then hit enter.
LOGIN: John 123456
SUCCESS
Please type 'SOLVE' followed by -c or -r (for circle or rectangle), and then the number and hit enter!
SOLVE: -c 5
Error: No radius found
SOLVE: -r 5
Circle's circumference is 31.42 and area is 78.54
SOLVE: -c 4
Rectangle's perimeter is 34.00 and area is 72.00
SOLVE: -r 4
Rectangle's perimeter is 16.00 and area is 16.00
```

LIST:



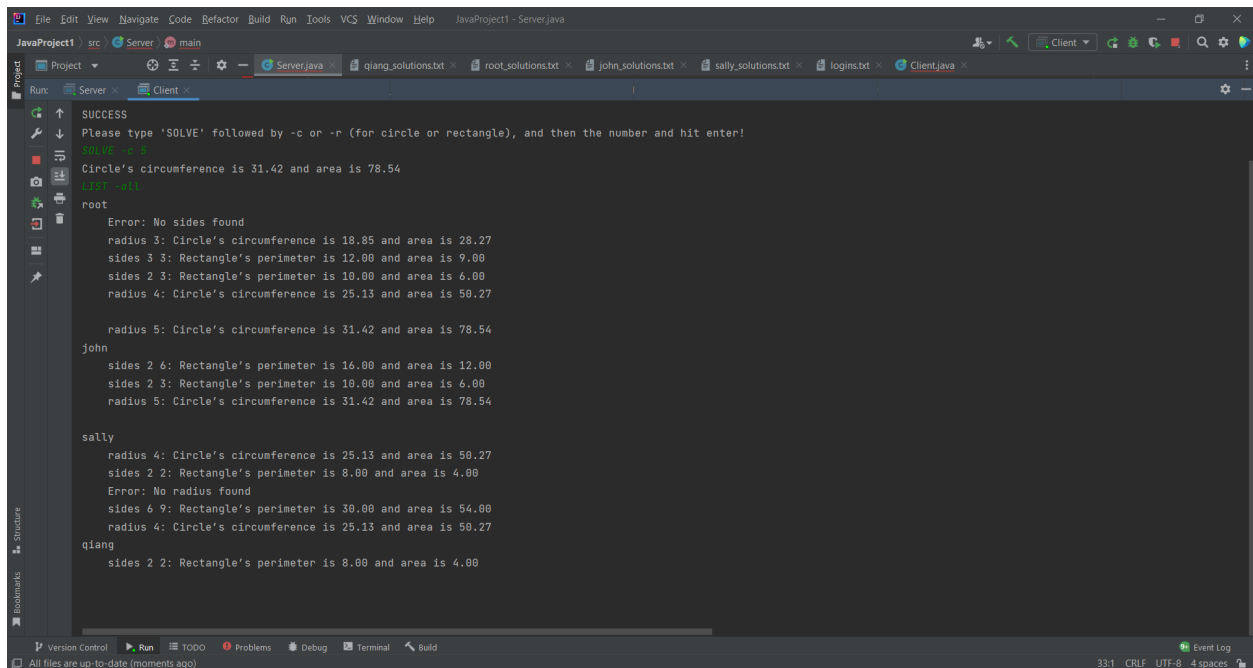
```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help JavaProject1 - Server.java
JavaProject1 | src | Server | main
Project
  JavaProject1
    C:\Users\saira\IdeaProjects\JavaProject1
    .idea
    out
    src
      Client
      Server
    JavaProject1.iml
    john_solutions.txt
    logins.txt
    qiang_solutions.txt
    root_solutions.txt
    saivv_solutions.txt
Run: Server | Client
  Circle's circumference is 31.42 and area is 78.54
  Rectangle's perimeter is 34.00 and area is 72.00
  Rectangle's perimeter is 16.00 and area is 16.00
  john
    sides 2 6: Rectangle's perimeter is 16.00 and area is 12.00
    sides 2 3: Rectangle's perimeter is 10.00 and area is 6.00
    radius 5: Circle's circumference is 31.42 and area is 78.54
    sides 2 8: Rectangle's perimeter is 20.00 and area is 16.00
    radius 5: Circle's circumference is 31.42 and area is 78.54
    sides 9 8: Rectangle's perimeter is 34.00 and area is 72.00
    Error: No radius found
    radius 5: Circle's circumference is 31.42 and area is 78.54
    sides 9 8: Rectangle's perimeter is 34.00 and area is 72.00
    sides 4 4: Rectangle's perimeter is 16.00 and area is 16.00
Version Control Run TODO Problems Debug Terminal Build
All files are up-to-date (2 minutes ago) 281 CRLF UTF-8 4 spaces
```

LIST: (Not root user)



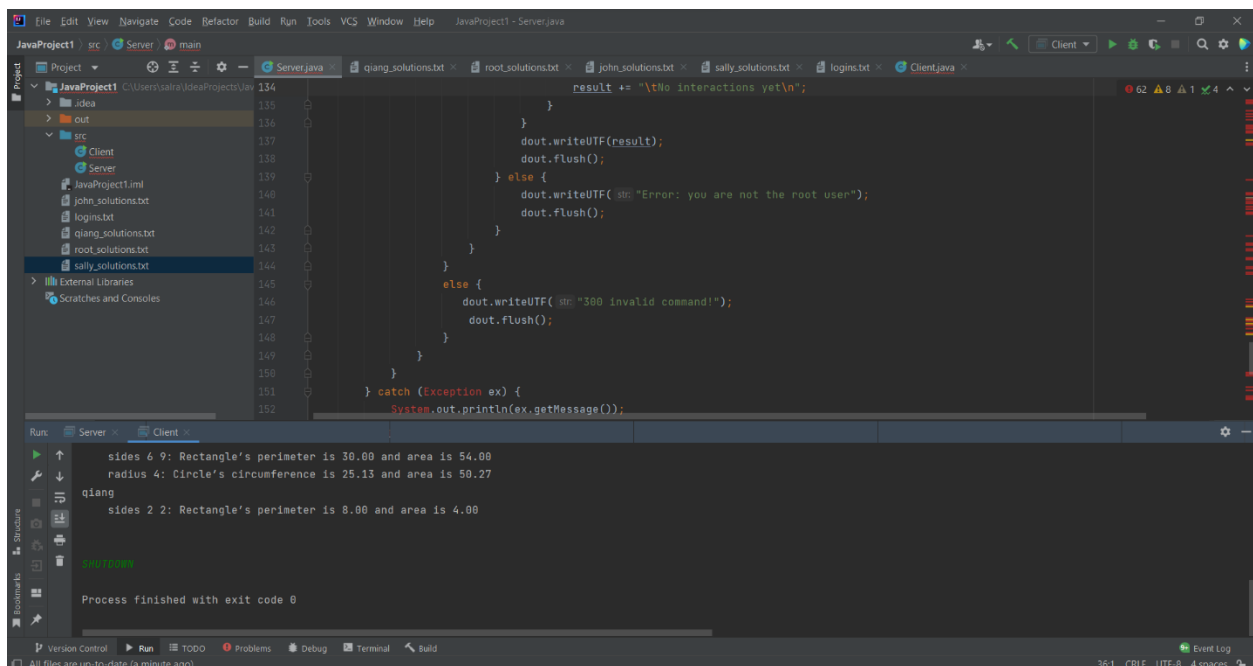
```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help JavaProject1 - Server.java
JavaProject1 | src | Server | main
Project
  JavaProject1
    C:\Users\saira\IdeaProjects\JavaProject1
    .idea
    out
    src
      Client
      Server
    JavaProject1.iml
    john_solutions.txt
    logins.txt
    qiang_solutions.txt
    root_solutions.txt
    saivv_solutions.txt
Run: Server | Client
  Rectangle's perimeter is 16.00 and area is 16.00
  john
    sides 2 6: Rectangle's perimeter is 16.00 and area is 12.00
    sides 2 3: Rectangle's perimeter is 10.00 and area is 6.00
    radius 5: Circle's circumference is 31.42 and area is 78.54
    sides 2 8: Rectangle's perimeter is 20.00 and area is 16.00
    radius 5: Circle's circumference is 31.42 and area is 78.54
    sides 9 8: Rectangle's perimeter is 34.00 and area is 72.00
    Error: No radius found
    radius 5: Circle's circumference is 31.42 and area is 78.54
    sides 9 8: Rectangle's perimeter is 34.00 and area is 72.00
    sides 4 4: Rectangle's perimeter is 16.00 and area is 16.00
    Error: you are not the root user
    Error: you are not the root user
Version Control Run TODO Problems Debug Terminal Build
All files are up-to-date (2 minutes ago) 32:1 CRLF UTF-8 4 spaces
```

LIST: (-all)



```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help JavaProject1 - Server.java
JavaProject1 | src | Server | main
Project | Run | Server | Client
Run: Server | Client
SUCCESS
Please type 'SOLVE' followed by -c or -r (for circle or rectangle), and then the number and hit enter!
root
Circle's circumference is 31.42 and area is 78.54
LIST -all
Error: No sides found
radius 3: Circle's circumference is 18.85 and area is 28.27
sides 3 3: Rectangle's perimeter is 12.00 and area is 9.00
sides 2 3: Rectangle's perimeter is 10.00 and area is 6.00
radius 4: Circle's circumference is 25.13 and area is 50.27
radius 5: Circle's circumference is 31.42 and area is 78.54
john
sides 2 6: Rectangle's perimeter is 16.00 and area is 12.00
sides 2 3: Rectangle's perimeter is 10.00 and area is 6.00
radius 5: Circle's circumference is 31.42 and area is 78.54
sally
radius 4: Circle's circumference is 25.13 and area is 50.27
sides 2 2: Rectangle's perimeter is 8.00 and area is 4.00
Error: No radius found
sides 6 9: Rectangle's perimeter is 30.00 and area is 54.00
radius 4: Circle's circumference is 25.13 and area is 50.27
qiang
sides 2 2: Rectangle's perimeter is 8.00 and area is 4.00
Version Control | Run | TODO | Problems | Debug | Terminal | Build
All files are up-to-date (moments ago) 33:1 CRLF UTF-8 4 spaces
```

SHUTDOWN:



```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help JavaProject1 - Server.java
JavaProject1 | src | Server | main
Project | Run | Server | Client
Run: Server | Client
result += "\tNo interactions yet!\n";
}
}
dout.writeUTF(result);
dout.flush();
} else {
dout.writeUTF( sio:"Error: you are not the root user");
dout.flush();
}
}
} else {
dout.writeUTF( sio:"300 invalid command!");
dout.flush();
}
}
} catch (Exception ex) {
System.out.println(ex.getMessage());
}
sides 6 9: Rectangle's perimeter is 30.00 and area is 54.00
radius 4: Circle's circumference is 25.13 and area is 50.27
qiang
sides 2 2: Rectangle's perimeter is 8.00 and area is 4.00
SHUTDOWN
Process finished with exit code 0
Version Control | Run | TODO | Problems | Debug | Terminal | Build
All files are up-to-date (a minute ago) 36:1 CRLF UTF-8 4 spaces
```

LOGOUT:

The screenshot shows the IntelliJ IDEA IDE with a Java project named 'JavaProject1'. The project structure includes a 'src' directory with 'Client' and 'Server' classes, and a 'run' directory with 'Client.java'. The 'Client.java' file is open in the editor, showing a while loop that reads input from the user and calculates the perimeter and area of a rectangle or circle. The Run window at the bottom shows the output of the application, including calculations for rectangles and circles, and error messages for invalid input.

**Client.java**

```

128 while (sc.hasNextLine()) {
129     String line = sc.nextLine();
130     result += "\t" + line + "\n";
131 }
132 }
133 else{
134     result += "\tNo interactions yet!\n";
135 }
136 }
137 dout.writeUTF(result);
138 }

```

**Run Window**

```

sides 2 6: Rectangle's perimeter is 16.00 and area is 12.00
sides 2 3: Rectangle's perimeter is 10.00 and area is 6.00
radius 5: Circle's circumference is 31.42 and area is 78.54
sides 2 8: Rectangle's perimeter is 20.00 and area is 16.00
radius 5: Circle's circumference is 31.42 and area is 78.54
sides 9 8: Rectangle's perimeter is 34.00 and area is 72.00
Error: No radius found
radius 5: Circle's circumference is 31.42 and area is 78.54
sides 9 8: Rectangle's perimeter is 34.00 and area is 72.00
sides 4 4: Rectangle's perimeter is 16.00 and area is 16.00

1237 read
Error: you are not the root user
1238 read
Error: you are not the root user
1239 read
Process finished with exit code 0

```