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Classification Company Confidentiality

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Assignment – Software Engineering

1.1 Your task

Your task is to create a Java (Swing or SWT) application that in real-time visualize objects on a map. The included SAAB.jar is a server application that provides the objects using a TCP/IP connection.

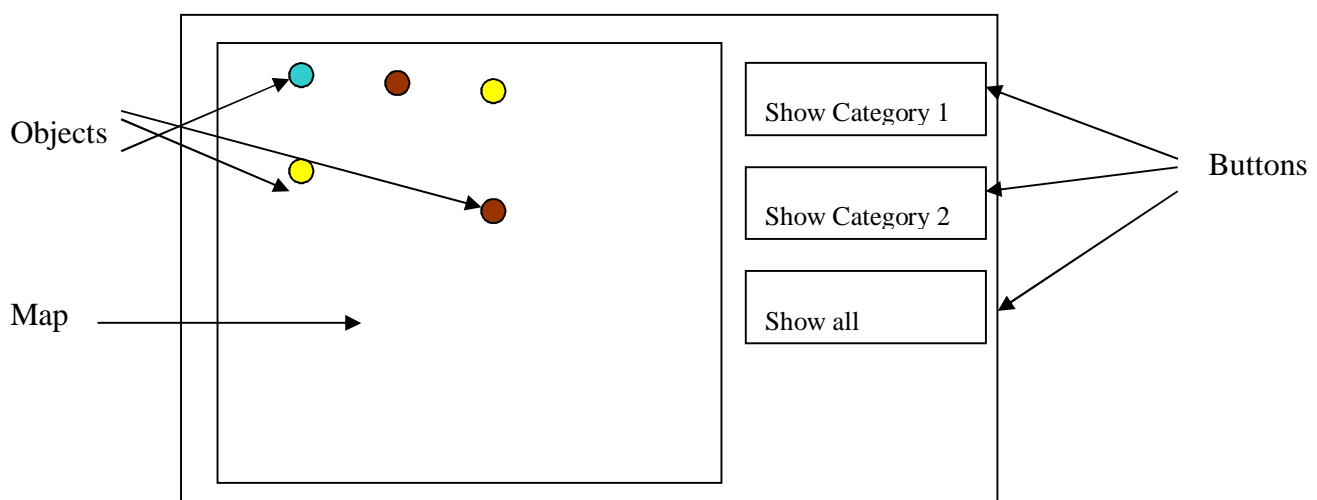
The objects have different types (1-3), where type 1 and type 2 are of the same category and type 3 belonging to the second category. In the graphical interface, it should be possible to select the category of items to be displayed. The objects positions are updated over time and the application shall automatically update the objects positions on the map.

A map drawing is provided along with the server application.

Requirements:

- Implement using Java and SWT or Swing
- Use maven or javac to compile your code
- Provide documentation on how to compile and run your code from the command line
- The object position shall automatically be updated in real-time
- The map picture shall be visible in the GUI
- It shall be possible to select visible category (1, 2 or all)
- The application shall log errors on stdout
- In the GUI it shall be possible to identify which type an object has

Example:





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1.2 Server application

The software package sent to you contains a server application that via TCP / IP delivers data in text format. The server application is configured to communicate on port 5463.

1.2.1 Configuration and start of the server

The server application configuration file looks like this:

```
SERVERPORT=5463          # Default server port
MAP=map.gif              # Path to map
```

To start the server from the command prompt:

```
java -classpath SAAB.jar com.saabtech.server.SAABServer
```

1.2.2 Data specification

Data delivered from the server looks like:

```
ID=<LONG>;X=<INT>;Y=<INT>;TYPE=<INT>
```

The table below describes the data fields in detail.

Field	Type	Example data	Description
ID	LONG	2691882127991893	ID-number on the object
X	INT	119	X-coordinate for the object
Y	INT	227	Y-coordinate for the object
TYPE	INT	2	Typ-id for the object

Example 1:

```
ID=2691882127991893;X=250;Y=150;TYPE=3
```

Example 2 – Two object with the same category:

```
ID=2691882127234543;X=199;Y=230;TYPE=1
```

```
ID=2691882127221587;X=229;Y=310;TYPE=2
```

1.2.3 Code example

The following code sample can be used to read data from the server application:



SAAB

3 (3)

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...

```
BufferedReader in = null;
```

```
Socket s = new Socket("localhost", 5463);
```

```
in = new BufferedReader(new InputStreamReader(s.getInputStream()));
```

...

```
String inData;
```

```
while ((inData = in.readLine()) != null) {
```

```
    System.out.println(inData);
```

```
}
```