

North South University



Assignment-II

Topic: Multithreading

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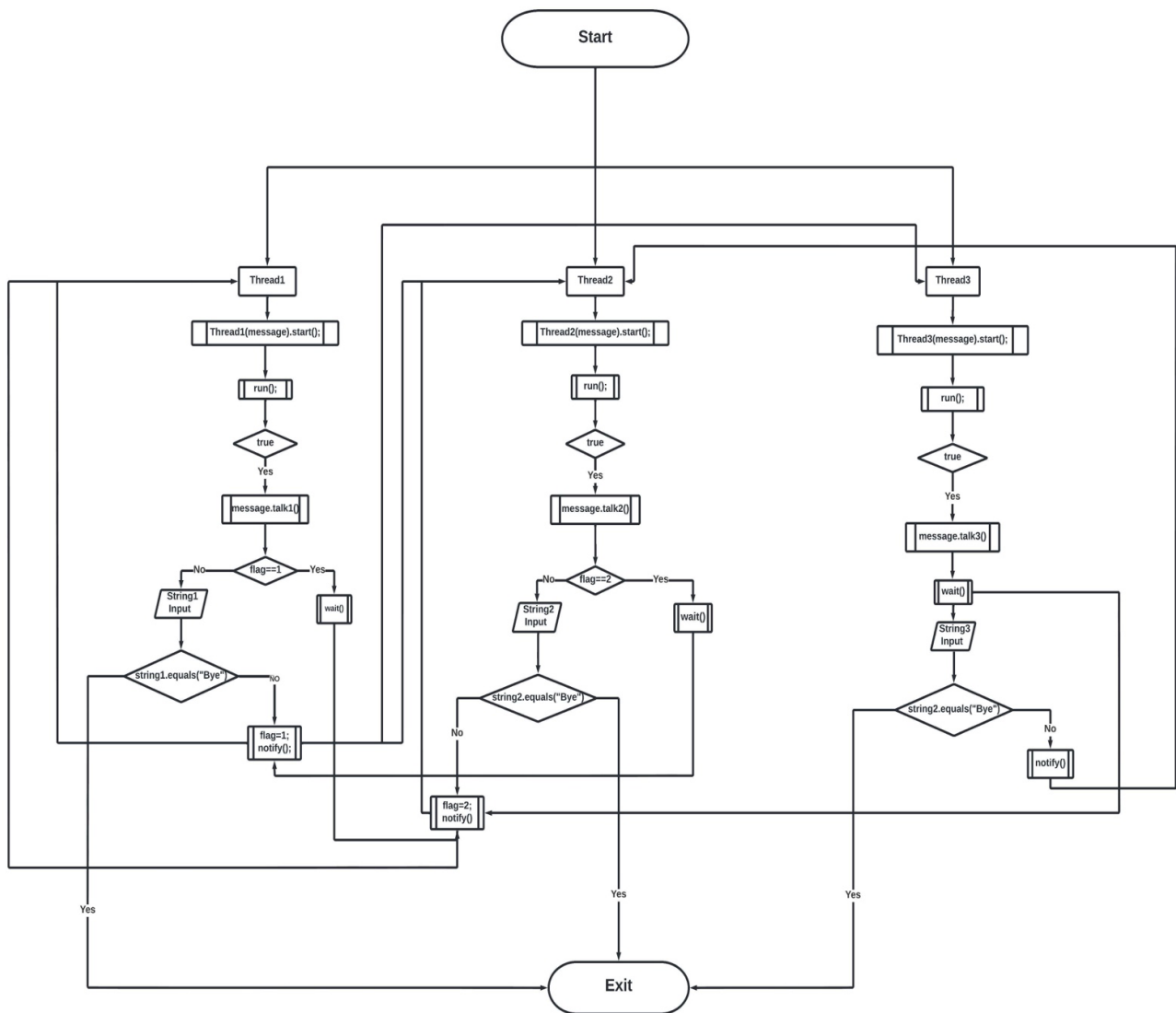
Semester: Summer 2022

Course: CSE 215

Section: 08

Faculty: Prof. Dr. Mohammad Abu Yousuf

Flowchart:



Source Code:

```
package javachatsystem;
import java.util.Scanner;
```

```
class Chat {
    Scanner sc1= new Scanner(System.in);
    Scanner sc2= new Scanner(System.in);
    Scanner sc3= new Scanner(System.in);
    String string1, string2, string3;
```

```
int flag=0;
```

```
public synchronized void talk1() throws InterruptedException {  
    if(flag==1) {  
        wait();  
    }
```

```
    System.out.print("Nabid :");  
    string1 = sc1.nextLine();
```

```
    if(string1.equals("Bye")) {
```

```
        System.out.println("\n Nabid has left from the conversation");  
        System.out.println("\tGroup discussion has ended.");
```

```
        System.exit(0);  
    }
```

```
    flag=1;  
    notify();  
}
```

```
public synchronized void talk2() throws InterruptedException {
```

```
    if(flag==2) {  
        wait();  
    }
```

```
    System.out.print("Maria :");  
    string2 = sc2.nextLine();
```

```
    if( string2.equals("Bye")) {
```

```
        System.out.println("\n Maria has left from the conversation.");  
        System.out.println("\tGroup discussion has ended.");  
        System.exit(0);
```

```
    }
```

```
    flag=2;
```

```
    notify();  
}
```

```
public synchronized void talk3() throws InterruptedException {
```

```
    wait();
```

```
    System.out.print("Arjun :");  
    string3 = sc3.nextLine();
```

```
    if(string3.equals("Bye")) {
```

```
        System.out.println("\n Arjun has left from the conversation.");  
        System.out.println("\tGroup Discussion has ended.");  
        System.exit(0);
```

```
    }
```

```
    notify();
```

```
}
```

```
}
```

```
class Thread1 extends Thread {  
    Chat message;
```

```
    public Thread1(Chat message) {  
        this.message=message;
```

```
    }
```

```
    public void run() {
```

```
        try {  
            while(true) {
```

```
                message.talk1();
```

```
            }
```

```
        } catch(InterruptedException e) {  
            e.printStackTrace();
```

```
    }
```

```
}  
}
```

```
class Thread2 extends Thread {  
    Chat message;  
  
    public Thread2(Chat message) {  
        this.message=message;  
    }  
  
    public void run() {  
        try {  
            while(true) {  
                message.talk2();  
            }  
        } catch (InterruptedException e) {  
            e.printStackTrace();  
        }  
    }  
}
```

```
class Thread3 extends Thread {  
    Chat message;  
  
    public Thread3(Chat message) {  
        this.message=message;  
    }  
  
    public void run() {  
        try {  
            while(true) {  
                message.talk3();  
            }  
        } catch ( InterruptedException e) {  
            e.printStackTrace();  
        }  
    }  
}
```

```

public class JavaChatSystem {

    public static void main(String[] args) {
        System.out.println("\t\t\t\t\tGroup Discussion ");
        System.out.println("\t\t\t\t\tMembers: Nabid, Maria, Arjun\n");

        Chat message = new Chat();

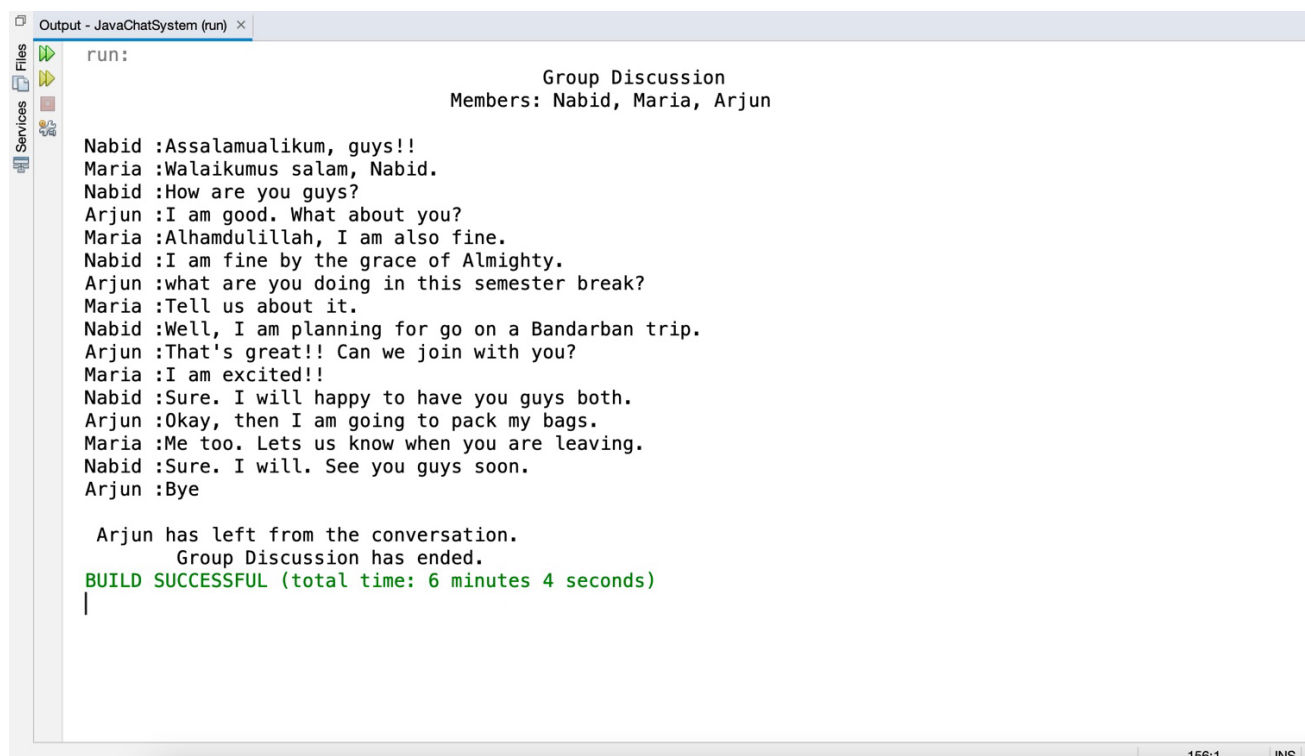
        new Thread1(message).start();
        new Thread2(message).start();
        new Thread3(message).start();

    }

}

```

Screenshot:



```

Output - JavaChatSystem (run) x
run:
                                Group Discussion
                                Members: Nabid, Maria, Arjun

Nabid :Assalamualikum, guys!!
Maria :Walaikumus salam, Nabid.
Nabid :How are you guys?
Arjun :I am good. What about you?
Maria :Alhamdulillah, I am also fine.
Nabid :I am fine by the grace of Almighty.
Arjun :what are you doing in this semester break?
Maria :Tell us about it.
Nabid :Well, I am planning for go on a Bandarban trip.
Arjun :That's great!! Can we join with you?
Maria :I am excited!!
Nabid :Sure. I will happy to have you guys both.
Arjun :Okay, then I am going to pack my bags.
Maria :Me too. Lets us know when you are leaving.
Nabid :Sure. I will. See you guys soon.
Arjun :Bye

Arjun has left from the conversation.
Group Discussion has ended.
BUILD SUCCESSFUL (total time: 6 minutes 4 seconds)
|

```

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