

YEAH SESSION #7

FacePamphlet

November 29, 2018

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YEAH Hours Schedule

Topic	Date	Time	Location
Assignment 7	Today!	Now!	Here!

Then...

YEAH Hours Schedule

Topic	Date	Time	Location
Assignment 7	Today!	Now!	Here!

Then...



Conceptual Overview: Data Structures

ArrayLists

- Can call methods on them (such as contains, add, remove, isEmpty, etc.)
- Resizable
- Can only store objects (need “wrapper classes” for primitives such as Integer, Character, etc.)

HashMaps

- Stores data in **key-value pairs** (keys must be unique but values can be duplicates)
- Can call methods on them (such as put, remove, containsKey, etc.)
- Resizable
- Can only store objects (need “wrapper classes” for primitives such as Integer, Character, etc.)

When do I use these data structures?

ArrayLists

when you have an ordered list with a non-fixed size

HashMaps

when order does not matter

when you want to look up data using a unique key rather than an index

Conceptual Overview: Getter and Setter Methods

Getters & Setters for a Student Object

- **Private** instance variables
 - Can get & set their values in **the same class**
- **Public** getter and setter methods
 - Can get & set their values in **other classes**

```
public class Student {  
  
    public Student(int unitCount) {  
        numUnits = unitCount;  
    }  
  
    public int getUnits() {  
        return numUnits;  
    }  
  
    public void setUnits(int newUnits) {  
        numUnits = newUnits;  
    }  
  
    private int numUnits;  
  
}
```

Now let's get into FacePamphlet!

FacePamphlet Logistics

- Deadline: Friday, December 7
- NO LATE DAYS OR LATE SUBMISSIONS!

FacePamphlet Logistics

- Deadline: Friday, December 7
- NO LATE DAYS OR LATE SUBMISSIONS!
- You will get practice with:
 - Data structures for social networks
 - Interactors
 - Graphics
 - Iterators
 - And more!

What is a
FacePamphlet Social Network?

Brahm



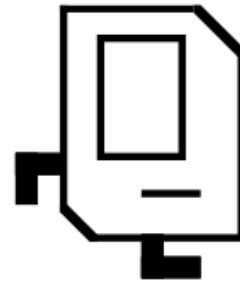
Status

Mehran



Status

Karel



Status

Brahm



Status

Friends

Mehran



Status

Karel



Status

Brahm



Status

Friends

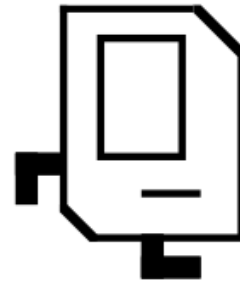
Mehran



Status

Friends

Karel



Status

What can your awesome social network do?

Add a profile



FacePamphlet

Name

Add

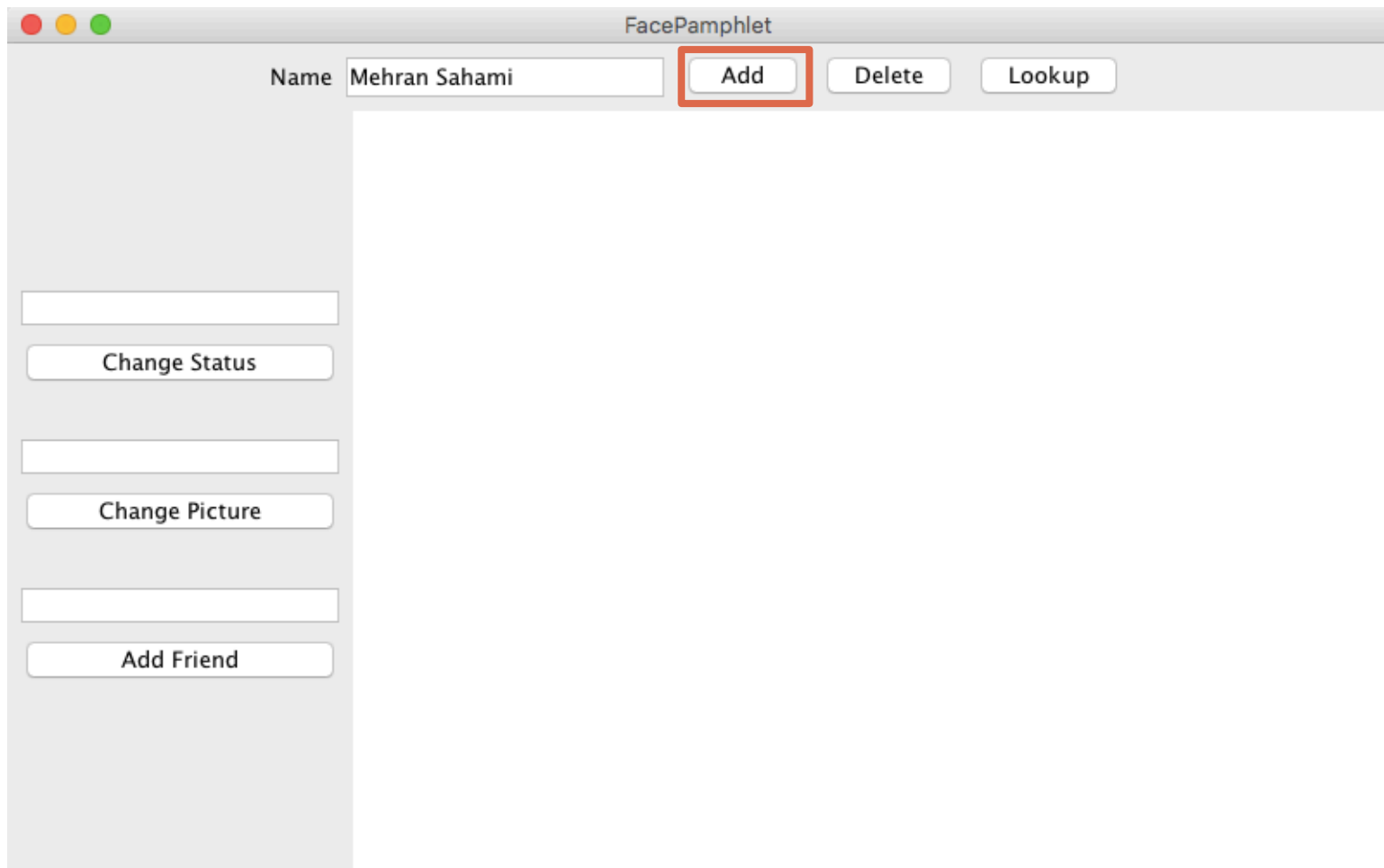
Delete

Lookup

Change Status

Change Picture

Add Friend



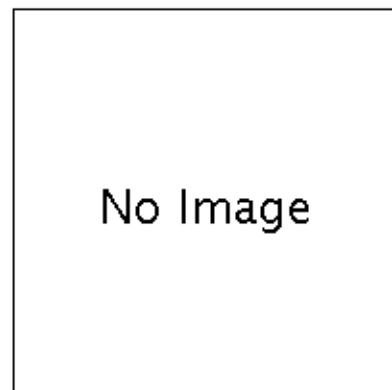


FacePamphlet

Name

Mehran Sahami

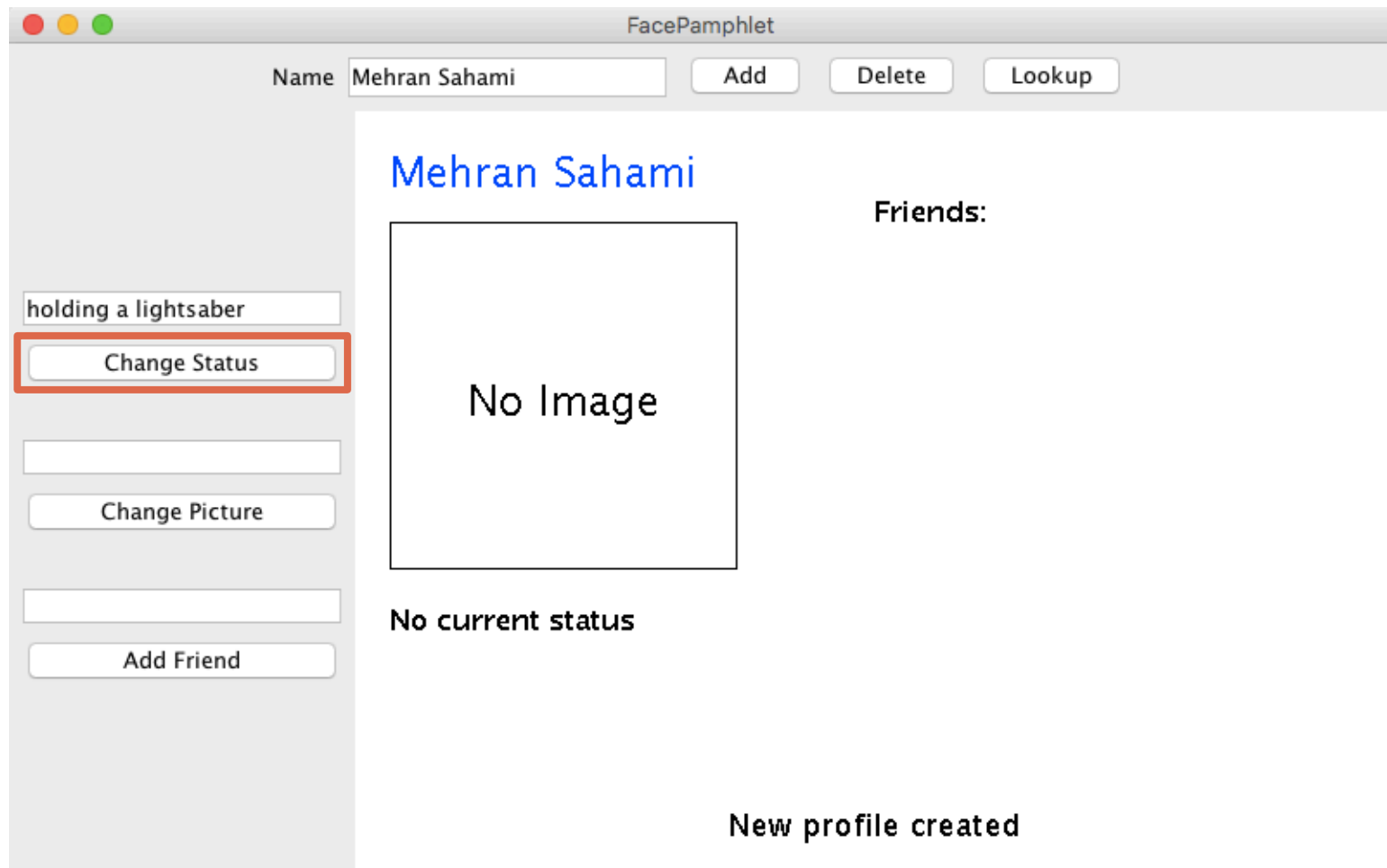
Friends:



No current status

New profile created

Change status



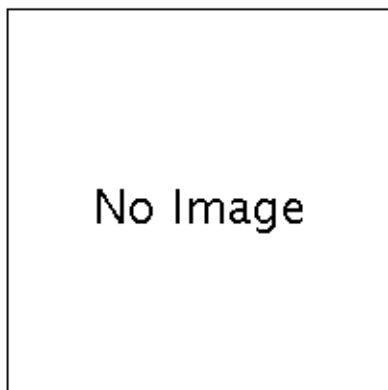


FacePamphlet

Name

Mehran Sahami

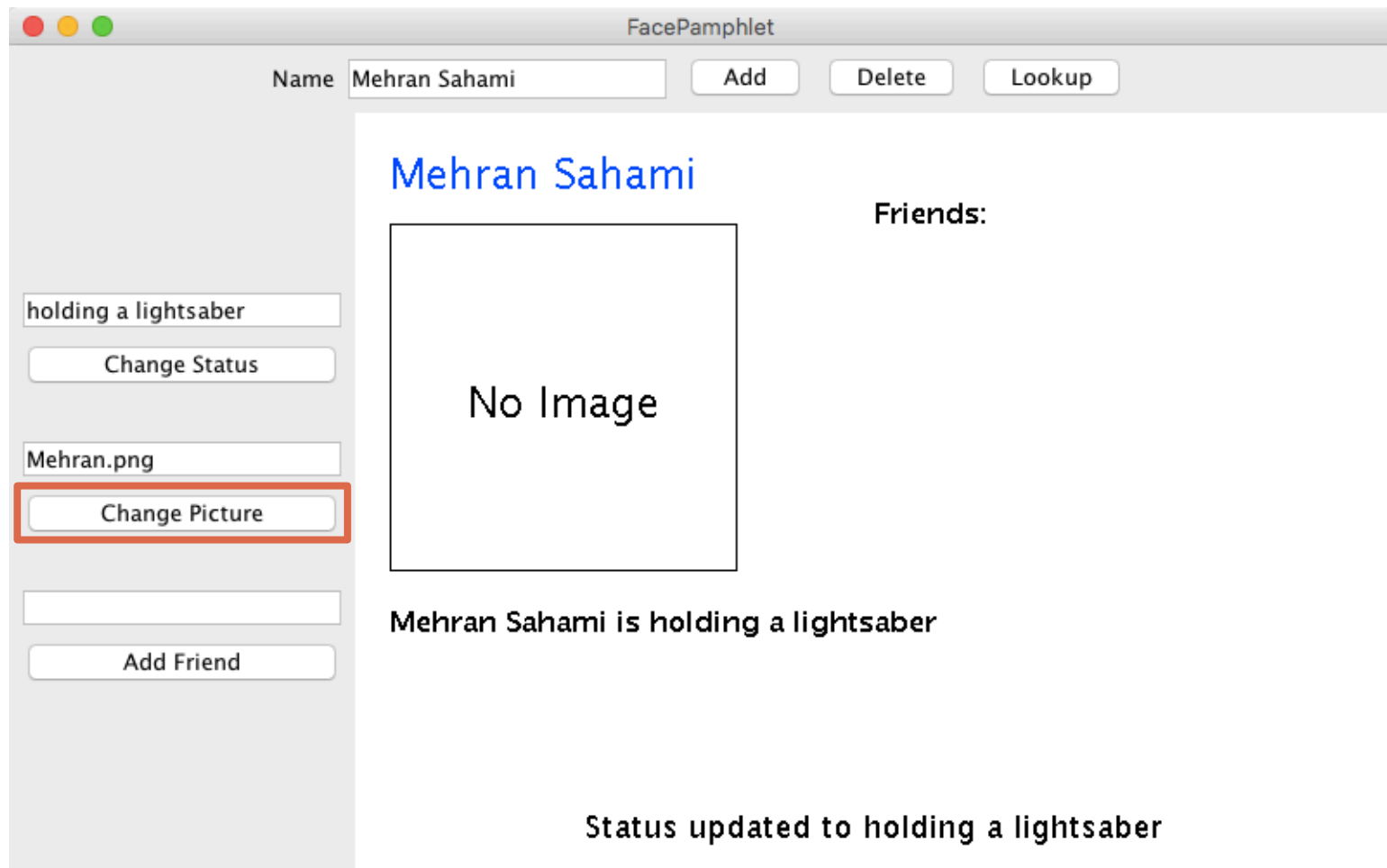
Friends:



Mehran Sahami is holding a lightsaber

Status updated to holding a lightsaber

Change picture



FacePamphlet

Name

Mehran Sahami

Friends:



Mehran Sahami is holding a lightsaber

Picture updated

Add another profile

FacePamphlet

Name

Mehran Sahami

holding a lightsaber

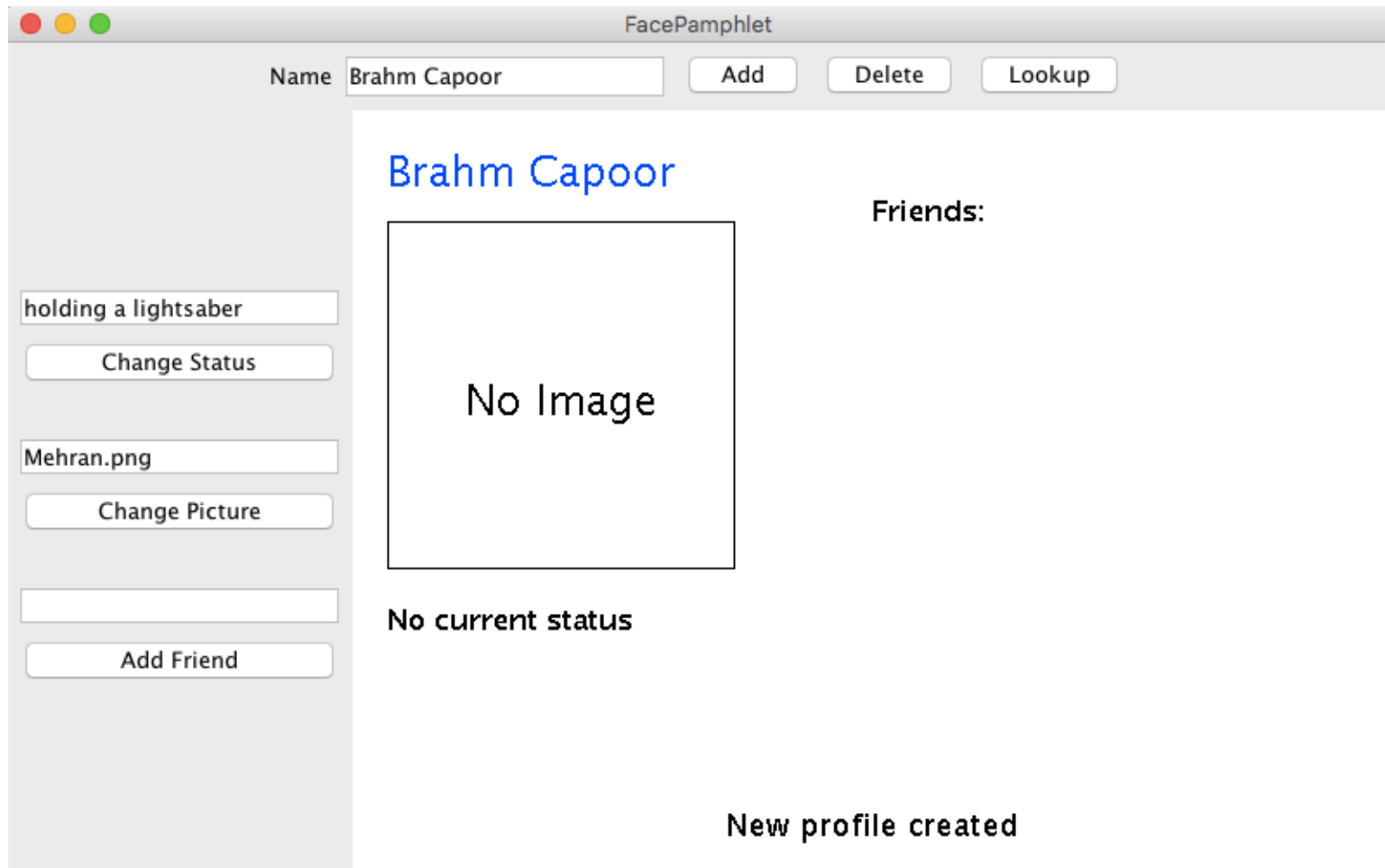
Mehran.png

Friends:

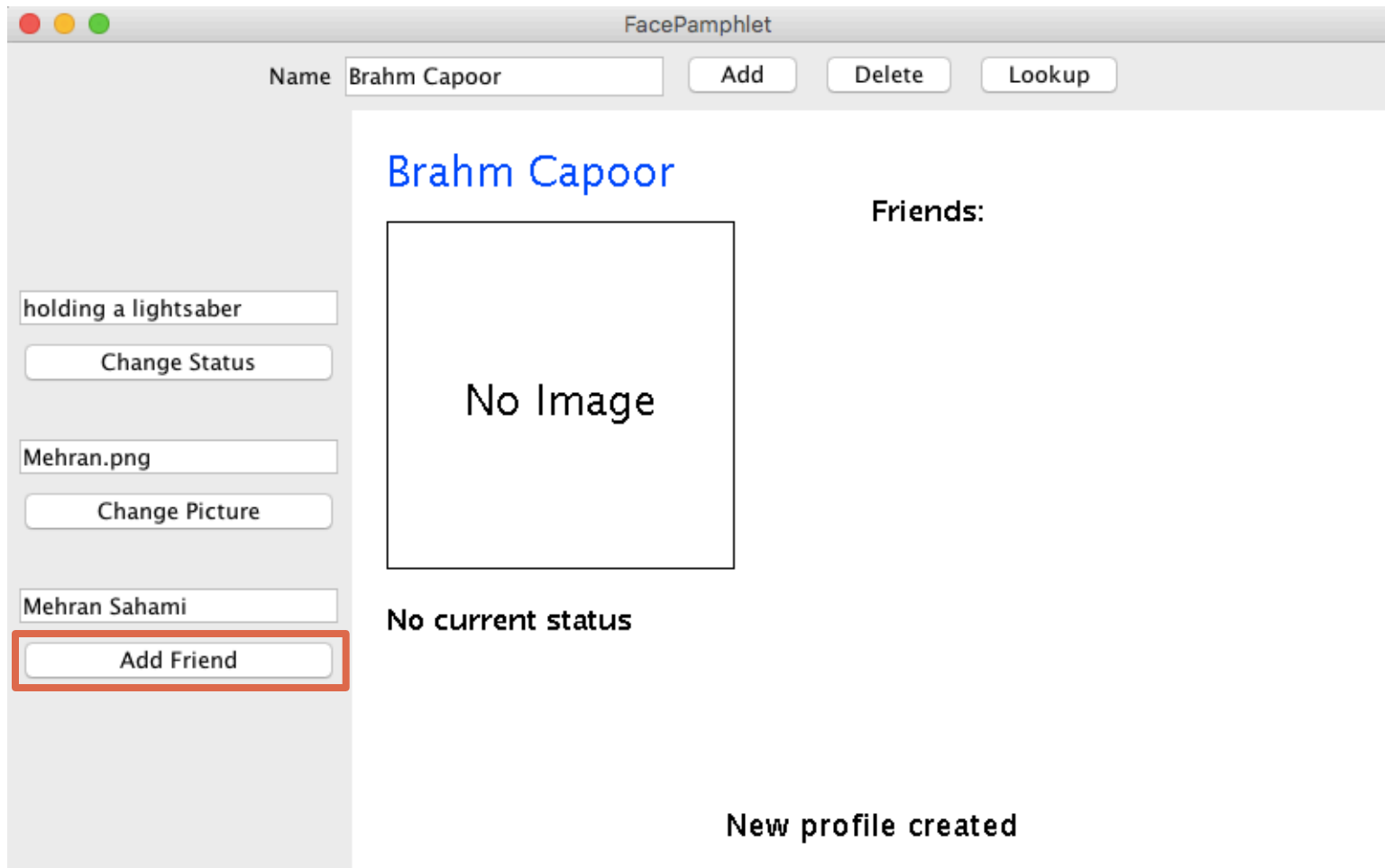


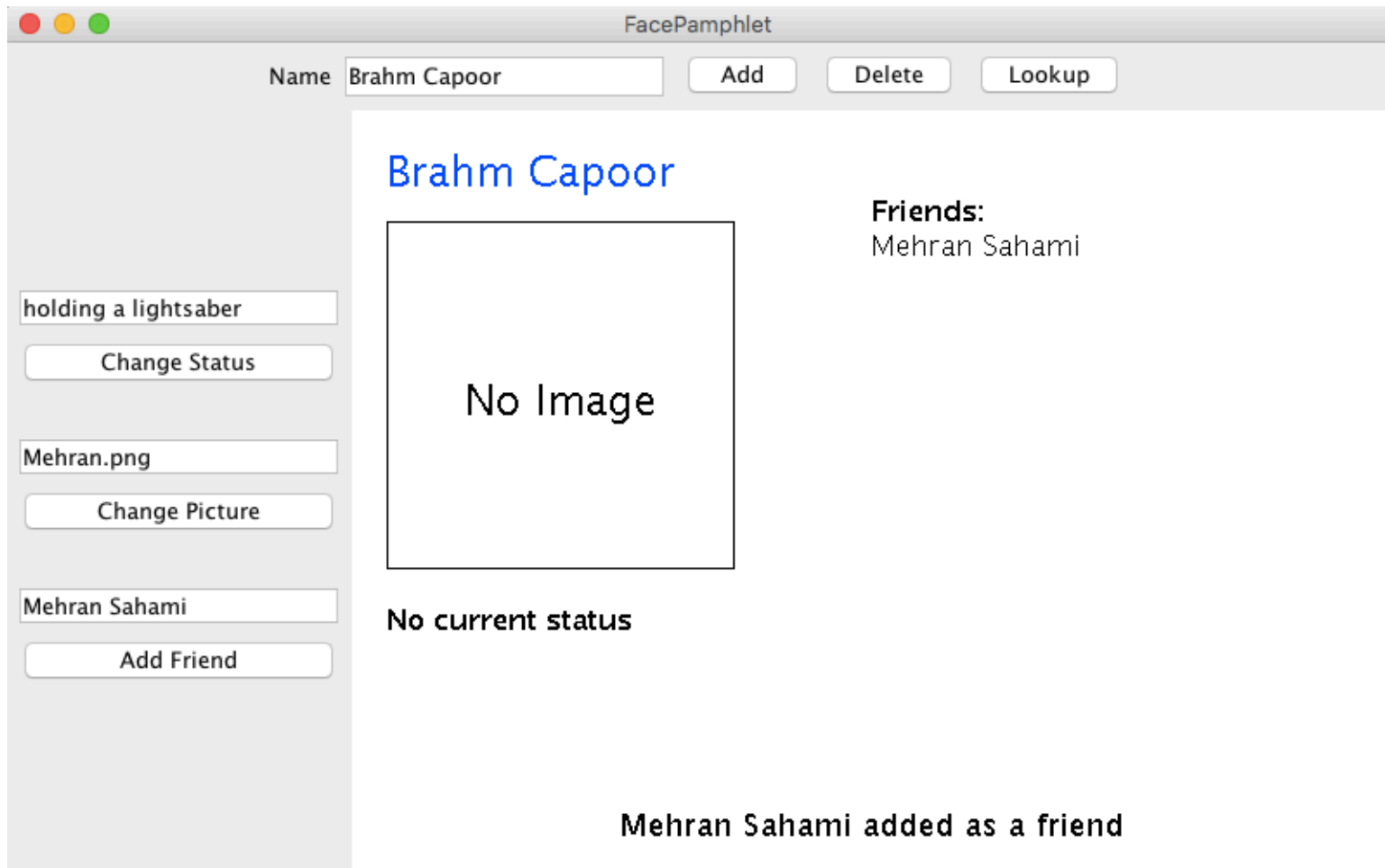
Mehran Sahami is holding a lightsaber

Picture updated

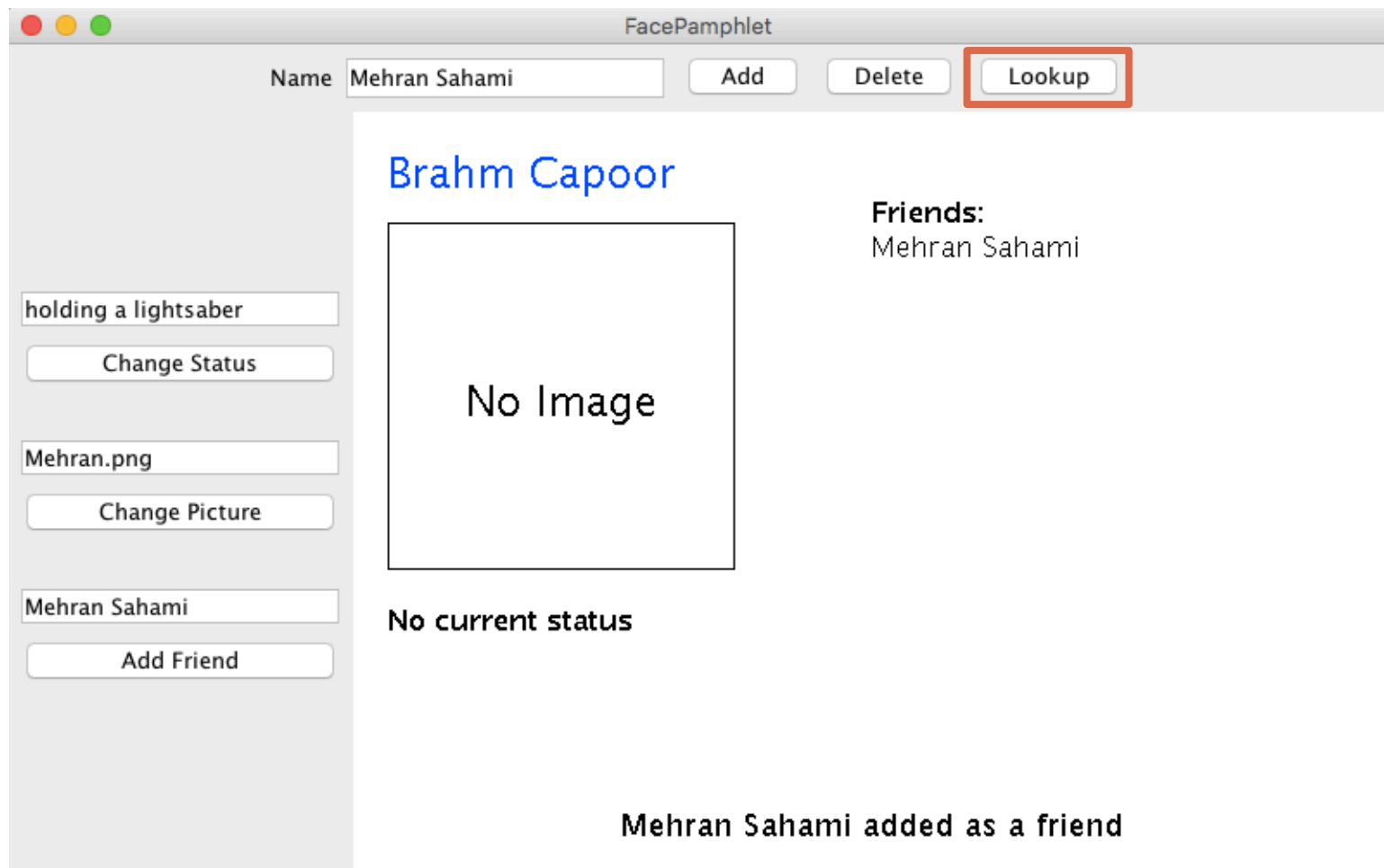


Add a friend





Lookup a profile



FacePamphlet

Name

Mehran Sahami

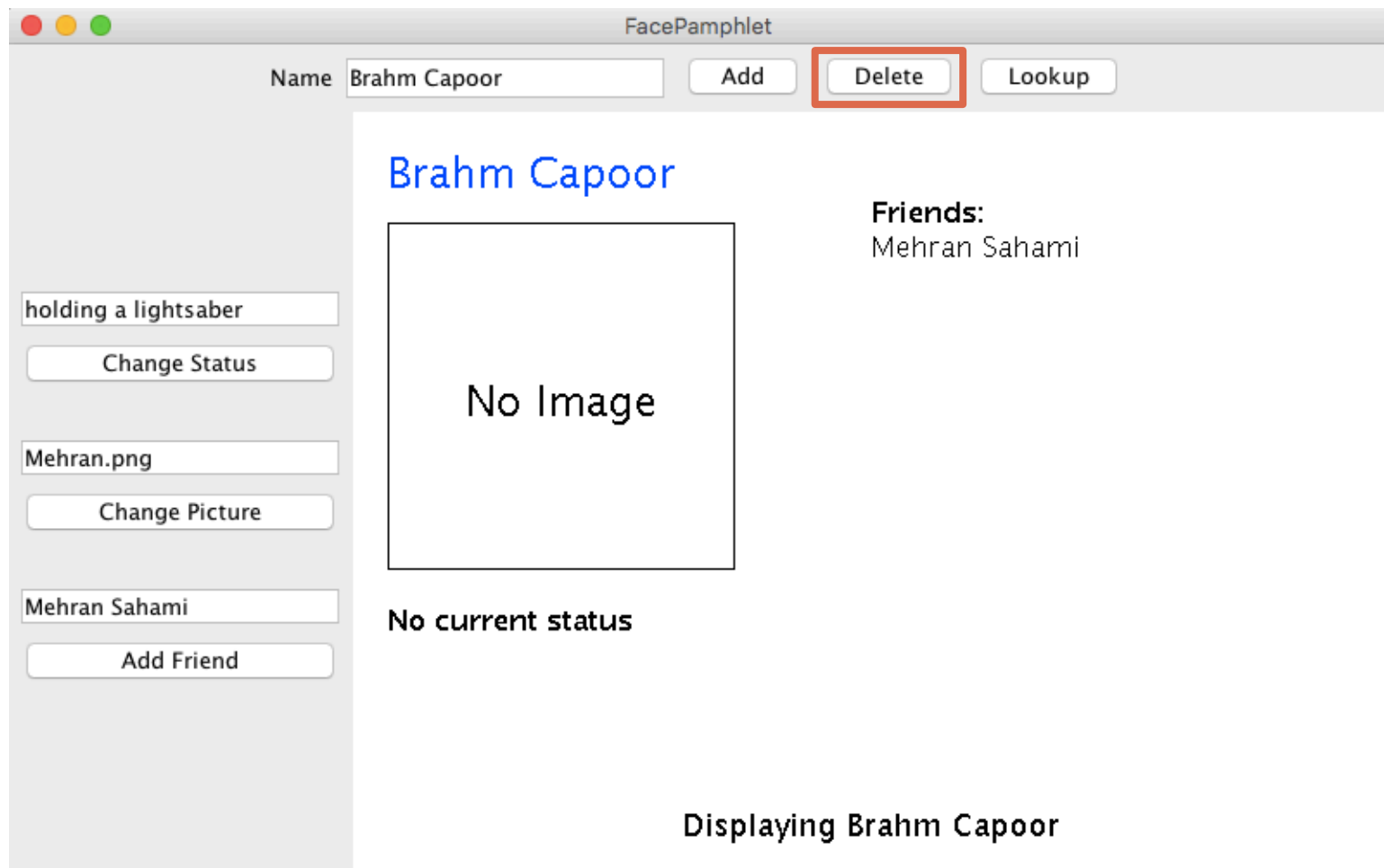


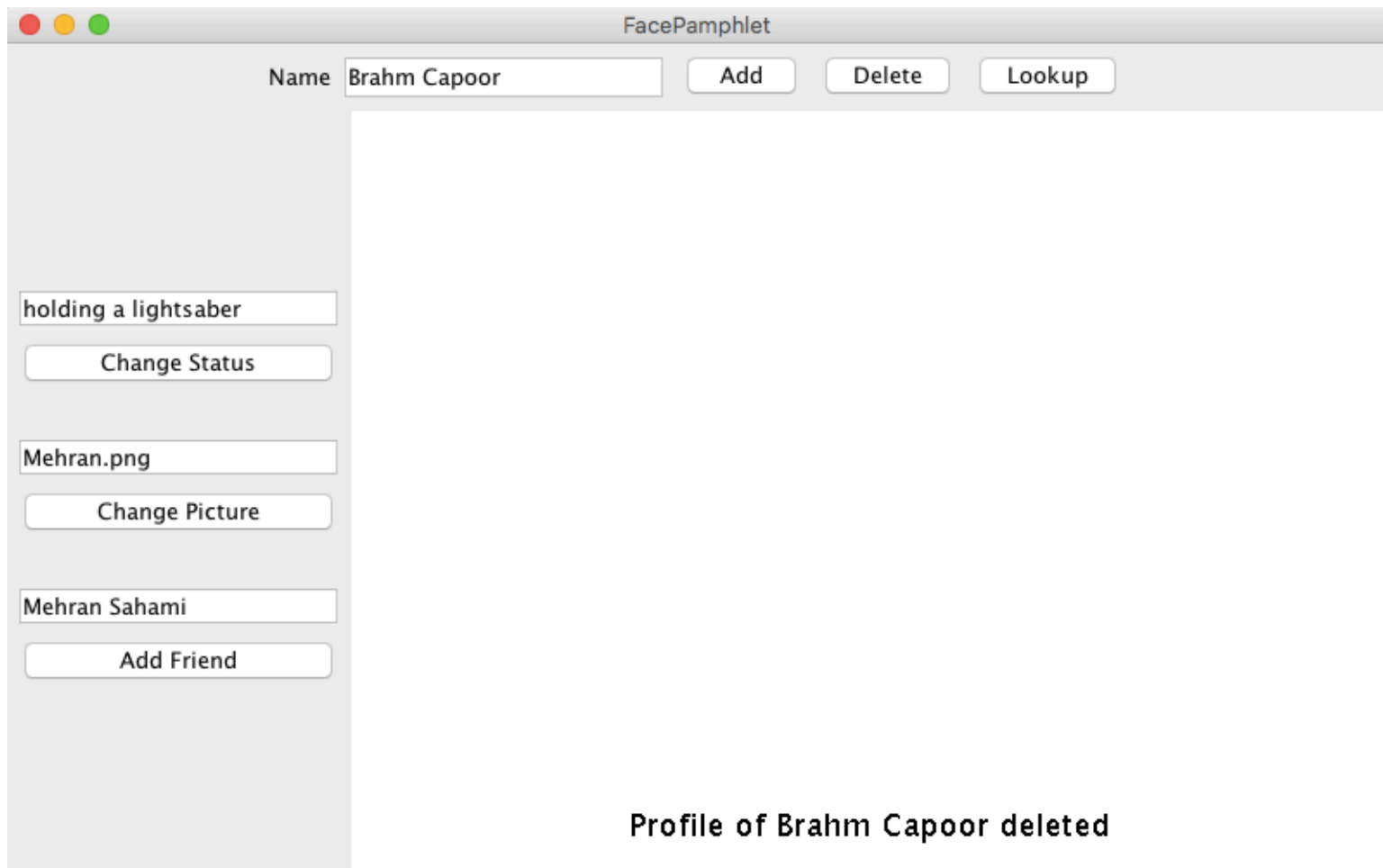
Friends:
Brahm Capoor

Mehran Sahami is holding a lightsaber

Displaying Mehran Sahami

Delete a profile





FacePamphlet

Name

Mehran Sahami



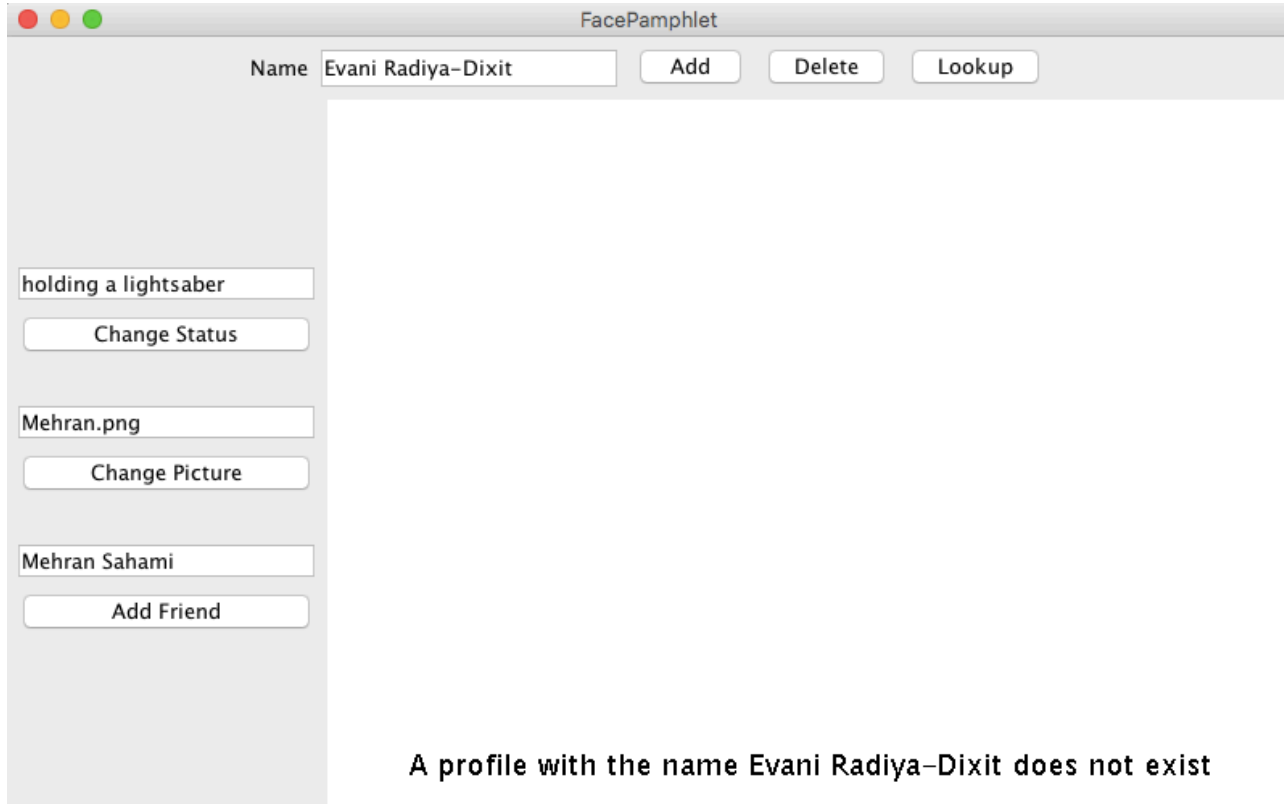
Friends:

Mehran Sahami is holding a lightsaber

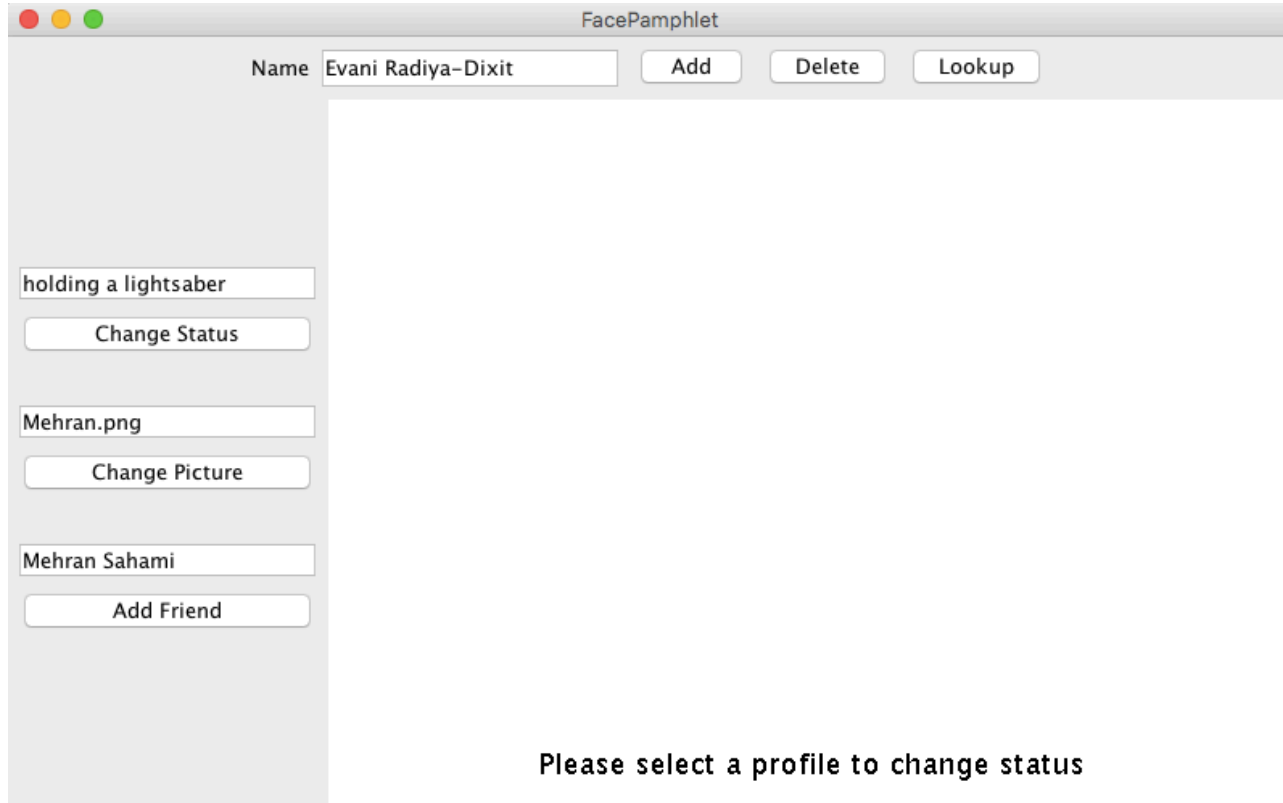
Displaying Mehran Sahami

Some examples of error checking

Lookup non-existent profile



Set status when no profile is displayed



Functionality & Error Checking

- Up to YOU to find all error cases
- Our recommendation
 - List out features for expected user interaction
 - List out error checking for unexpected user interaction
- Use to demo to see the desired functionality

NameSurfer

Keeps track of interactors used to get user input

Hands over
NameSurferEntryS
that need to be displayed

Asks for
NameSurferEntryS

NameSurferGraph

Displays the selected
NameSurferEntryS

NameSurferDatabase

Maintains a collection of
NameSurferEntryS

FacePamphlet

NameSurfer

FacePamphletCanvas

NameSurferGraph

FacePamphletDatabase

NameSurferDatabase

FacePamphlet

NameSurfer

NameSurferEntryS
couldn't be changed, but
FacePamphletProfiles
can!

FacePamphletCanvas

NameSurferGraph

FacePamphletDatabase

NameSurferDatabase

FacePamphlet

Keeps track of interactors used to get user input

Hands over a
FacePamphletProfile
that needs to be displayed

Asks for, adds, removes,
or updates
FacePamphletProfiles

FacePamphletCanvas

Displays the selected
FacePamphletProfile

FacePamphletDatabase

Maintains a collection of
FacePamphletProfiles

Milestone 1: Interactors

Profile Interactors



Status Interactors



Picture Interactors



Friend Interactors



FacePamphlet

Name

Mehran Sahami

Friends:
Brahm Capoor

Mehran Sahami is holding a lightsaber

**Empty JLabels
(EMPTY_LABEL_TEXT)**

Displaying Mehran Sahami

Milestone 1: Interactors

`actionPerformed()`
responds to:
(1) pressing the
ENTER key in a
`TextField`
(2) clicking the
`Button`
associated with
that `TextField`

FacePamphlet

Name

[Mehran Sahami](#)

Friends:
Brahm Capoor

Mehran Sahami is holding a lightsaber

To respond to ENTER:
`textField.addActionListener(this);`
Displaying Mehran Sahami

Milestone 2: FacePamphletProfile

Methods

```
public String getName()
```

```
public GImage getImage()
```

```
public void setImage(GImage img)
```

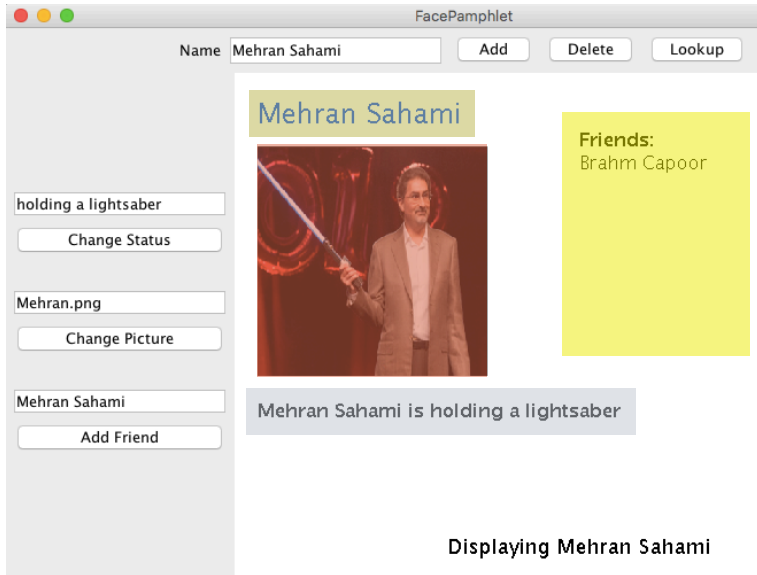
```
public String getStatus()
```

```
public void setStatus(String status)
```

```
public boolean addFriend(String friend)
```

```
public boolean removeFriend(String friend)
```

```
public Iterator<String> getFriends()
```



Milestone 2: FacePamphletProfile

Methods

public String getName()

public GImage getImage()

public void setImage(GImage img)

public String getStatus()

public void setStatus(String status)

public boolean addFriend(String friend)

public boolean removeFriend(String friend)

public **Iterator<String>** getFriends()

Instance variables

String

GImage

String

??

Milestone 2: FacePamphletProfile

Iterator<T> allows you to pass over all elements of some collection of objects of type **T**

```
Iterator<String> iter = profile.getFriends();
while (iter.hasNext()) {
    String friend = iter.next();
    // Do something with friend's name
}
```

Milestone 3: FacePamphletDatabase

Methods

```
public void addProfile(FacePamphletProfile profile)
public FacePamphletProfile getProfile(String name)
public void deleteProfile(String name)
public boolean containsProfile(String name)
```

Every profile in the database will have a unique name (enforce this when profiles are created). In other words, the name is a profile's identifier. Think about the data structures learned in class and which one is best equipped to help solve this task.

Milestone 4: Entering Profile Info

Change status

- Get the new status from the text box
- Use `setStatus(...)` of `FacePamphletProfile` to set the current profile's status
- Add “<name> is ” before the new status when displaying it

Milestone 4: Entering Profile Info

Change status

- Get the new status from the text box
- Use setStatus(...) of FacePamphletProfile to set the current profile's status
- Add "<name> is " before the new status when displaying it
- What should a status be when a profile is first created?
- Error checking when no profile is currently being displayed

Milestone 4: Entering Profile Info

Change picture

- Get the new picture filename from the text box
- Attempt to get GImage for that filename
- Use setPicture(...) of FacePamphletProfile to set the current profile's picture

Milestone 4: Entering Profile Info

Change picture (attempt to get GImage)

```
GImage image = null;  
try {  
    image = new GImage(filename);  
    // image loaded successfully  
} catch (IOException ex) {  
    // code for error message  
    // image did not load successfully  
}
```

Milestone 4: Entering Profile Info

Add friend

- Get the name from the text box
- Check that the name corresponds to a valid user profile
- Make sure the current profile doesn't already have this friend added
- Use `addFriend(...)` of `FacePamphletProfile` to add the new friend to the current profile

Milestone 4: Entering Profile Info

Add friend

- Get the name from the text box
- Check that the name corresponds to a valid user profile
- Make sure the current profile doesn't already have this friend added
- Use `addFriend(...)` of `FacePamphletProfile` to add the new friend to the current profile
- **Extension idea: make it so you cannot add yourself as a friend**

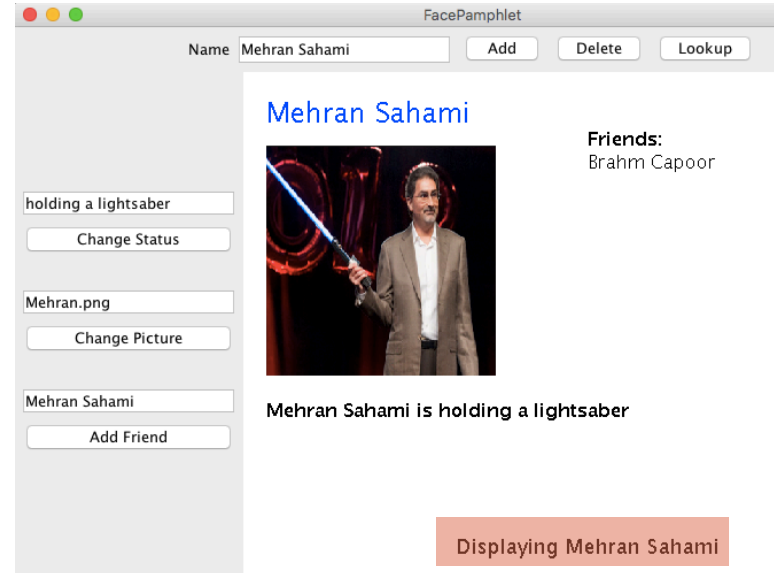
Milestone 5: FacePamphletCanvas

Use all the constants provided in
FacePamphletConstants!

Milestone 5: FacePamphletCanvas

public void showMessage(String msg)

- Updates the text at the bottom of the display
- Make sure previous messages are removed
- Use this message to tell your users when there's an error
- There are lots of different messages that you must display



Milestone 5: FacePamphletCanvas

public void displayProfile(FacePamphletProfile profile)

- Adds all information on the display
- removeAll() of GraphicsProgram may be useful



Tricky Parts

- Removing profiles
 - Modify the friends list of everyone who is friends with that person

Tricky Parts

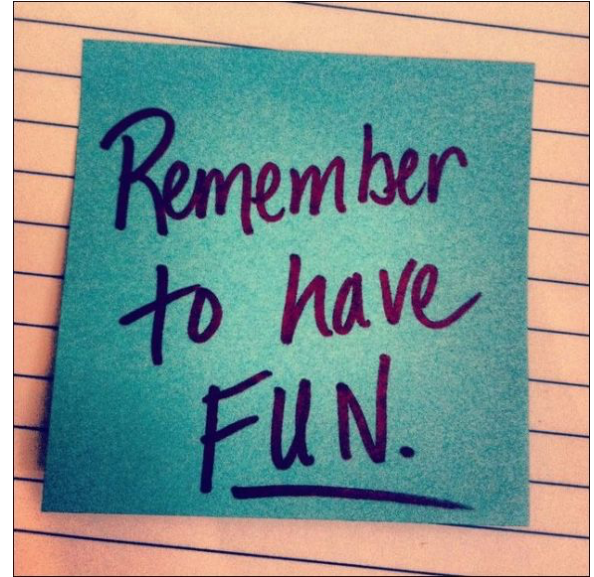
- Removing profiles
 - Modify the friends list of everyone who is friends with that person
- Display all status messages
 - showMessage(...) of FacePamphletCanvas
 - Every time you perform an action, check the spec for if a status message should be displayed

Tricky Parts

- Removing profiles
 - Modify the friends list of everyone who is friends with that person
- Display all status messages
 - showMessage(...) of FacePamphletCanvas
 - Every time you perform an action, check the spec for if a status message should be displayed
- Edge cases and error checking
 - Check if user input is valid
 - Check if objects are null

Final Tips

- Think about how FacePamphlet is similar to NameSurfer
- Work incrementally (milestones)
- Go to LaIR!
- Incorporate IG feedback!
- Go wild with extensions!



Thanks for coming!
Questions?