

# EXPERIMENT ACTIVITIES DESCRIPTION AND DATA COLLECT FORM

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*Lightweight and Heavyweight extensions: Creating KDM-AO instances*

*Experiment*

Name: \_\_\_\_\_

Group: \_\_\_\_\_ Extension: \_\_\_\_\_ Phase: \_\_\_\_\_

## **Activity 1**

-Create three CrosscuttingConcerns, following the source code below.

**package security;  
package logging;  
package persistence;**

Time to perform this activity: 6 minutes

**Start time:** \_\_\_\_h\_\_\_\_min

**End time:** \_\_\_\_h\_\_\_\_min

Activity 1 – Observations (Only after you have finished this activity):

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## Activity 2

-Create the three Aspects presented below and link them to their respective crosscutting concern created earlier.

```
public aspect ObjectsController {}  
public aspect SecurityComposition{}  
public aspect PartialAwareness {}
```

Time to perform this activity: 6 minutes

**Start time:** \_\_\_\_h\_\_\_\_min

**End time:** \_\_\_\_h\_\_\_\_min

Activity 2 – Observations (Only after you have finished this activity):

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## Activity 3

-Create these PointCuts, following the source code below.

```
public pointcut affectedClasses(): execution (move());  
public pointcut saveOrUpdate(): withincode (getAccount());  
public pointcut excludedJoinPoints(): call (setName());
```

Time to perform this activity: 12 minutes

**Start time:** \_\_\_\_h\_\_\_\_min

**End time:** \_\_\_\_h\_\_\_\_min

Activity 3 – Observations (Only after you have finished this activity):

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#### **Activity 4**

-Create two PointCuts, following the source code below.

```
public pointcut dirtyObjects():  
    execution (save()) || call (delete());  
public pointcut cleanObjects():  
    call (update()) && execution(copy());
```

Time to perform this activity: 25 minutes

**Start time:** \_\_h\_\_min

**End time:** \_\_h\_\_min

Activity 4 – Observations (Only after you have finished this activity):

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#### **Activity 5**

Create three Advices, following the source code below.

```
after(): affectedClasses(){ //source code }  
before(): saveOrUpdate(){ //source code }  
around(): excludedJoinPoints(){ //source code }
```

Time to perform this activity: 9 minutes

**Start time:** \_\_h\_\_min

**End time:** \_\_h\_\_min

Time to perform this activity: 9 minutes

Activity 5 – Observations (Only after you have finished this activity):

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## **Activity 6**

Create the following Inter-Type Declarations, following the source code below.

```
public boolean PersistenceRoot. tableName;  
public int PersistenceRoot. keyName;  
public String PersistenceRoot. numberOfAttributes;  
public int PersistenceRoot. setTableName() {}  
public void PersistenceRoot. setColValues() {}
```

Time to perform this activity: 9 minutes

**Start time:** \_\_\_\_h\_\_\_\_min

**End time:** \_\_\_\_h\_\_\_\_min

Activity 6 – Observations (Only after you have finished this activity):

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## Activity 7

Now you have to maintain the source code.

Please, open the java class maintenance\_experiment to perform this activity.

-Add the following properties to Aspect1:

- “isAbstract = false”;
- “PrecededBy = Aspect1”;
- “Precedes = Aspect1”.

Time to perform this activity: 9 minutes

**Start time:** \_\_h\_\_min

**End time:** \_\_h\_\_min

Activity 7 – Observations (Only after you have finished this activity):

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## Activity 8

Continuing in java class maintenance\_experiment, perform the following maintenance.

-Transform the following pointcut as follows.

**As is**

**public pointcut pointcut4(): execution (method1());**

**To be**

**public pointcut pointcut4():**

**execution (method1()) || call (method2());**

Time to perform this activity: 9 minutes

**Start time:** \_\_h\_\_min

**End time:** \_\_h\_\_min

Activity 8 – Observations (Only after you have finished this activity):

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