

Input: A map of string to string representing the association of layers to their respective filenames in the repository.

Output: Layers, which is an object containing all layers or components used to build the game.

function loadXmlComponents

```
    layers : Layers;
    jaxbContext : JAXBContext;
    file : File;
    unmarshaller : Unmarshaller;
    for layer  $\in$  layers – {lesson, challenge}
        jaxbContext  $\leftarrow$  JAXBContext.newInstance(layer.class)
        unmarshaller  $\leftarrow$  jaxbContext.createUnmarshaller();
        file  $\leftarrow$  File(xmlFiles.layer);
        layers.layer  $\leftarrow$  unmarshaller.unmarshal(file);
    jaxbContext  $\leftarrow$  JAXBContext.newInstance(lesson.class)
    unmarshaller  $\leftarrow$  jaxbContext.createUnmarshaller();
    lessons : Lesson[];
    for lessonFile  $\in$  xmlFiles.lessons
        lesson : Lesson;
        file  $\leftarrow$  File(lessonFile);
        lesson  $\leftarrow$  unmarshaller.unmarshal(file);
        lessons  $\leftarrow$  lessons  $\cup$  {lesson};
    jaxbContext  $\leftarrow$  JAXBContext.newInstance(challenge.class)
    unmarshaller  $\leftarrow$  jaxbContext.createUnmarshaller();
    challenges : Challenge[];
    for challengeFile  $\in$  xmlFiles.challenges
        challenge : Challenge;
        file  $\leftarrow$  File(challengeFile);
        challenge  $\leftarrow$  unmarshaller.unmarshal(file);
        challenges  $\leftarrow$  challenges  $\cup$  {challenge};
    learningObjectives : LearningObjective[];
    for (lesson  $\in$  lessons) && (challenge  $\in$  challenges)
        learningObjective : LearningObjective;
        lessonActs : LessonAct[];
        lessonAct : LessonAct;
        lessonAct.lessonScreens  $\leftarrow$  lesson;
        lessonAct.challengeScreens  $\leftarrow$  challenge;
        lessonActs  $\leftarrow$  lessonActs  $\cup$  {lessonAct};
        learningObjective.lessonActs  $\leftarrow$  lessonActs;
        learningObjectives  $\leftarrow$  learningObjectives  $\cup$  {learningObjective};
    layers.learningObjectives  $\leftarrow$  learningObjectives;
    call wireUpLayers;
```