

<epam>

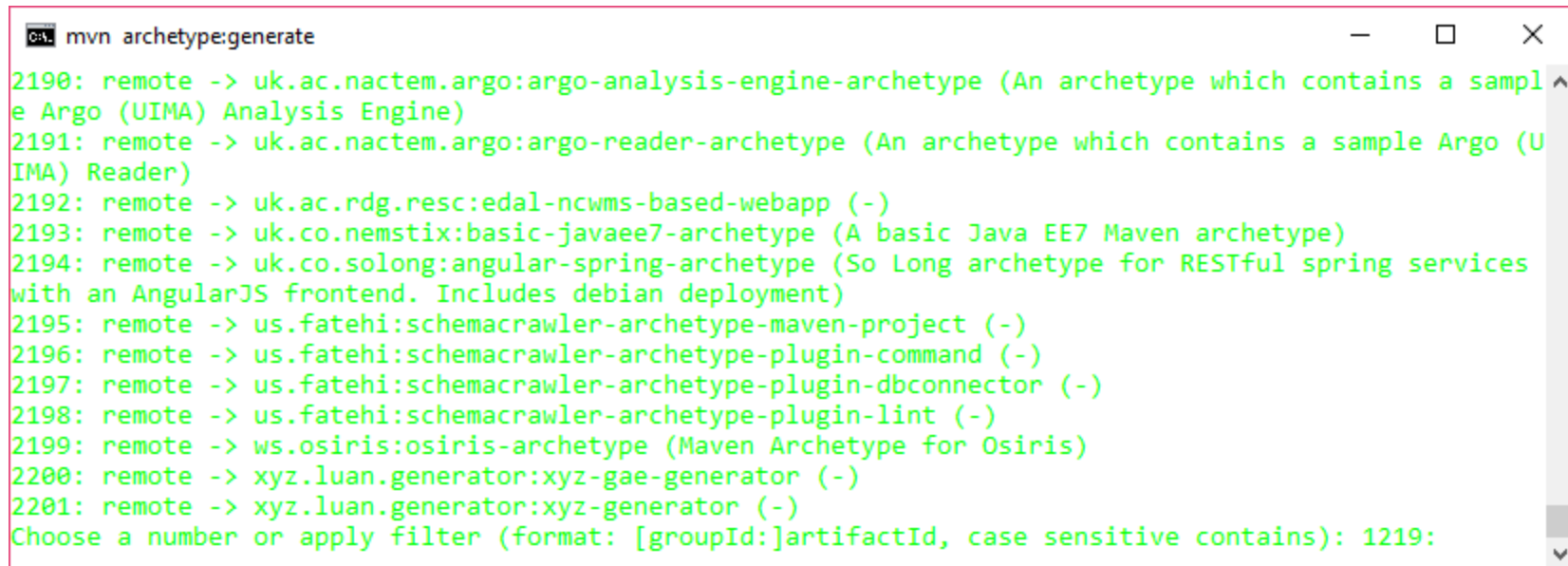
Maven

Unit 02



Создание maven-проектов с использованием архетипов

> mvn archetype:generate

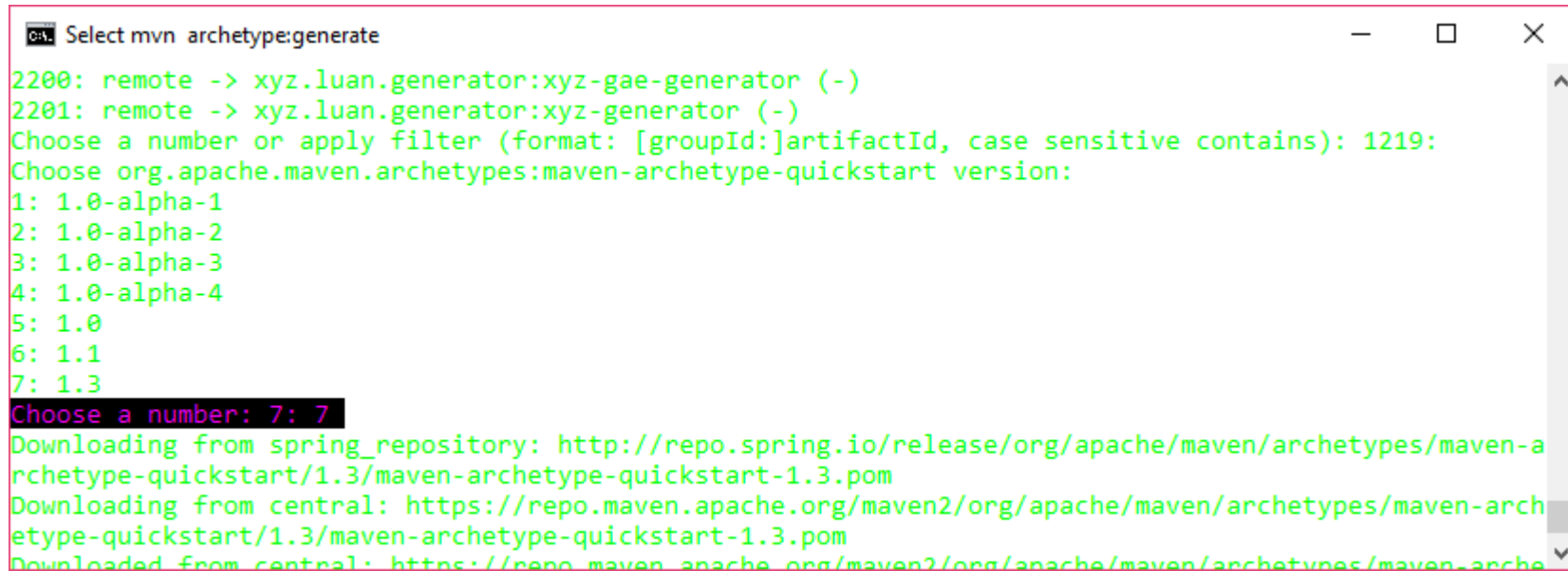


```
mvn archetype:generate
2190: remote -> uk.ac.nactem.argo:argo-analysis-engine-archetype (An archetype which contains a sample Argo (UIMA) Analysis Engine)
2191: remote -> uk.ac.nactem.argo:argo-reader-archetype (An archetype which contains a sample Argo (UIMA) Reader)
2192: remote -> uk.ac.rdg.resc:edal-ncwms-based-webapp (-)
2193: remote -> uk.co.nemstix:basic-javaee7-archetype (A basic Java EE7 Maven archetype)
2194: remote -> uk.co.solong:angular-spring-archetype (So Long archetype for RESTful spring services with an AngularJS frontend. Includes debian deployment)
2195: remote -> us.fatehi:schemacrawler-archetype-maven-project (-)
2196: remote -> us.fatehi:schemacrawler-archetype-plugin-command (-)
2197: remote -> us.fatehi:schemacrawler-archetype-plugin-dbconnector (-)
2198: remote -> us.fatehi:schemacrawler-archetype-plugin-lint (-)
2199: remote -> ws.osiris:osiris-archetype (Maven Archetype for Osiris)
2200: remote -> xyz.luan.generator:xyz-gae-generator (-)
2201: remote -> xyz.luan.generator:xyz-generator (-)
Choose a number or apply filter (format: [groupId:]artifactId, case sensitive contains): 1219:
```

Нажмите клавишу <ввод>

Maven. Unit 02

Выберите версию шаблона для создания простого консольного приложения.



```
0% Select mvn archetype:generate
2200: remote -> xyz.luan.generator:xyz-gae-generator (-)
2201: remote -> xyz.luan.generator:xyz-generator (-)
Choose a number or apply filter (format: [groupId:]artifactId, case sensitive contains): 1219:
Choose org.apache.maven.archetypes:maven-archetype-quickstart version:
1: 1.0-alpha-1
2: 1.0-alpha-2
3: 1.0-alpha-3
4: 1.0-alpha-4
5: 1.0
6: 1.1
7: 1.3
Choose a number: 7: 7
Downloading from spring_repository: http://repo.spring.io/release/org/apache/maven/archetypes/maven-archetype-quickstart/1.3/maven-archetype-quickstart-1.3.pom
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/archetypes/maven-archetype-quickstart/1.3/maven-archetype-quickstart-1.3.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/archetypes/maven-archetype-quickstart/1.3/maven-archetype-quickstart-1.3.pom
```

Maven. Unit 02

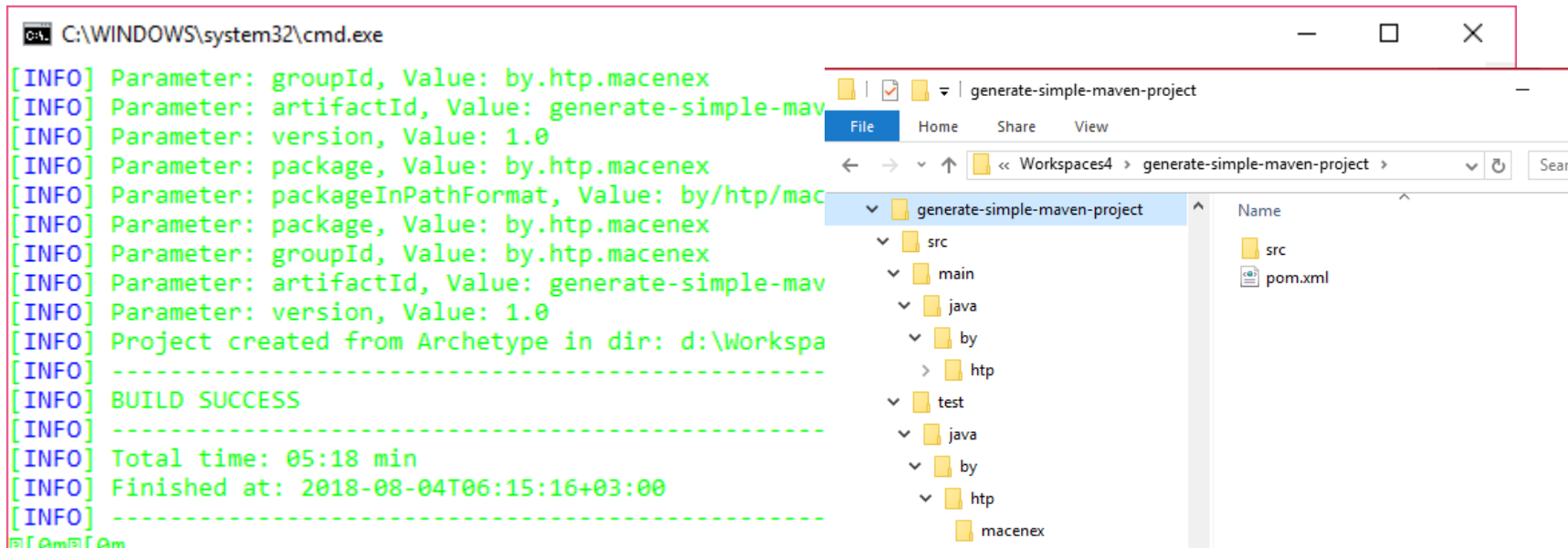
Заполните требуемые атрибуты maven-проекта.



```
cmd mvn archetype:generate
Downloading from spring_repository: http://repo.spring.io/release/org/apache/maven/archetypes/maven-archetype-quickstart/1.3/maven-archetype-quickstart-1.3.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/archetypes/maven-archetype-quickstart/1.3/maven-archetype-quickstart-1.3.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/archetypes/maven-archetype-quickstart/1.3/maven-archetype-quickstart-1.3.jar (7.0 kB at 66 kB/s)
Define value for property 'groupId': by.http.macenex
Define value for property 'artifactId': generate-simple-maven-project
Define value for property 'version' 1.0-SNAPSHOT: : 1.0
Define value for property 'package' by.http.macenex: :
Confirm properties configuration:
groupId: by.http.macenex
artifactId: generate-simple-maven-project
version: 1.0
package: by.http.macenex
Y: : y
```

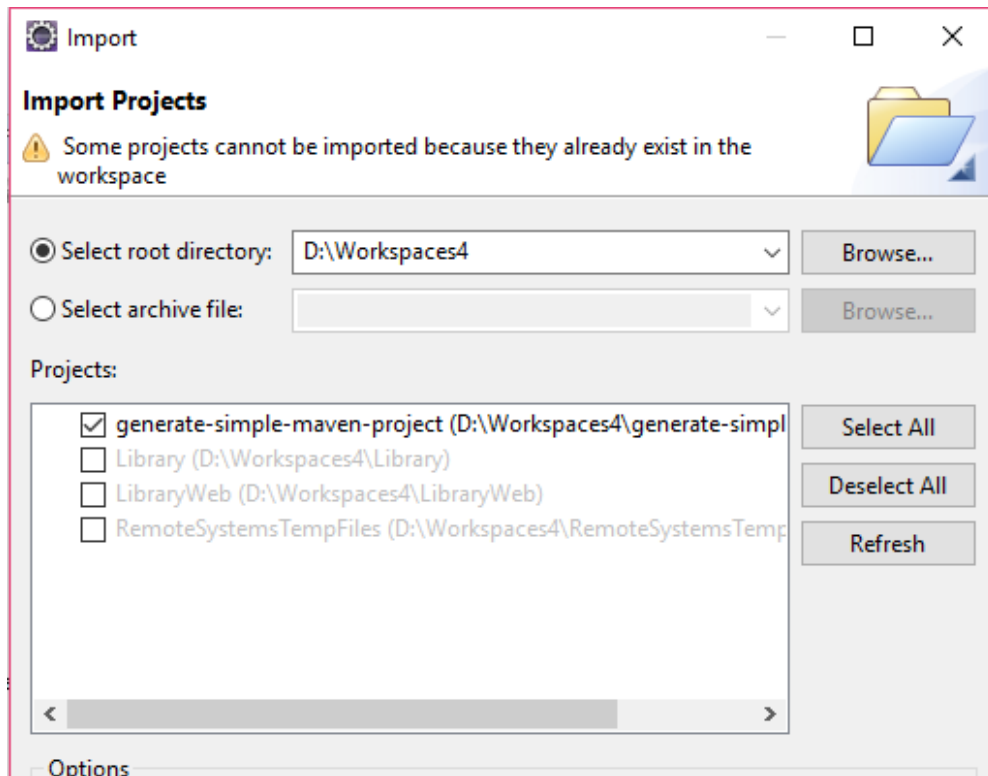
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Проверьте созданный проект.



Конвертация maven-проекта в eclipse-maven-проект.

>mvn eclipse:eclipse



Maven. Unit 02

Часть автосгенериро- ванного pom.xml

```
<?xml version="1.0" encoding="UTF-8"?>

<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>

  <groupId>by.htp.macenex</groupId>
  <artifactId>generate-simple-maven-project</artifactId>
  <version>1.0</version>

  <name>generate-simple-maven-project</name>
  <!-- FIXME change it to the project's website -->
  <url>http://www.example.com</url>

  <properties>
    <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
    <maven.compiler.source>1.7</maven.compiler.source>
    <maven.compiler.target>1.7</maven.compiler.target>
  </properties>

  <dependencies>
    <dependency>
      <groupId>junit</groupId>
      <artifactId>junit</artifactId>
      <version>4.11</version>
      <scope>test</scope>
    </dependency>
  </dependencies>
```

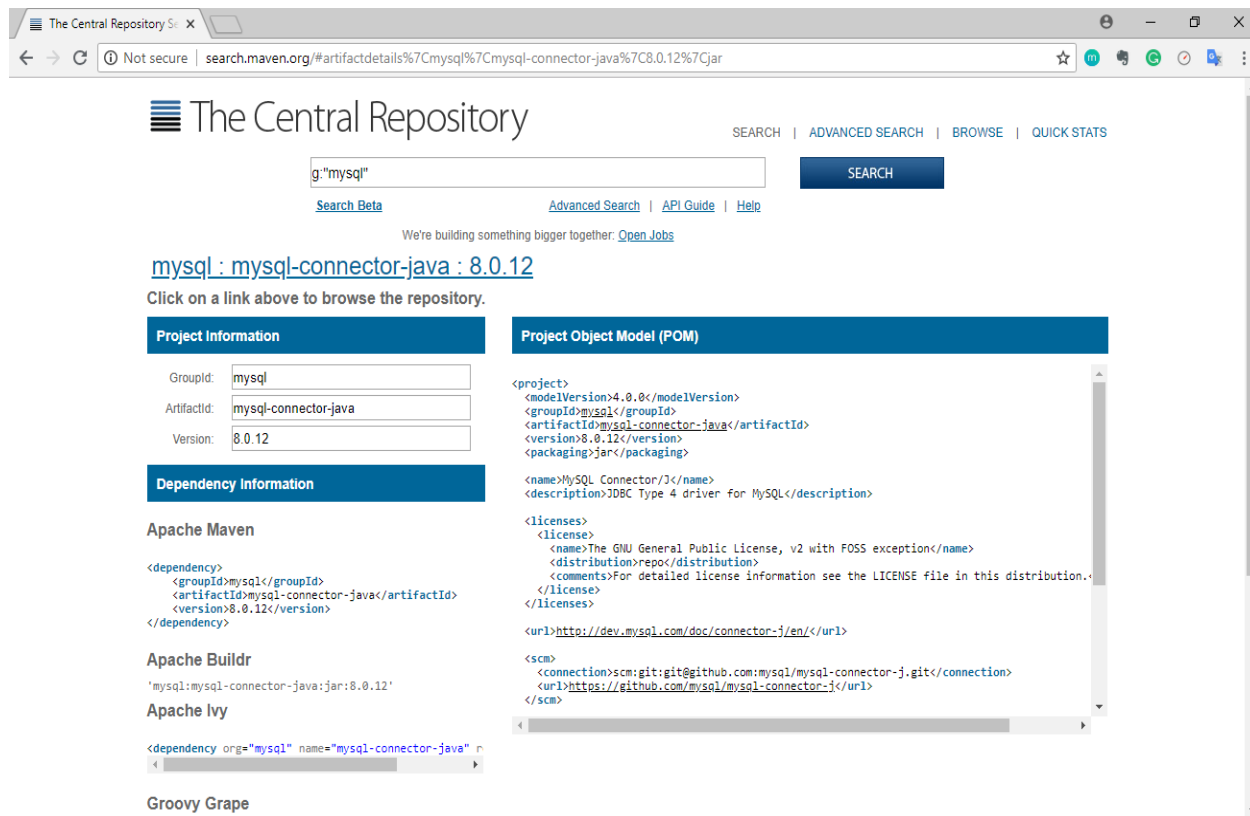
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```
import java.sql.Connection;  
import java.sql.DriverManager;  
import java.sql.SQLException;
```

```
public class App {  
    public static void main( String[] args ) throws SQLException,  
        ClassNotFoundException  
    {  
        Class.forName("com.mysql.jdbc.Driver");  
        Connection connection =  
        DriverManager.getConnection("jdbc:mysql://127.0.0.1/htp",  
            "root",  
            "123456");  
        System.out.println( "Hello World!" );  
    }  
}
```

```
<dependency>  
    <groupId>mysql</groupId>  
    <artifactId>mysql-connector-java</artifactId>  
    <version>5.1.6</version>  
</dependency>
```


Maven. Unit 02



The screenshot shows a web browser window with the URL `search.maven.org/#artifactdetails%7Cmysql%7Cmysql-connector-java%7C8.0.12%7Cjar`. The page is titled "The Central Repository" and features a search bar with the query `g:"mysql"`. Below the search bar, there are links for "Search Beta", "Advanced Search", "API Guide", and "Help". A message states "We're building something bigger together: [Open Jobs](#)".

The main content area displays the search results for `mysql:mysql-connector-java:8.0.12`. It includes a section for "Project Information" with fields for GroupId, ArtifactId, and Version. Below this is a "Dependency Information" section showing the Apache Maven dependency declaration. To the right, the "Project Object Model (POM)" is displayed, showing the XML structure of the project.

Project Information

GroupId: `mysql`
ArtifactId: `mysql-connector-java`
Version: `8.0.12`

Dependency Information

Apache Maven

```
<dependency>
  <groupId>mysql</groupId>
  <artifactId>mysql-connector-java</artifactId>
  <version>8.0.12</version>
</dependency>
```

Apache Buildr

```
'mysql:mysql-connector-java:jar:8.0.12'
```

Apache Ivy

```
<dependency org="mysql" name="mysql-connector-java" r
```

Groovy Grape

Project Object Model (POM)

```
<project>
  <modelVersion>4.0.0</modelVersion>
  <groupId>mysql</groupId>
  <artifactId>mysql-connector-java</artifactId>
  <version>8.0.12</version>
  <packaging>jar</packaging>

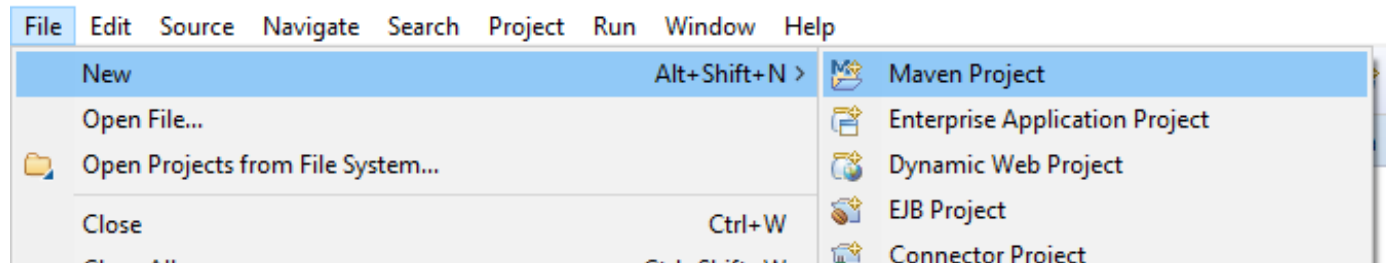
  <name>MySQL Connector/J</name>
  <description>JDBC Type 4 driver for MySQL</description>

  <licenses>
    <license>
      <name>The GNU General Public License, v2 with FOSS exception</name>
      <distribution>repo</distribution>
      <comments>For detailed license information see the LICENSE file in this distribution.
    </license>
  </licenses>

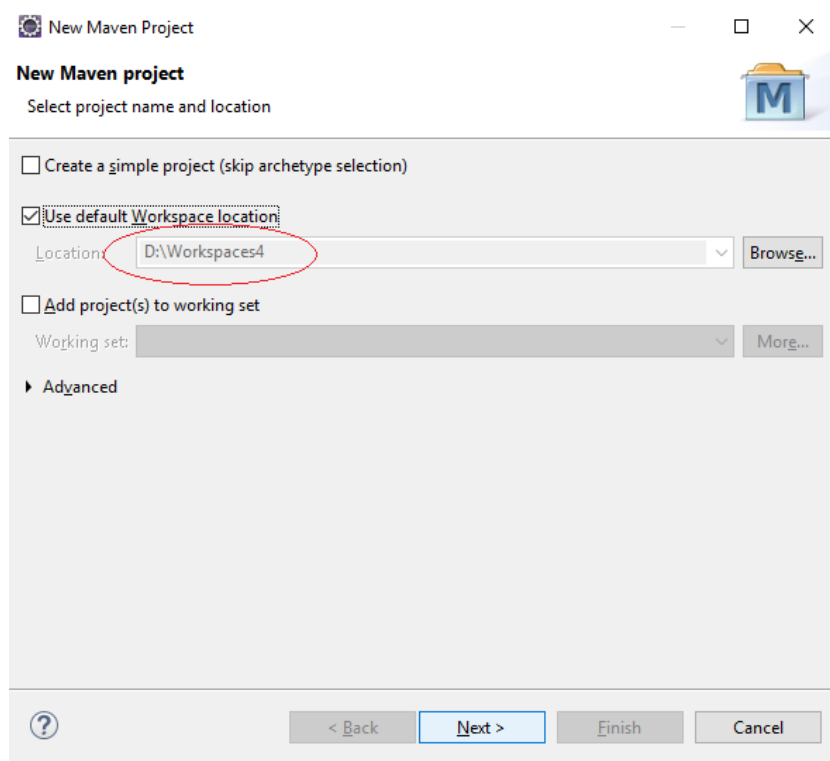
  <url>http://dev.mysql.com/doc/connector-j/en/</url>

  <scm>
    <connection>scm:git:github.com:mysql/mysql-connector-j.git</connection>
    <url>https://github.com/mysql/mysql-connector-j</url>
  </scm>
```

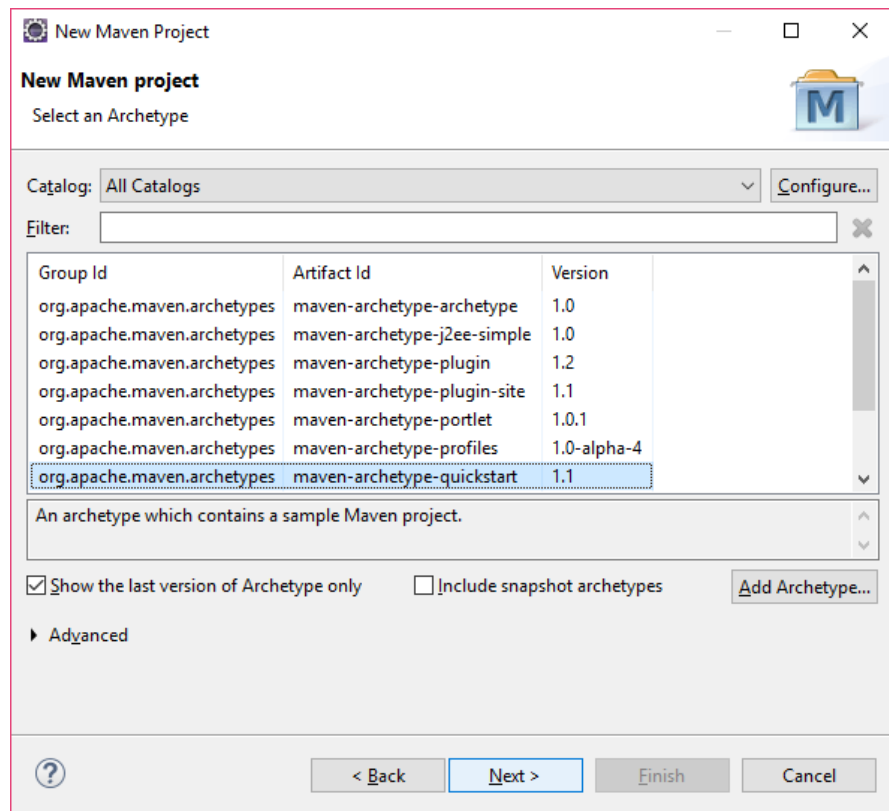
Создание maven-проекта в eclipse.



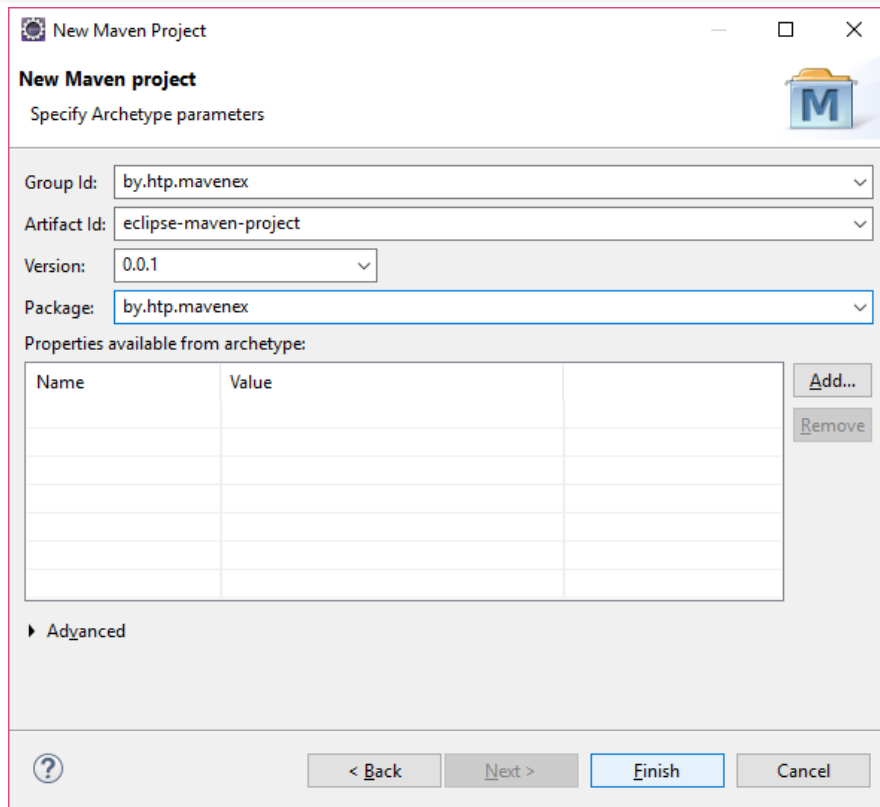
Maven. Unit 02



Maven. Unit 02



Maven. Unit 02



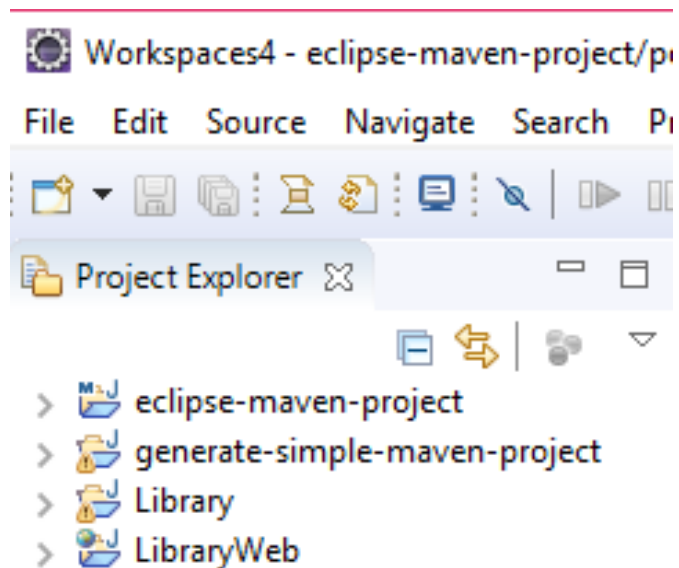
The screenshot shows the 'New Maven Project' dialog box in the Eclipse IDE. The title bar reads 'New Maven Project'. Below the title bar, the text 'New Maven project' is displayed, followed by 'Specify Archetype parameters'. A folder icon with a blue 'M' is visible on the right side of the dialog.

The dialog contains several input fields for specifying project parameters:

- Group Id:** by.htp.mavenex
- Artifact Id:** eclipse-maven-project
- Version:** 0.0.1
- Package:** by.htp.mavenex

Below these fields, there is a section titled 'Properties available from archetype:' which contains a table with two columns: 'Name' and 'Value'. The table is currently empty. To the right of the table are two buttons: 'Add...' and 'Remove'.

At the bottom of the dialog, there is a section labeled 'Advanced' with a right-pointing arrow. The bottom of the dialog features a navigation bar with four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'. A help icon (?) is located to the left of the 'Back' button.



JAXB

Java Architecture for XML Binding (JAXB) – архитектура связывания данных, обеспечивает связь между XML схемами и Java-представлениями, предоставляя возможность использовать данные представленные в виде XML в приложениях Java.

Используя аннотации JAXB конвертирует объекты в/из XML-файл.

- **Marshalling** – конвертирование java-объектов в XML-файл
- **Unmarshalling** – конвертирование XML в java-объект.
- JAXB позволяет генерировать XML схемы из Java объектов

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```
@XmlRootElement
@XmlAccessorType(XmlAccessType.FIELD)
@XmlType(name = "Food", propOrder = { "name", "price", "description", "calories" })
public class Food {
    @XmlAttribute(required = true)
    private int id;

    @XmlElement(required = true)
    private String name;

    @XmlElement(required = true)
    private String price;

    @XmlElement(required = true)
    private String description;

    @XmlElement(required = true)
    private int calories;

    public Food(){}
}
// set and get methods }
```


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Marshalling, пример

```
JAXBContext context = JAXBContext.newInstance(Food.class);  
Marshaller m = context.createMarshaller();
```

```
Food food = new Food();  
food.setId(123);  
food.setName("nnn");  
food.setDescription("ddd");  
food.setCalories(234);  
food.setPrice("333");
```

```
m.marshal(food, new FileOutputStream("food.xml"));  
m.marshal(food, System.out); // на консоль  
System.out.println("XML-файл создан");
```

Maven. Unit 02

Unmarshalling, пример

```
File file = new File("food.xml");  
JAXBContext jaxbContext = JAXBContext.newInstance(Food.class);  
  
Unmarshaller jaxbUnmarshaller = jaxbContext.createUnmarshaller();  
Food food = (Food) jaxbUnmarshaller.unmarshal(file);  
System.out.println(food.getName());
```

Возможно обратное создание на основе XML-схемы классов на языке Java с помощью команды

xjc university.xsd

Работа с JAXB в Java 9

```
<dependency>  
  <groupId>javax.xml.bind</groupId>  
  <artifactId>jaxb-api</artifactId>  
  <version>2.2.8</version>  
</dependency>
```

```
<dependency>  
  <groupId>com.sun.xml.bind</groupId>  
  <artifactId>jaxb-core</artifactId>  
  <version>2.3.0.1</version>  
</dependency>
```

```
<dependency>  
  <groupId>com.sun.xml.bind</groupId>  
  <artifactId>jaxb-impl</artifactId>  
  <version>2.3.0.1</version>  
</dependency>
```

MAVEN. UNIT 02