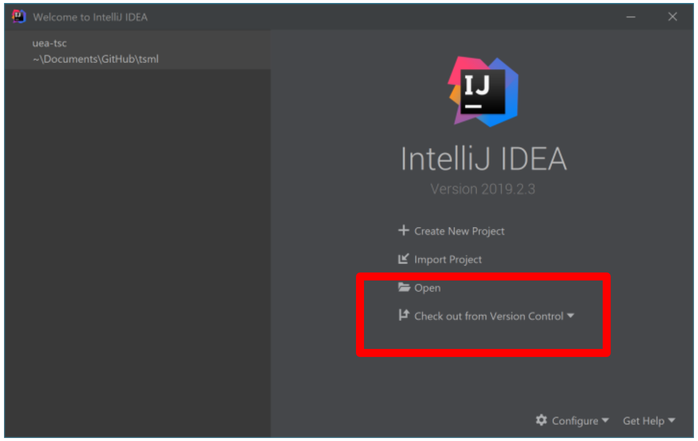
Building JARs with TSML in InteliJ

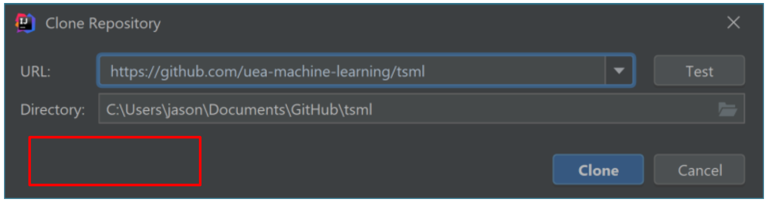
University of East Anglia

Prerequisites

Either:

1. Download/check-out the tsml code manually and open in InteliJ
2. Clone directly from the InteliJ welcome screen



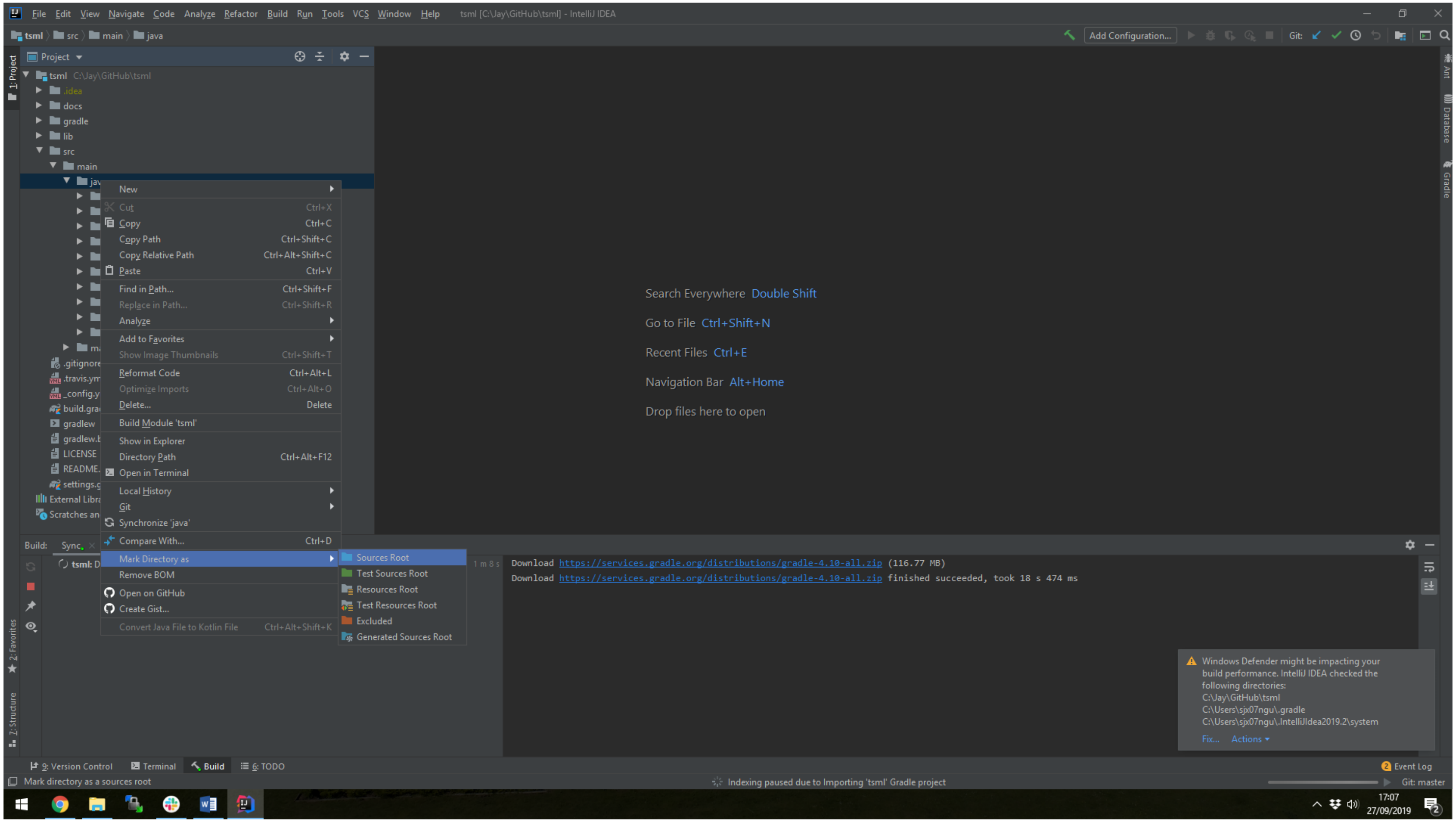


URL: https://github.com/uea-machine-learning/tsml

Directory: C:\Users\jason\Documents\GitHub\tsml

Note – I'm already logged into GitHub via InteliJ.
If not logged in, a button to do so will be here (recommended)

Once opened, right click tsml/src/main/java and click Mark Directory as Source Route (it should go blue afterwards - if it wasn't already)



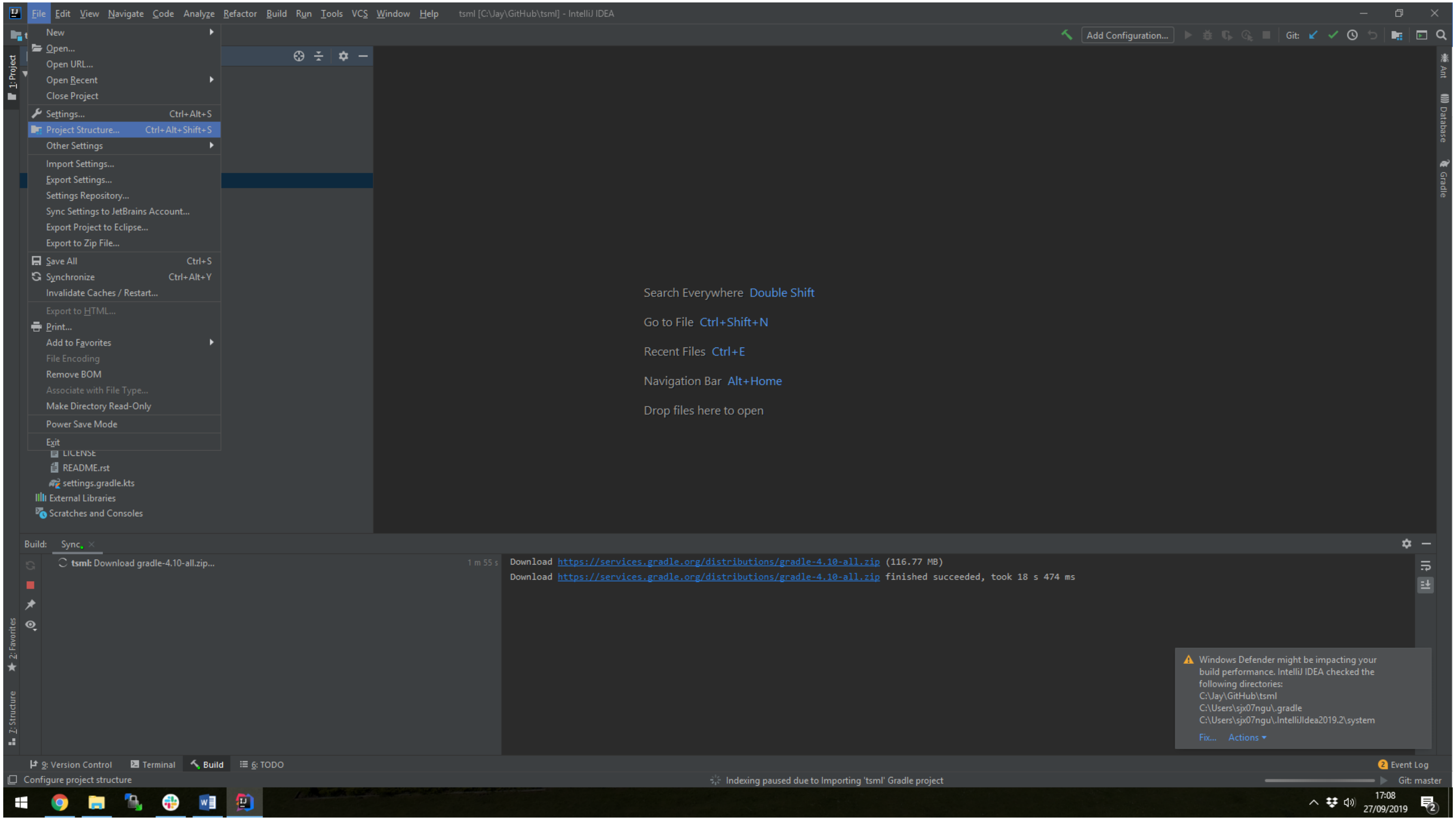
```
Download https://services.gradle.org/distributions/gradle-4.10-all.zip (116.77 MB)
Download https://services.gradle.org/distributions/gradle-4.10-all.zip finished succeeded, took 18 s 474 ms
```

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
C:\Jay\GitHub\tsml
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system
Fix... Actions

Mark directory as a sources root

Indexing paused due to Importing 'tsml' Gradle project

Click File -> Project Structure



```
Download https://services.gradle.org/distributions/gradle-4.10-all.zip (116.77 MB)
Download https://services.gradle.org/distributions/gradle-4.10-all.zip finished succeeded, took 18 s 474 ms
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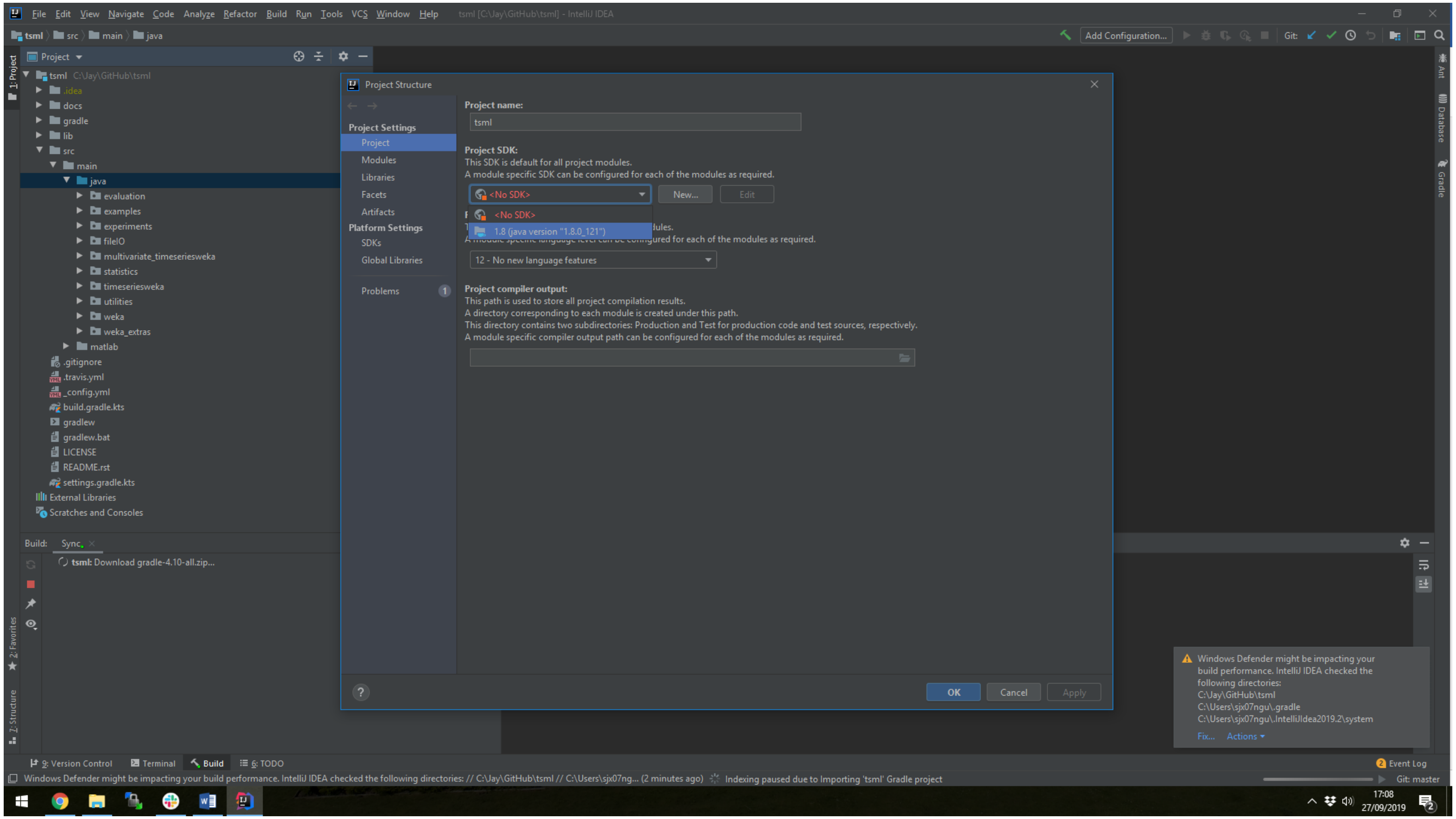
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system
Fix... Actions

Configure project structure

Indexing paused due to Importing 'tsml' Gradle project

Set SDK (if not already set)



tsml: Download gradle-4.10-all.zip...

Project name:

tsml

Project SDK:

This SDK is default for all project modules.

A module specific SDK can be configured for each of the modules as required.

<No SDK>

<No SDK>

1.8 (java version "1.8.0_121")

ules.

ured for each of the modules as required.

12 - No new language features

Project compiler output:

This path is used to store all project compilation results.

A directory corresponding to each module is created under this path.

This directory contains two subdirectories: Production and Test for production code and test sources, respectively.

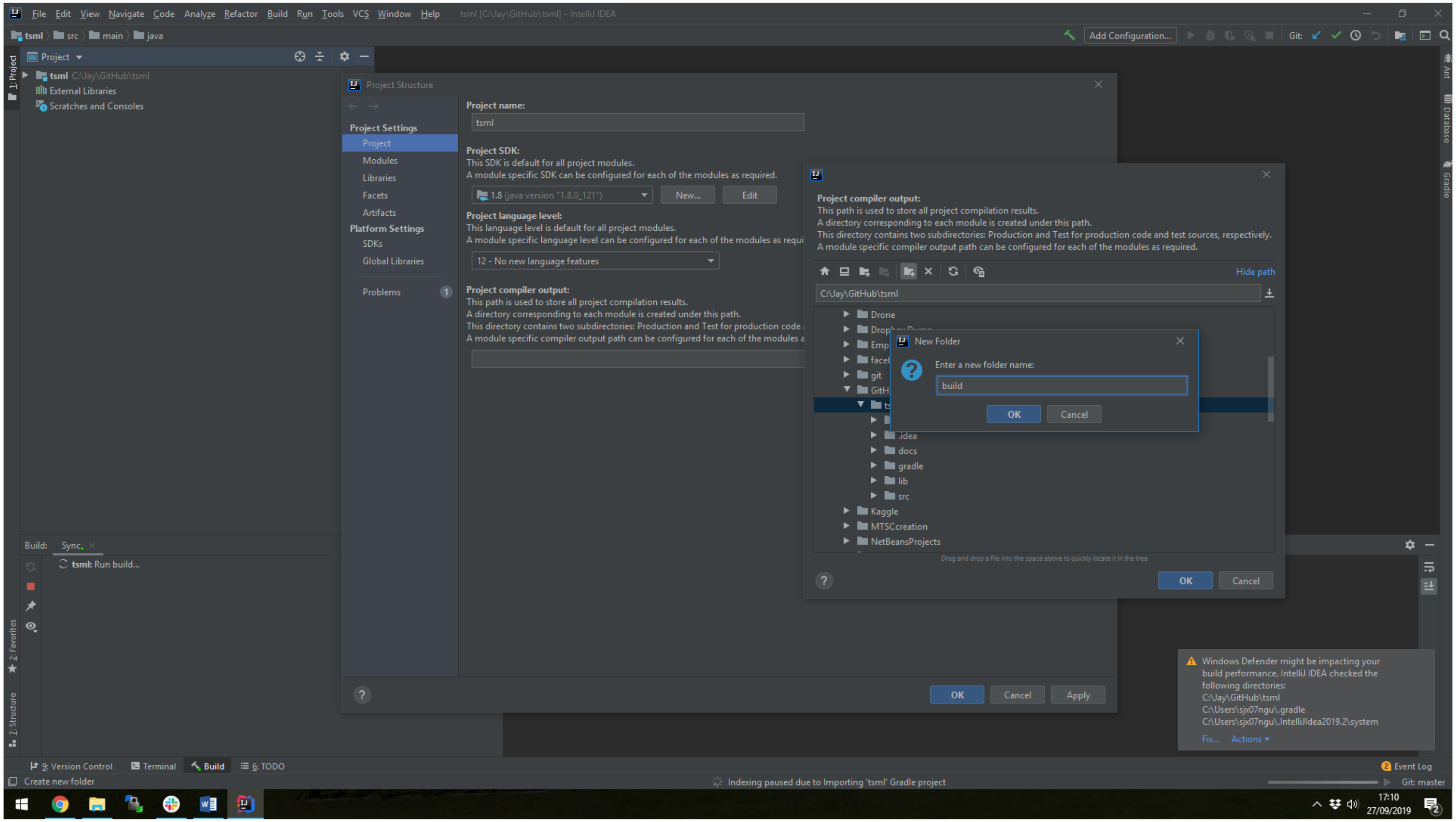
A module specific compiler output path can be configured for each of the modules as required.

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
C:\Jay\GitHub\tsml
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories: // C:\Jay\GitHub\tsml // C:\Users\sjx07ng... (2 minutes ago)

Indexing paused due to Importing 'tsml' Gradle project

Project Compiler Output - set location for compiled class files (this example creates a folder called build to mirror NetBeans)



Project name: tsml

Project SDK:
This SDK is default for all project modules.
A module specific SDK can be configured for each of the modules as required.
1.8 (java version "1.8.0_121")

Project language level:
This language level is default for all project modules.
A module specific language level can be configured for each of the modules as requi
12 - No new language features

Project compiler output:
This path is used to store all project compilation results.
A directory corresponding to each module is created under this path.
This directory contains two subdirectories: Production and Test for production code and test sources, respectively.
A module specific compiler output path can be configured for each of the modules as required.

C:\Jay\GitHub\tsml

Enter a new folder name: build

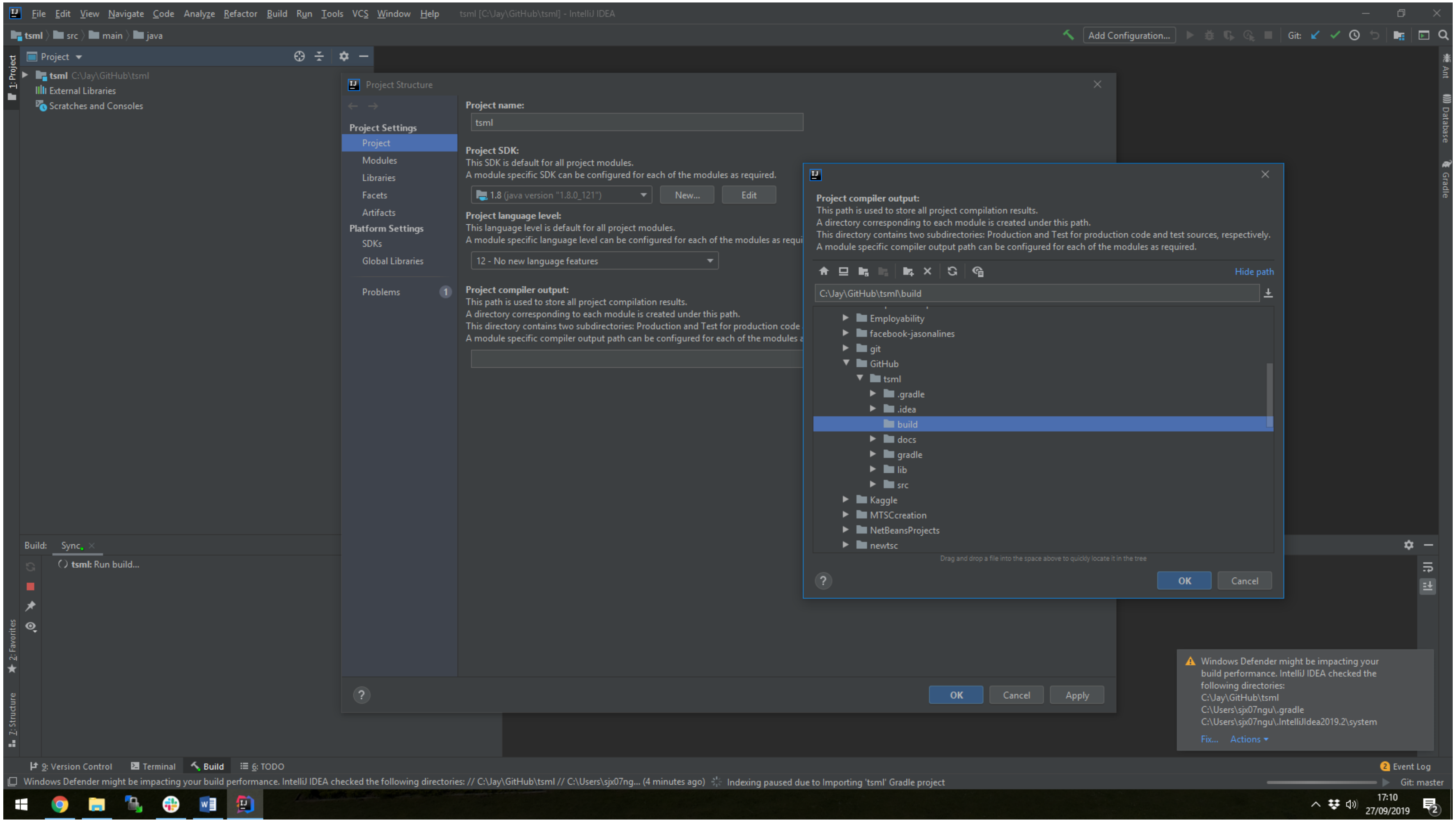
tsml: Run build...

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
C:\Jay\GitHub\tsml
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system

Create new folder

Indexing paused due to Importing 'tsml' Gradle project

Confirm compiler output folder (build in this example)



File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

tsml [C:\Jay\GitHub\tsml] - IntelliJ IDEA

Project Structure

Project name:

tsml

Project SDK:
This SDK is default for all project modules.
A module specific SDK can be configured for each of the modules as required.

1.8 (java version "1.8.0_121")

Project language level:
This language level is default for all project modules.
A module specific language level can be configured for each of the modules as requi

12 - No new language features

Project compiler output:
This path is used to store all project compilation results.
A directory corresponding to each module is created under this path.
This directory contains two subdirectories: Production and Test for production code
A module specific compiler output path can be configured for each of the modules a

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A directory corresponding to each module is created under this path.
This directory contains two subdirectories: Production and Test for production code and test sources, respectively.
A module specific compiler output path can be configured for each of the modules as required.

C:\Jay\GitHub\tsml\build

```
▶ Employability
▶ facebook-jasonalines
▶ git
▼ GitHub
  ▼ tsml
    ▶ .gradle
    ▶ .idea
      build
    ▶ docs
    ▶ gradle
    ▶ lib
    ▶ src
▶ Kaggle
▶ MTSCcreation
▶ NetBeansProjects
▶ newtsc
```

Drag and drop a file into the space above to quickly locate it in the tree

Build: Sync

tsml: Run build...

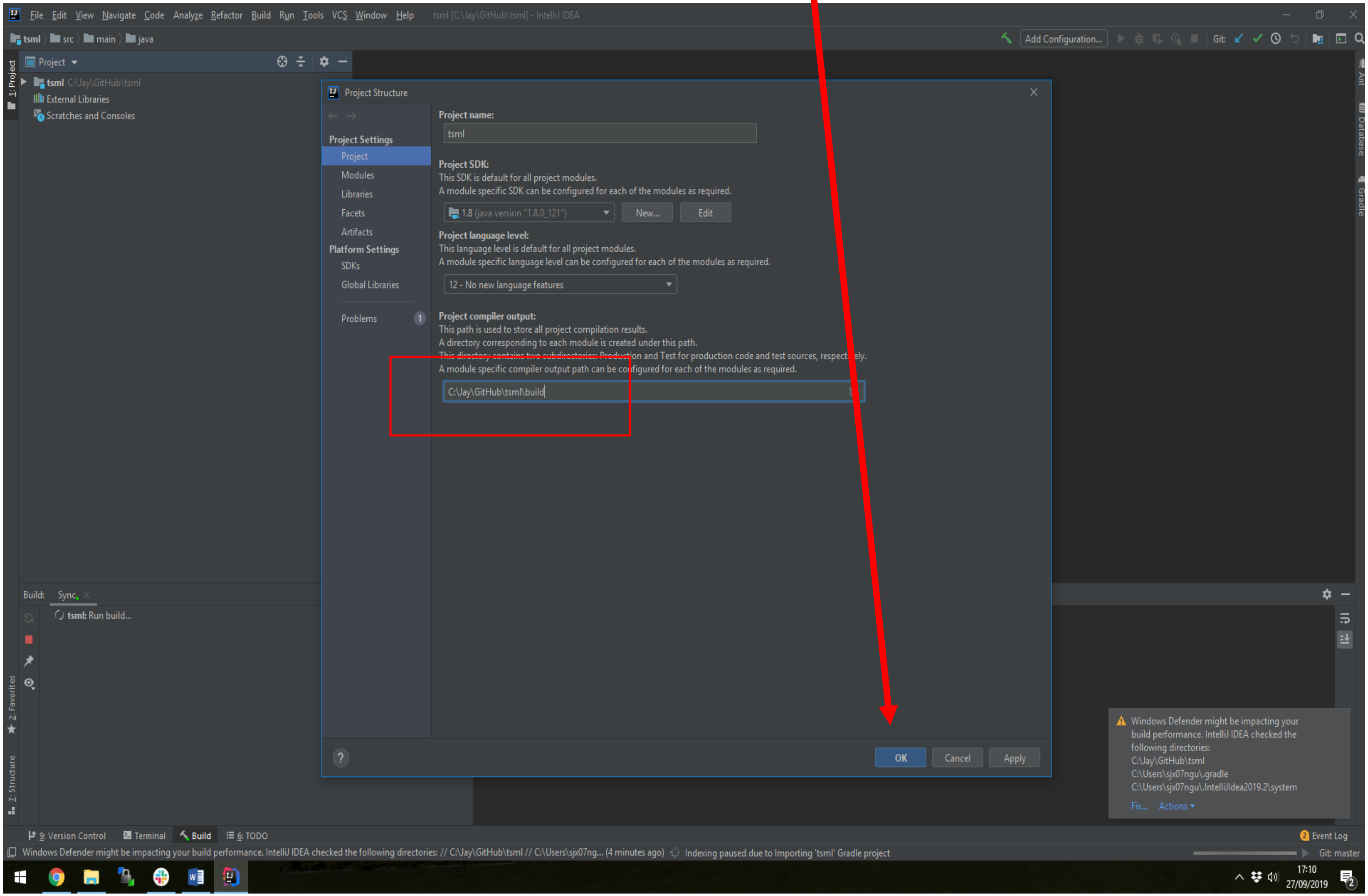
Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
C:\Jay\GitHub\tsml
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories: // C:\Jay\GitHub\tsml // C:\Users\sjx07ng... (4 minutes ago)   Indexing paused due to Importing 'tsml' Gradle project

Git: master

17:10
27/09/2019

Output location should be updated now. Press OK to confirm



Project name:

tsml

Project SDK:
This SDK is default for all project modules.
A module specific SDK can be configured for each of the modules as required.

1.8 (java version "1.8.0_121")

Project language level:
This language level is default for all project modules.
A module specific language level can be configured for each of the modules as required.

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Project compiler output:
This path is used to store all project compilation results.
A directory corresponding to each module is created under this path.
This directory contains two subdirectories: Production and Test for production code and test sources, respectively.
A module specific compiler output path can be configured for each of the modules as required.

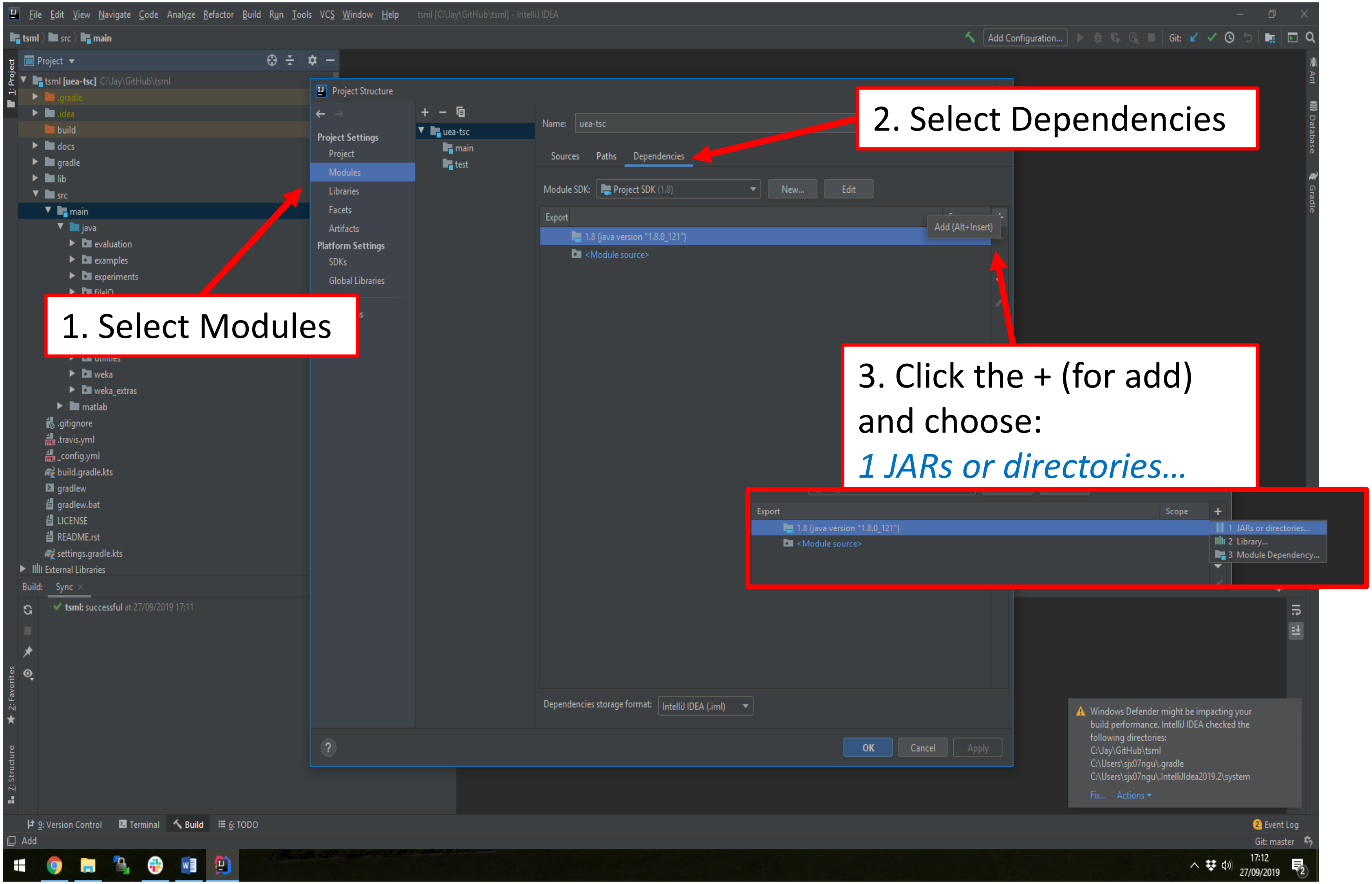
C:\Jay\GitHub\tsml\build

tsml: Run build...

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
C:\Jay\GitHub\tsml
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system
Fix... Actions

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories: // C:\Jay\GitHub\tsml // C:\Users\sjx07ng... (4 minutes ago) Indexing paused due to Importing 'tsml' Gradle project

Click File -> Project Structure again, this time going to the Modules tab



tsml: successful at 27/09/2019 17:11

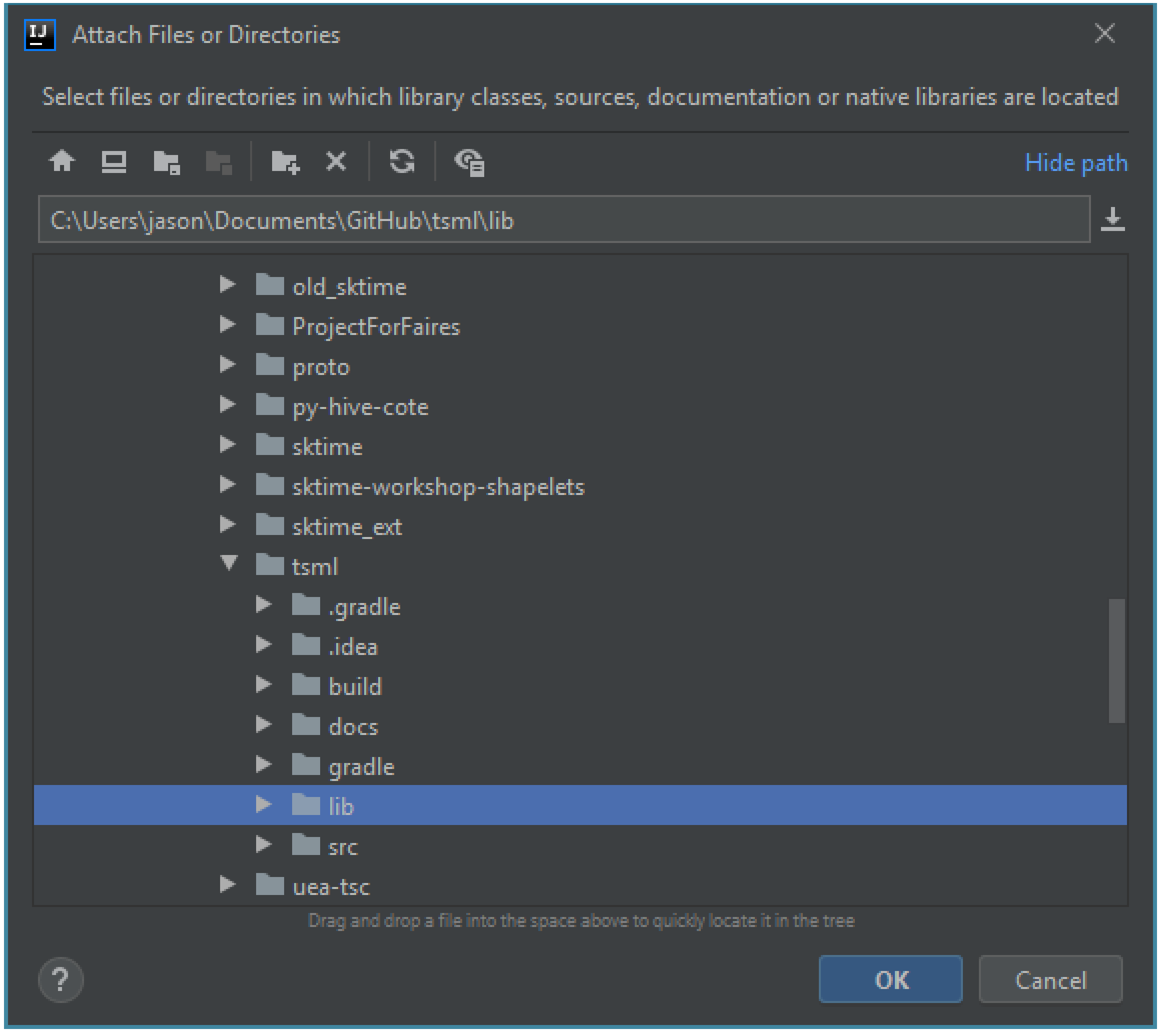
Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
C:\Jay\GitHub\tsml
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system
Fix... Actions

1. Select Modules

2. Select Dependencies

3. Click the + (for add) and choose:
1 JARs or directories…

Choose the lib folder from tsml and press OK



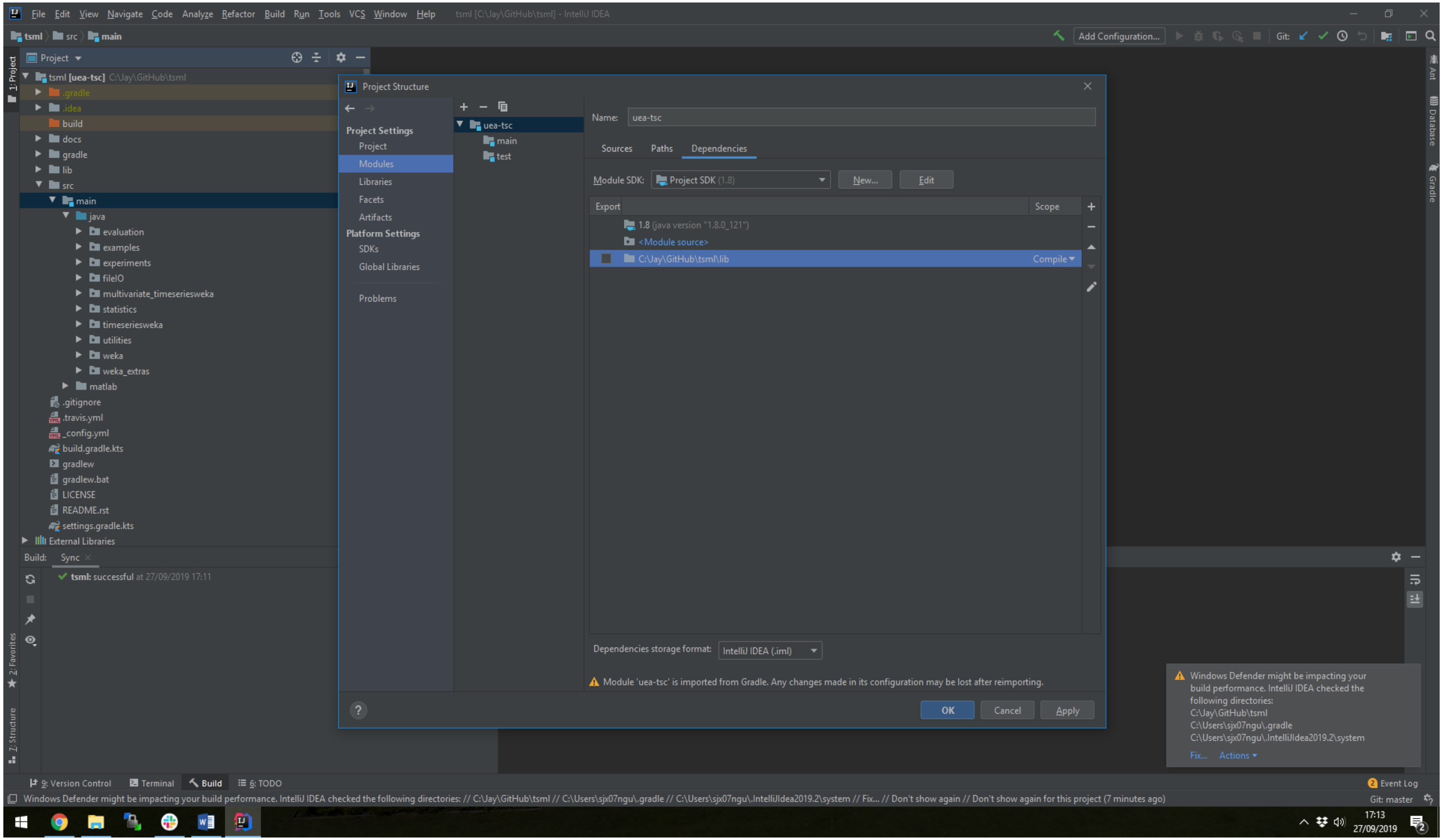
Attach Files or Directories

Select files or directories in which library classes, sources, documentation or native libraries are located

C:\Users\jason\Documents\GitHub\tsml\lib

Drag and drop a file into the space above to quickly locate it in the tree

Lib should now be added to the list:



tsml: successful at 27/09/2019 17:11

Name: uea-tsc

Module SDK: Project SDK (1.8)

Export		Scope
	1.8 (java version "1.8.0_121")	
	<Module source>	
□	C:\Jay\GitHub\tsml\lib	Compile

Dependencies storage format: IntelliJ IDEA (.iml)

Module 'uea-tsc' is imported from Gradle. Any changes made in its configuration may be lost after reimporting.

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
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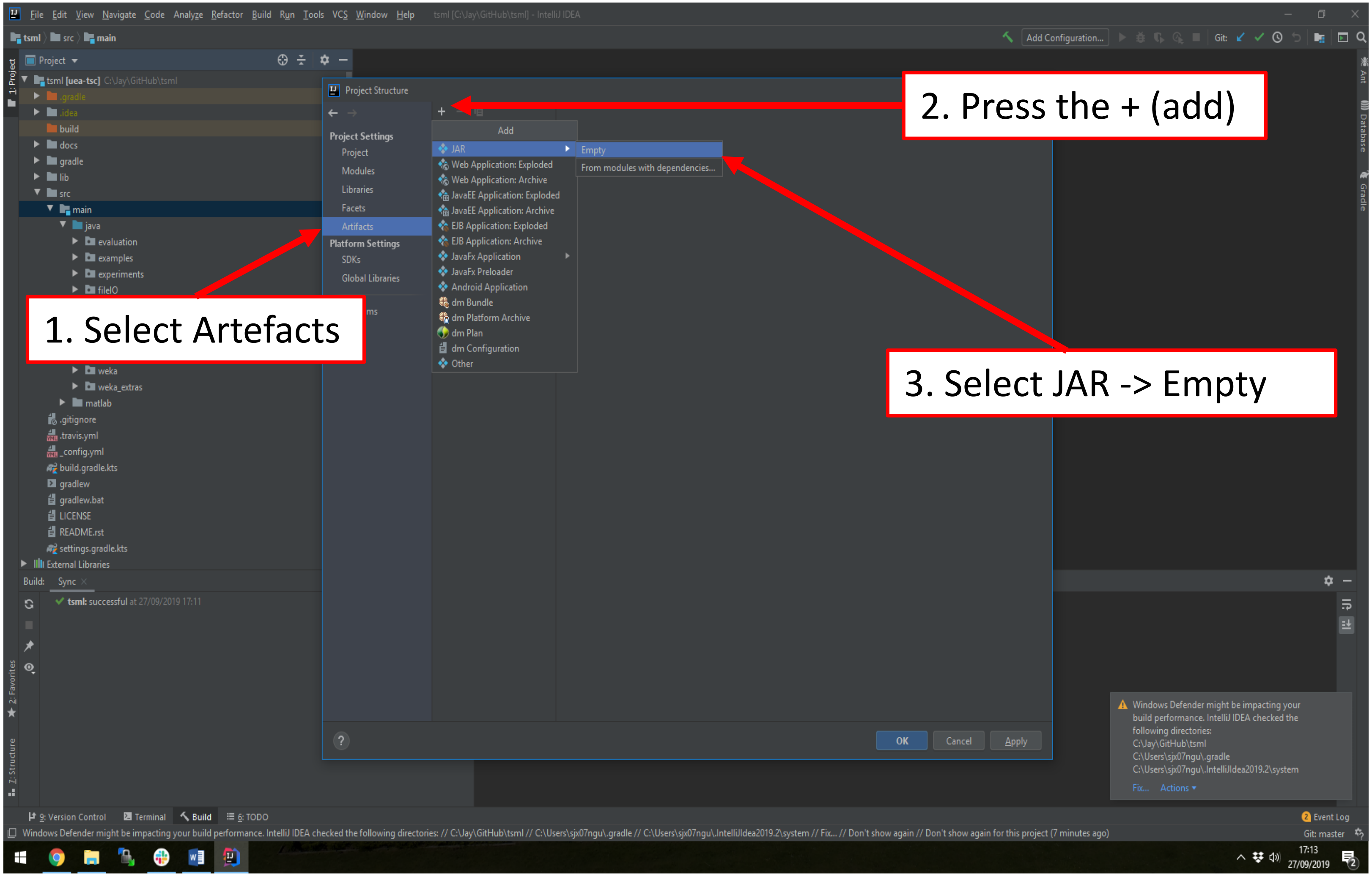
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system
Fix... Actions

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories: // C:\Jay\GitHub\tsml // C:\Users\sjx07ngu\.gradle // C:\Users\sjx07ngu\.IntelliJIdea2019.2\system // Fix... // Don't show again // Don't show again for this project (7 minutes ago)

Now change to the Artefacts tab



1. Select Artefacts

2. Press the + (add)

3. Select JAR -> Empty

tsml: successful at 27/09/2019 17:11

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
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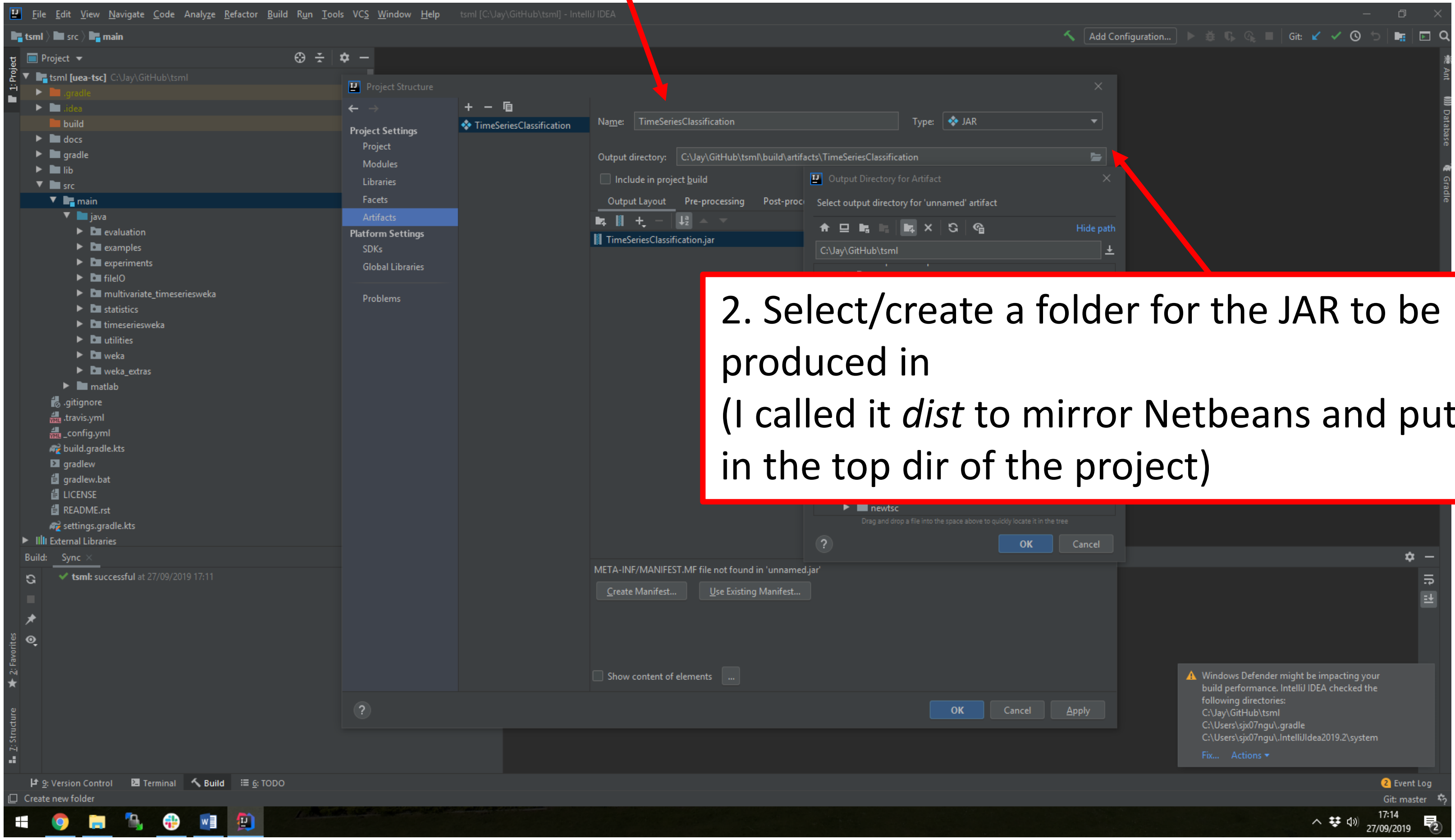
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system
Fix... Actions

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories: // C:\Jay\GitHub\tsml // C:\Users\sjx07ngu\.gradle // C:\Users\sjx07ngu\.IntelliJIdea2019.2\system // Fix... // Don't show again // Don't show again for this project (7 minutes ago)

17:13
27/09/2019

1. Rename what the output jar will be called
(I went with TimeSeriesClassification.com)



Project Structure

Name: TimeSeriesClassification

Type: JAR

Output directory: C:\Jay\GitHub\tsml\build\artifacts\TimeSeriesClassification

☐ Include in project build

TimeSeriesClassification.jar

Output Directory for Artifact

Select output directory for 'unnamed' artifact

C:\Jay\GitHub\tsml

Drag and drop a file into the space above to quickly locate it in the tree

META-INF/MANIFEST.MF file not found in 'unnamed.jar'

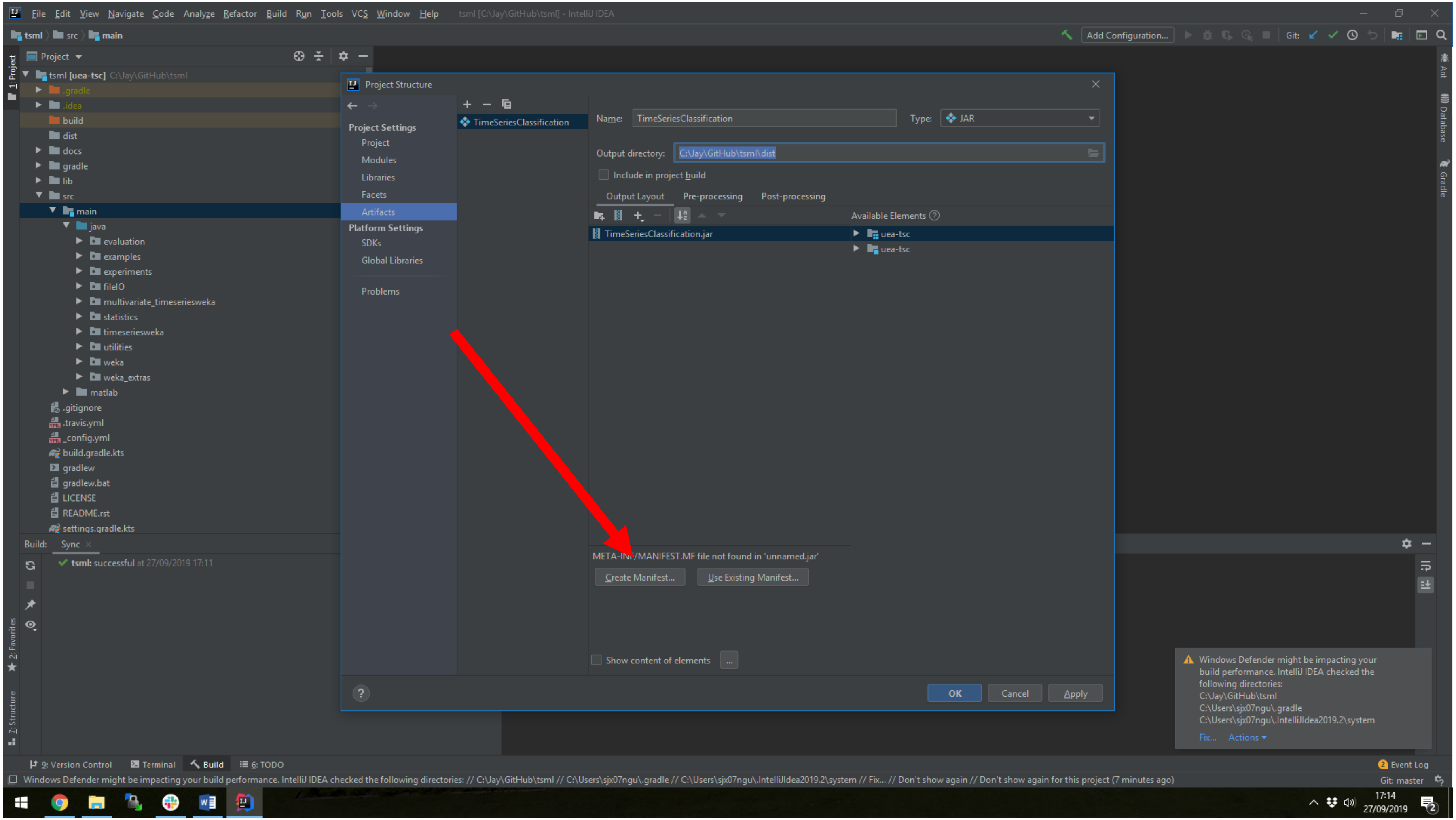
☐ Show content of elements

tsml: successful at 27/09/2019 17:11

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
C:\Jay\GitHub\tsml
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system

2. Select/create a folder for the JAR to be produced in
(I called it *dist* to mirror Netbeans and put it in the top dir of the project)

Now click *Create Manifest…*


tsml [C:\Jay\GitHub\tsml] - IntelliJ IDEA

Project Structure

Name: TimeSeriesClassification

Type: JAR

Output directory: C:\Jay\GitHub\tsml\dist

☐ Include in project build

TimeSeriesClassification.jar

META-INF/MANIFEST.MF file not found in 'unnamed.jar'

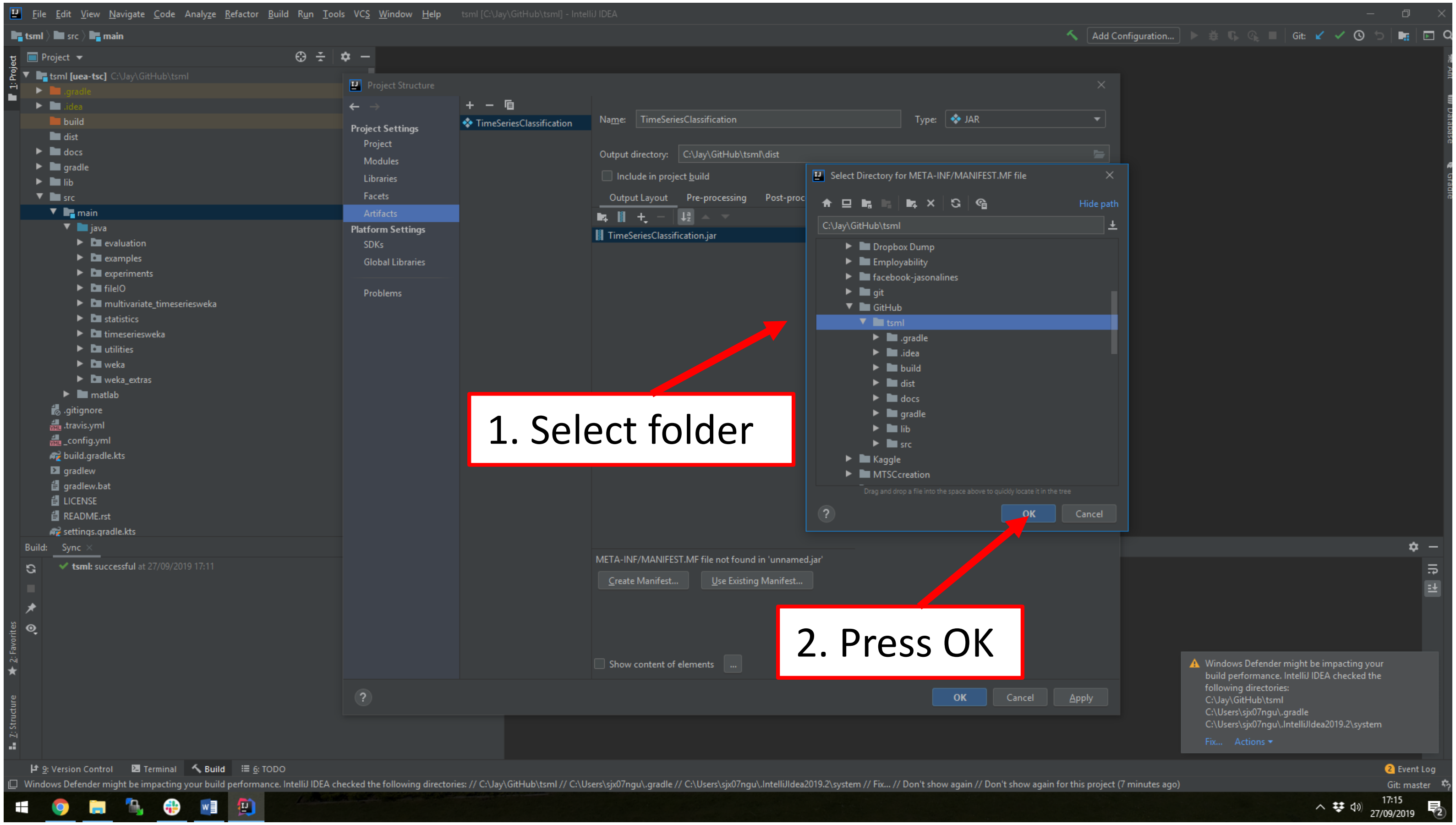
☐ Show content of elements

tsml: successful at 27/09/2019 17:11

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
C:\Jay\GitHub\tsml
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories: // C:\Jay\GitHub\tsml // C:\Users\sjx07ngu\.gradle // C:\Users\sjx07ngu\.IntelliJIdea2019.2\system // Fix... // Don't show again // Don't show again for this project (7 minutes ago)

Select where the manifest should go (I put it in the top directory to mirror Netbeans)



Name: TimeSeriesClassification

Type: JAR

Output directory: C:\Jay\GitHub\tsml\dist

□ Include in project build

Select Directory for META-INF/MANIFEST.MF file

C:\Jay\GitHub\tsml

META-INF/MANIFEST.MF file not found in 'unnamed.jar'

□ Show content of elements

Build: Sync

✓ tsml: successful at 27/09/2019 17:11

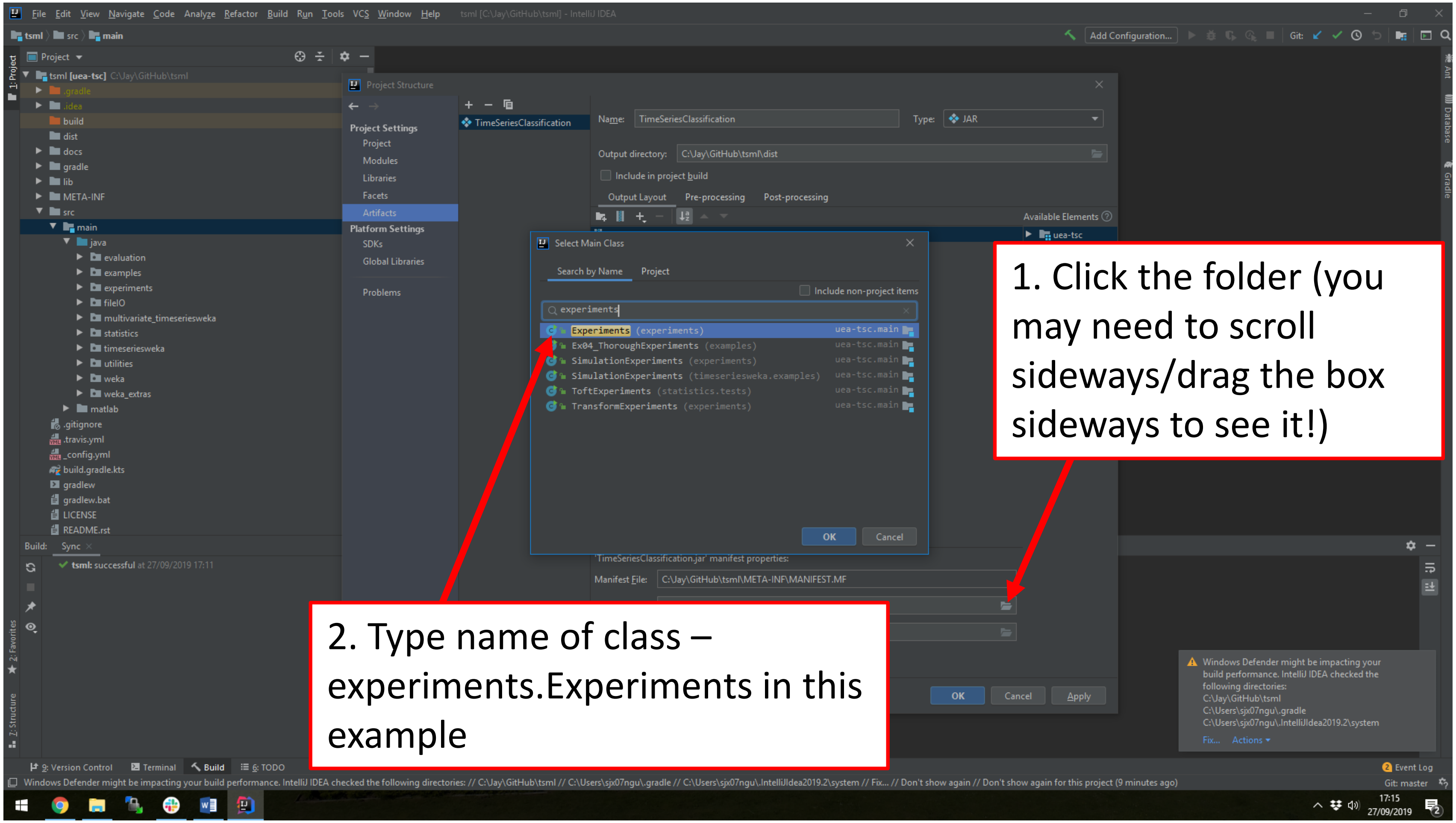
Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
C:\Jay\GitHub\tsml
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories: // C:\Jay\GitHub\tsml // C:\Users\sjx07ngu\.gradle // C:\Users\sjx07ngu\.IntelliJIdea2019.2\system // Fix... // Don't show again // Don't show again for this project (7 minutes ago)

1. Select folder

2. Press OK

Now set main class:



Name: TimeSeriesClassification

Type: JAR

Output directory: C:\Jay\GitHub\tsml\dist

☐ Include in project build

☐ Include non-project items

experiments

```
Experiments (experiments)                                    uea-tsc.main
Ex04_ThoroughExperiments (examples)                          uea-tsc.main
SimulationExperiments (experiments)                          uea-tsc.main
SimulationExperiments (timeseriesweka.examples)              uea-tsc.main
ToftExperiments (statistics.tests)                           uea-tsc.main
TransformExperiments (experiments)                           uea-tsc.main
```

'TimeSeriesClassification.jar' manifest properties:

Manifest File: C:\Jay\GitHub\tsml\META-INF\MANIFEST.MF

tsml: successful at 27/09/2019 17:11

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
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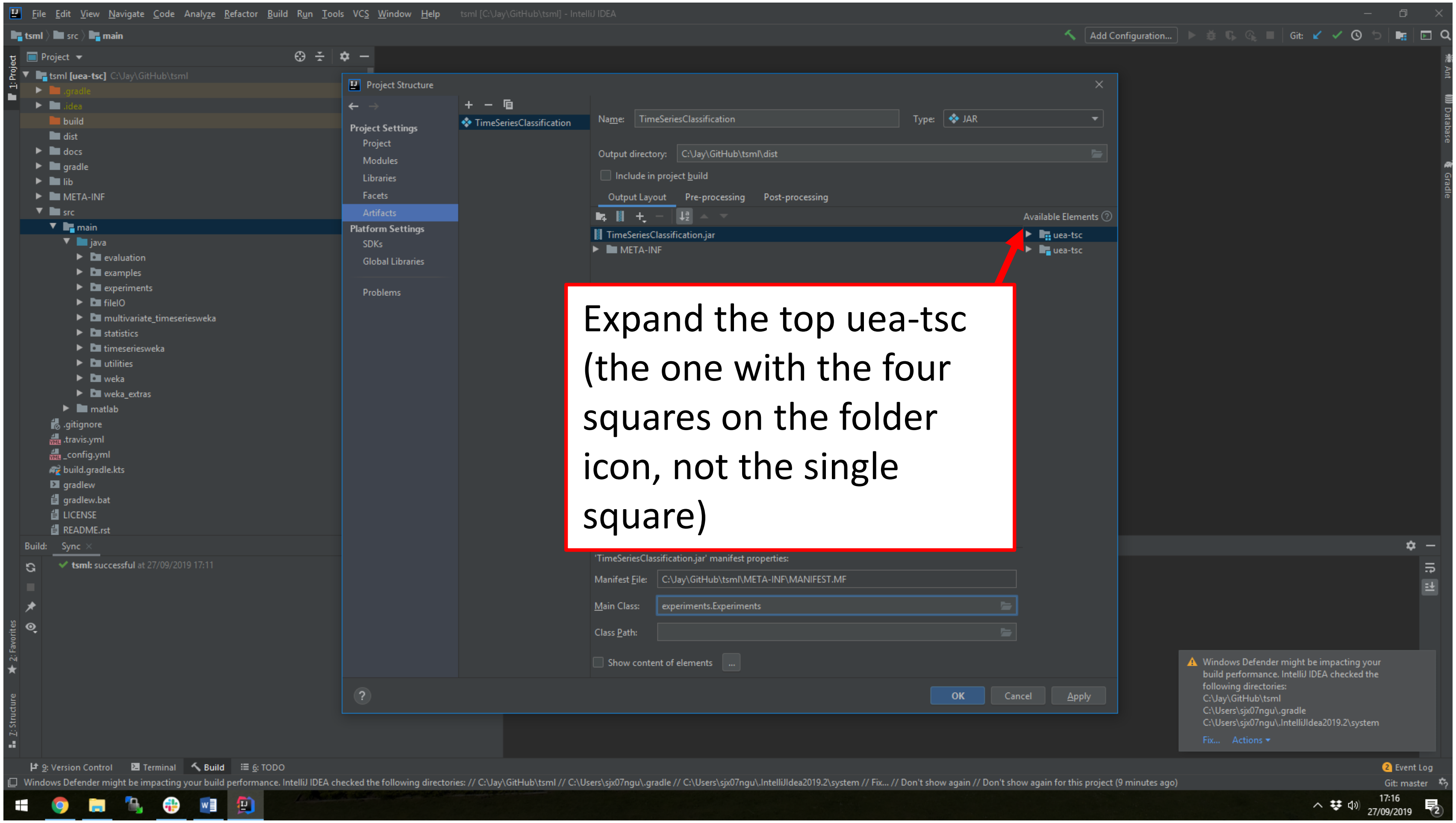
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories: // C:\Jay\GitHub\tsml // C:\Users\sjx07ngu\.gradle // C:\Users\sjx07ngu\.IntelliJIdea2019.2\system // Fix... // Don't show again // Don't show again for this project (9 minutes ago)

1. Click the folder (you may need to scroll sideways/drag the box sideways to see it!)

2. Type name of class – experiments.Experiments in this example

Next we need to look at the Available Elements column (again, you may need to resize if necessary)



Expand the top uea-tsc (the one with the four squares on the folder icon, not the single square)

Name: TimeSeriesClassification

Type: JAR

Output directory: C:\Jay\GitHub\tsml\dist

□ Include in project build

'TimeSeriesClassification.jar' manifest properties:

Manifest File: C:\Jay\GitHub\tsml\META-INF\MANIFEST.MF

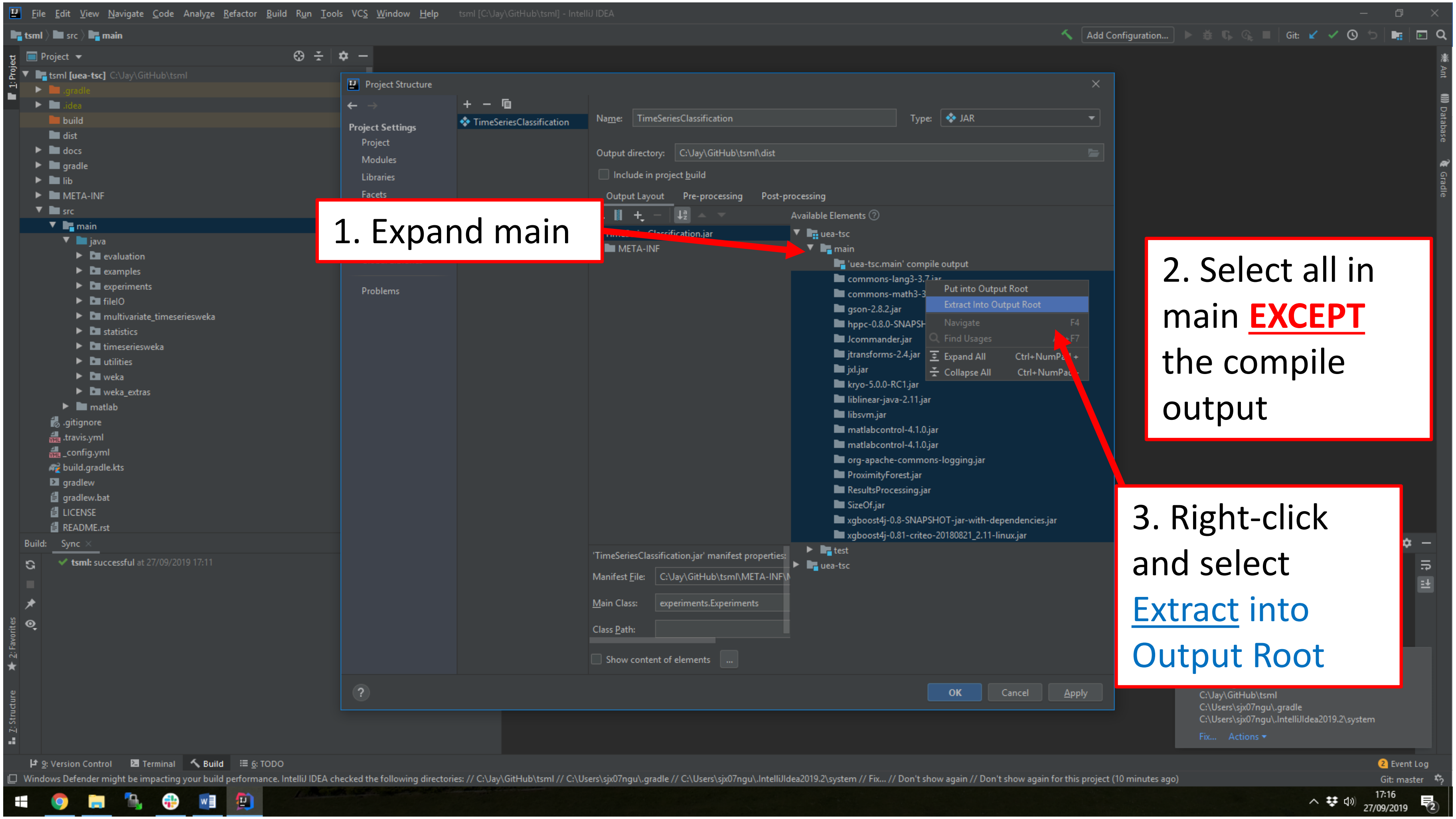
Main Class: experiments.Experiments

Class Path:

□ Show content of elements

tsml: successful at 27/09/2019 17:11

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
C:\Jay\GitHub\tsml
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system



Name: TimeSeriesClassification

Type: JAR

Output directory: C:\Jay\GitHub\tsml\dist

☐ Include in project build

'TimeSeriesClassification.jar' manifest properties:

Manifest File: C:\Jay\GitHub\tsml\META-INF\

Main Class: experiments.Experiments

Class Path:

☐ Show content of elements

tsml: successful at 27/09/2019 17:11

C:\Jay\GitHub\tsml
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system
Fix... Actions

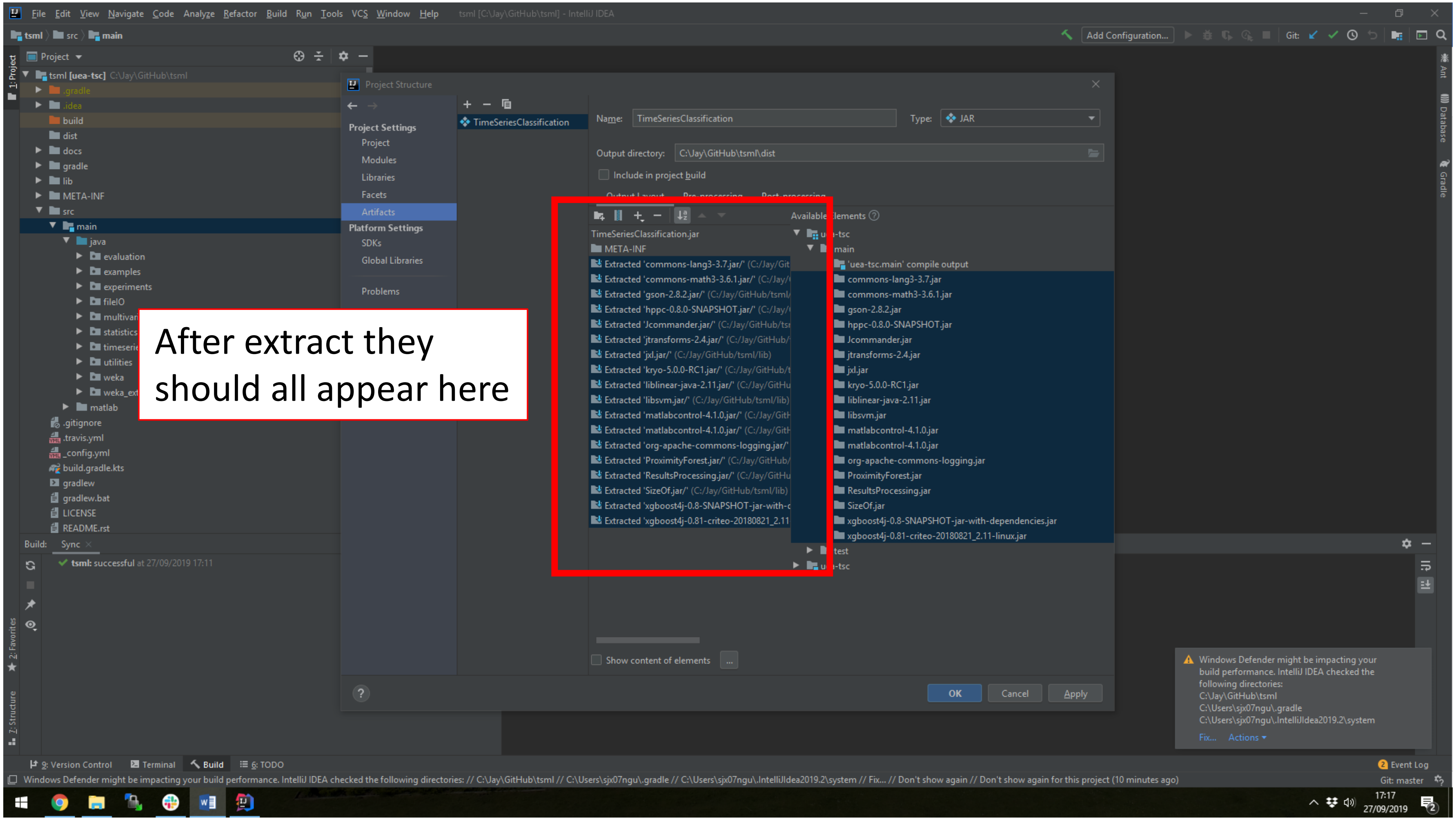
Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories: // C:\Jay\GitHub\tsml // C:\Users\sjx07ngu\.gradle // C:\Users\sjx07ngu\.IntelliJIdea2019.2\system // Fix... // Don't show again // Don't show again for this project (10 minutes ago)

1. Expand main

2. Select all in main **EXCEPT** the compile output

3. Right-click and select Extract into Output Root

* I believe this is because the .jars are all archives and require **extracting**. The compile output is not an archive however so we handle that slightly different in a couple of slides



After extract they should all appear here

Name: TimeSeriesClassification

Type: JAR

Output directory: C:\Jay\GitHub\tsml\dist

□ Include in project build

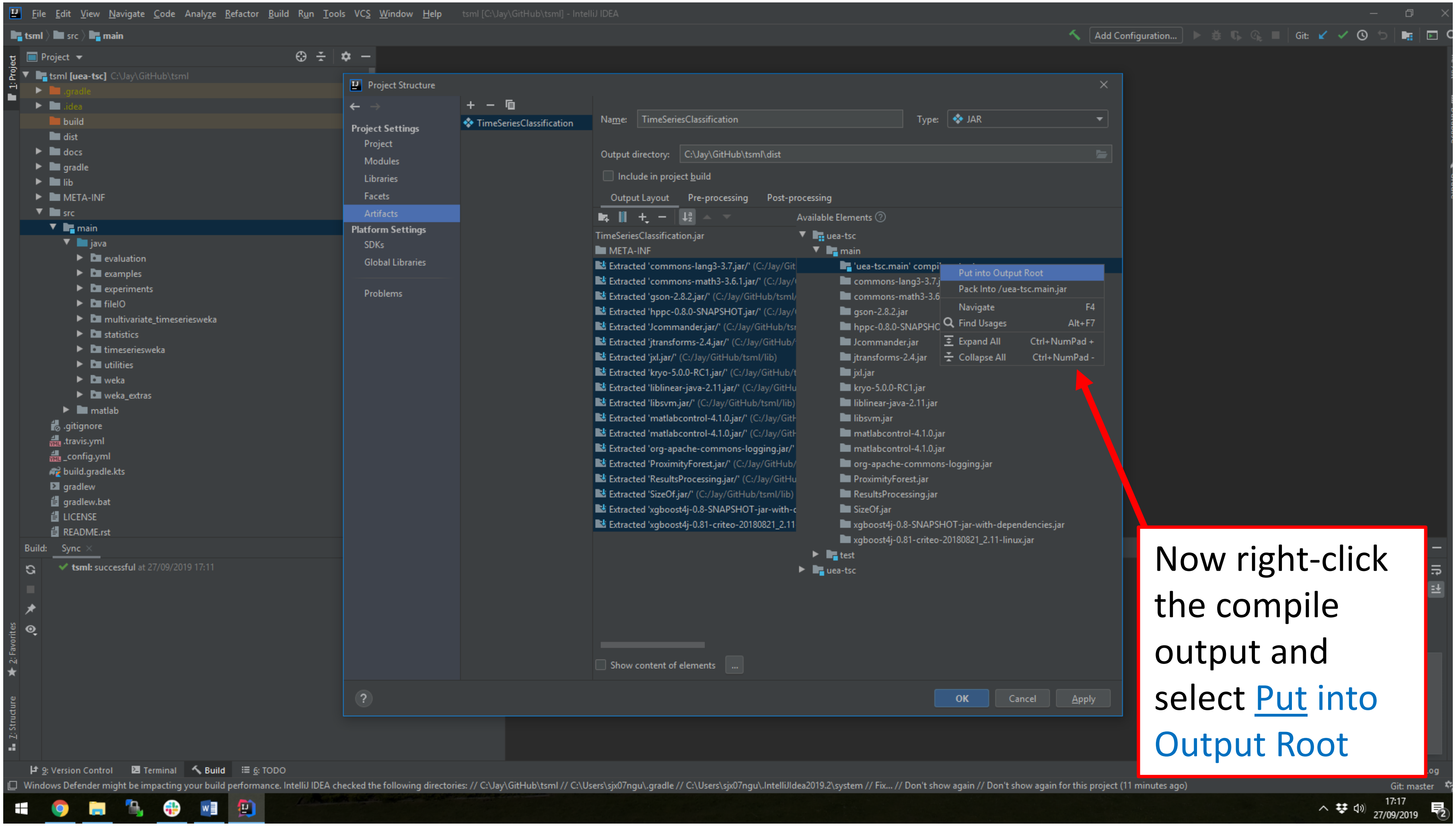
```
TimeSeriesClassification.jar
META-INF
Extracted 'commons-lang3-3.7.jar/' (C:/Jay/Git
Extracted 'commons-math3-3.6.1.jar/' (C:/Jay/
Extracted 'gson-2.8.2.jar/' (C:/Jay/GitHub/tsml/
Extracted 'hppc-0.8.0-SNAPSHOT.jar/' (C:/Jay/
Extracted 'Jcommander.jar/' (C:/Jay/GitHub/tsı
Extracted 'jtransforms-2.4.jar/' (C:/Jay/GitHub/
Extracted 'jxl.jar/' (C:/Jay/GitHub/tsml/lib)
Extracted 'kryo-5.0.0-RC1.jar/' (C:/Jay/GitHub/t
Extracted 'liblinear-java-2.11.jar/' (C:/Jay/GitHu
Extracted 'libsvm.jar/' (C:/Jay/GitHub/tsml/lib)
Extracted 'matlabcontrol-4.1.0.jar/' (C:/Jay/Git
Extracted 'matlabcontrol-4.1.0.jar/' (C:/Jay/Git
Extracted 'org-apache-commons-logging.jar/'
Extracted 'ProximityForest.jar/' (C:/Jay/GitHub/
Extracted 'ResultsProcessing.jar/' (C:/Jay/GitHu
Extracted 'SizeOf.jar/' (C:/Jay/GitHub/tsml/lib)
Extracted 'xgboost4j-0.8-SNAPSHOT-jar-with-c
Extracted 'xgboost4j-0.81-criteo-20180821_2.11
```

```
uea-tsc
  main
    'uea-tsc.main' compile output
    commons-lang3-3.7.jar
    commons-math3-3.6.1.jar
    gson-2.8.2.jar
    hppc-0.8.0-SNAPSHOT.jar
    Jcommander.jar
    jtransforms-2.4.jar
    jxl.jar
    kryo-5.0.0-RC1.jar
    liblinear-java-2.11.jar
    libsvm.jar
    matlabcontrol-4.1.0.jar
    matlabcontrol-4.1.0.jar
    org-apache-commons-logging.jar
    ProximityForest.jar
    ResultsProcessing.jar
    SizeOf.jar
    xgboost4j-0.8-SNAPSHOT-jar-with-dependencies.jar
    xgboost4j-0.81-criteo-20180821_2.11-linux.jar
  test
uea-tsc
```

tsml: successful at 27/09/2019 17:11

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
C:\Jay\GitHub\tsml
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system
Fix... Actions

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories: // C:\Jay\GitHub\tsml // C:\Users\sjx07ngu\.gradle // C:\Users\sjx07ngu\.IntelliJIdea2019.2\system // Fix... // Don't show again // Don't show again for this project (10 minutes ago)



Name: TimeSeriesClassification

Type: JAR

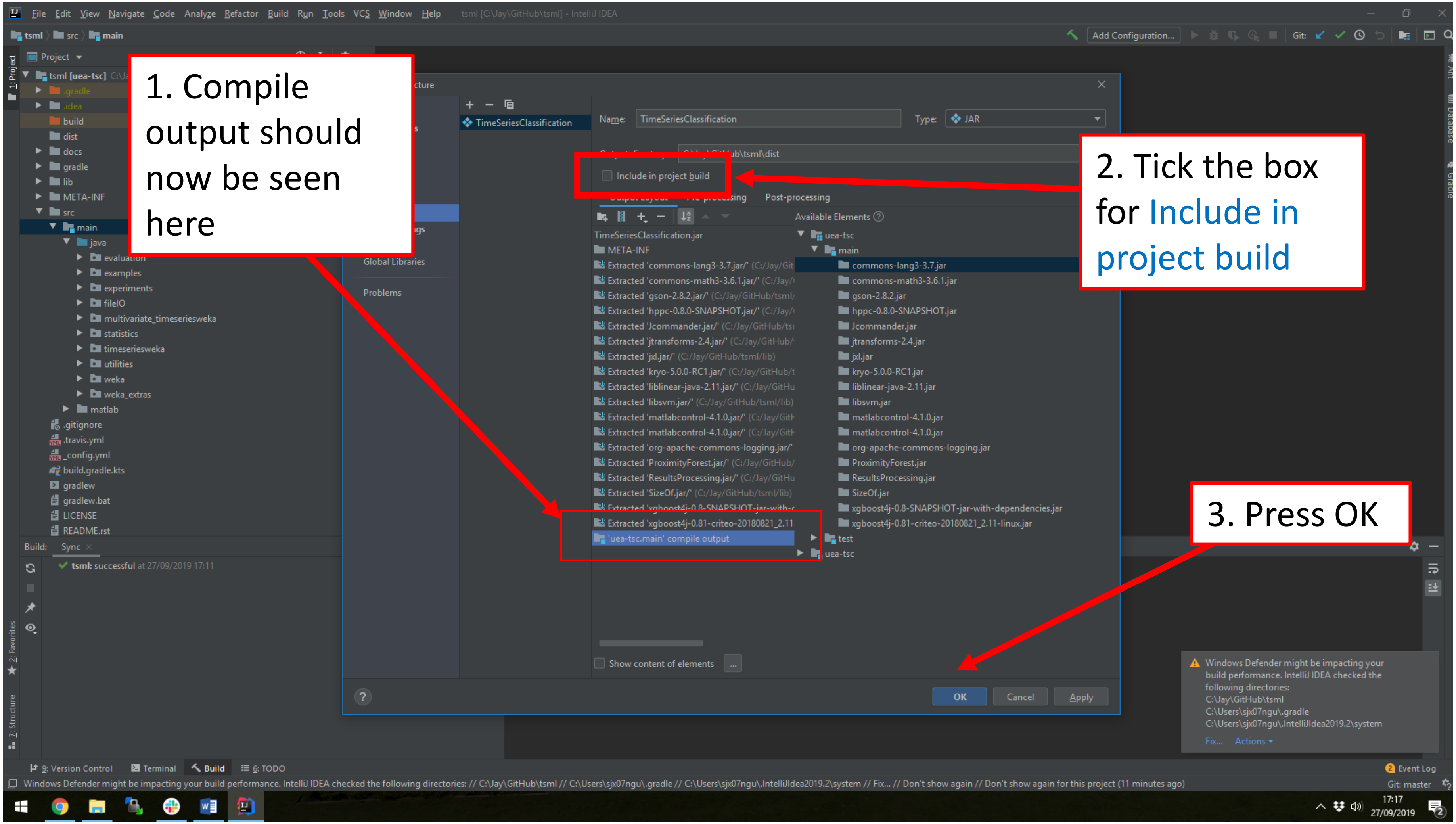
Output directory: C:\Jay\GitHub\tsml\dist

☐ Include in project build

tsml: successful at 27/09/2019 17:11

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories: // C:\Jay\GitHub\tsml // C:\Users\sjx07ngu\.gradle // C:\Users\sjx07ngu\.IntelliJIdea2019.2\system // Fix... // Don't show again // Don't show again for this project (11 minutes ago)

Now right-click the compile output and select Put into Output Root



1. Compile output should now be seen here

2. Tick the box for Include in project build

3. Press OK

Name: TimeSeriesClassification

Type: JAR

Output directory: C:\...ub\tsml\dist

☐ Include in project build

```
TimeSeriesClassification.jar
  META-INF
  Extracted 'commons-lang3-3.7.jar/' (C:/Jay/Git
  Extracted 'commons-math3-3.6.1.jar/' (C:/Jay/
  Extracted 'gson-2.8.2.jar/' (C:/Jay/GitHub/tsml/
  Extracted 'hppc-0.8.0-SNAPSHOT.jar/' (C:/Jay/
  Extracted 'Jcommander.jar/' (C:/Jay/GitHub/tsr
  Extracted 'jtransforms-2.4.jar/' (C:/Jay/GitHub/
  Extracted 'jxl.jar/' (C:/Jay/GitHub/tsml/lib)
  Extracted 'kryo-5.0.0-RC1.jar/' (C:/Jay/GitHub/t
  Extracted 'liblinear-java-2.11.jar/' (C:/Jay/GitHu
  Extracted 'libsvm.jar/' (C:/Jay/GitHub/tsml/lib)
  Extracted 'matlabcontrol-4.1.0.jar/' (C:/Jay/Git
  Extracted 'matlabcontrol-4.1.0.jar/' (C:/Jay/Git
  Extracted 'org-apache-commons-logging.jar/'
  Extracted 'ProximityForest.jar/' (C:/Jay/GitHub/
  Extracted 'ResultsProcessing.jar/' (C:/Jay/GitHu
  Extracted 'SizeOf.jar/' (C:/Jay/GitHub/tsml/lib)
  Extracted 'xgboost4j-0.8-SNAPSHOT-jar-with-c
  Extracted 'xgboost4j-0.81-criteo-20180821_2.11
  'uea-tsc.main' compile output
```

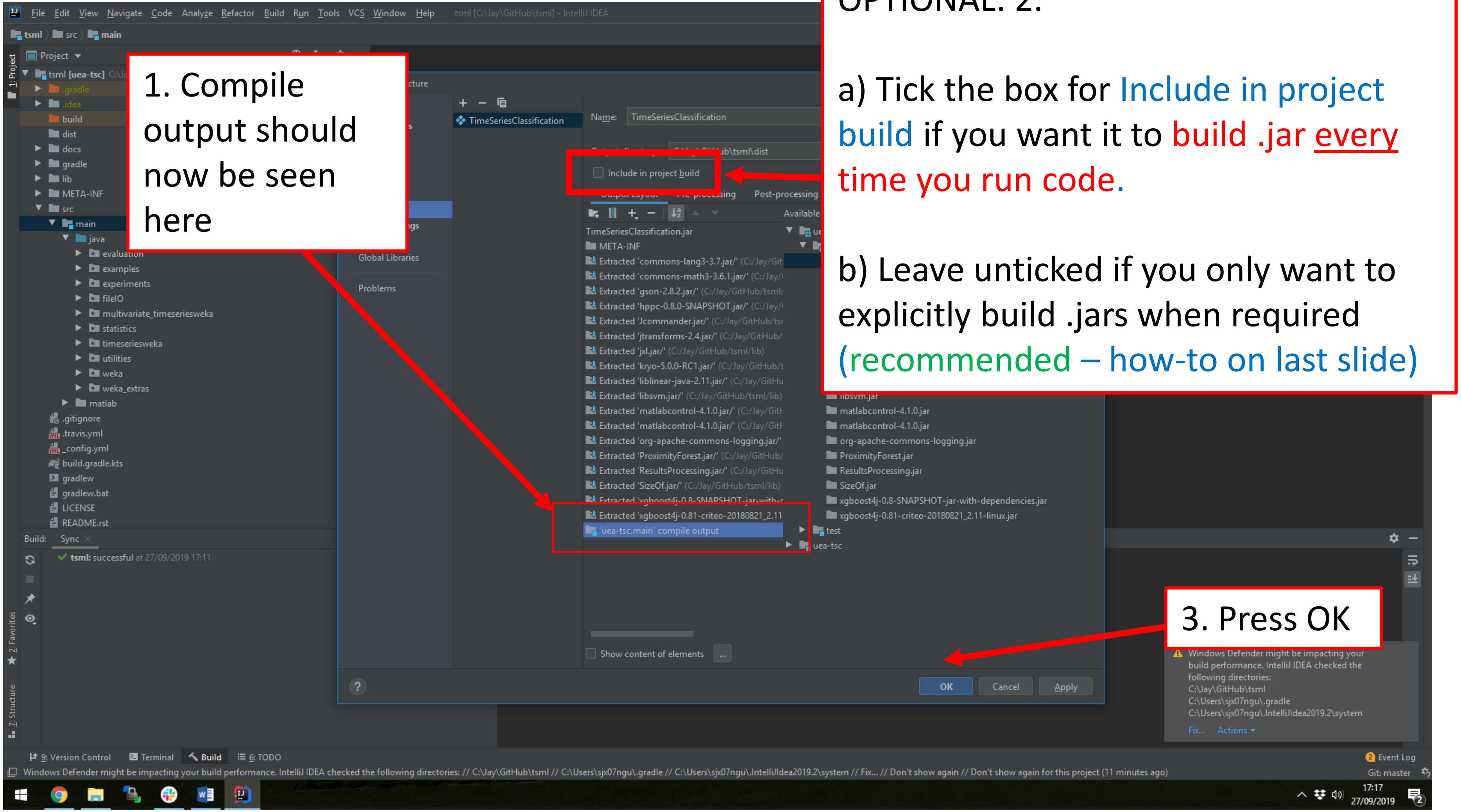
```
uea-tsc
  main
    commons-lang3-3.7.jar
    commons-math3-3.6.1.jar
    gson-2.8.2.jar
    hppc-0.8.0-SNAPSHOT.jar
    Jcommander.jar
    jtransforms-2.4.jar
    jxl.jar
    kryo-5.0.0-RC1.jar
    liblinear-java-2.11.jar
    libsvm.jar
    matlabcontrol-4.1.0.jar
    matlabcontrol-4.1.0.jar
    org-apache-commons-logging.jar
    ProximityForest.jar
    ResultsProcessing.jar
    SizeOf.jar
    xgboost4j-0.8-SNAPSHOT-jar-with-dependencies.jar
    xgboost4j-0.81-criteo-20180821_2.11-linux.jar
  test
uea-tsc
```

```
Build: Sync
tsml: successful at 27/09/2019 17:11
```

```
Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
C:\Jay\GitHub\tsml
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system
Fix...  Actions
```

```
Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories: // C:\Jay\GitHub\tsml // C:\Users\sjx07ngu\.gradle // C:\Users\sjx07ngu\.IntelliJIdea2019.2\system // Fix... // Don't show again // Don't show again for this project (11 minutes ago)
```

17:17
27/09/2019



Name: TimeSeriesClassification

Output directory: C:\Jay\GitHub\tsml\dist

□ Include in project build

```
TimeSeriesClassification.jar
META-INF
Extracted 'commons-lang3-3.7.jar/' (C:/Jay/Git
Extracted 'commons-math3-3.6.1.jar/' (C:/Jay/
Extracted 'gson-2.8.2.jar/' (C:/Jay/GitHub/tsml/
Extracted 'hppc-0.8.0-SNAPSHOT.jar/' (C:/Jay/
Extracted 'Jcommander.jar/' (C:/Jay/GitHub/tsr
Extracted 'jtransforms-2.4.jar/' (C:/Jay/GitHub/
Extracted 'jxl.jar/' (C:/Jay/GitHub/tsml/lib)
Extracted 'kryo-5.0.0-RC1.jar/' (C:/Jay/GitHub/t
Extracted 'liblinear-java-2.11.jar/' (C:/Jay/GitHu
Extracted 'libsvm.jar/' (C:/Jay/GitHub/tsml/lib)
Extracted 'matlabcontrol-4.1.0.jar/' (C:/Jay/Gith
Extracted 'matlabcontrol-4.1.0.jar/' (C:/Jay/Gith
Extracted 'org-apache-commons-logging.jar/'
Extracted 'ProximityForest.jar/' (C:/Jay/GitHub/
Extracted 'ResultsProcessing.jar/' (C:/Jay/GitHu
Extracted 'SizeOf.jar/' (C:/Jay/GitHub/tsml/lib)
Extracted 'xgboost4j-0.8-SNAPSHOT-jar-with-c
Extracted 'xgboost4j-0.81-criteo-20180821_2.11
'uea-tsc.main' compile output
```

```
libsvm.jar
matlabcontrol-4.1.0.jar
matlabcontrol-4.1.0.jar
org-apache-commons-logging.jar
ProximityForest.jar
ResultsProcessing.jar
SizeOf.jar
xgboost4j-0.8-SNAPSHOT-jar-with-dependencies.jar
xgboost4j-0.81-criteo-20180821_2.11-linux.jar
test
uea-tsc
```

```
Build: Sync
tsml: successful at 27/09/2019 17:11
```

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
C:\Jay\GitHub\tsml
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system
Fix... Actions

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories: // C:\Jay\GitHub\tsml // C:\Users\sjx07ngu\.gradle // C:\Users\sjx07ngu\.IntelliJIdea2019.2\system // Fix... // Don't show again // Don't show again for this project (11 minutes ago)

17:17
27/09/2019

1. Compile output should now be seen here

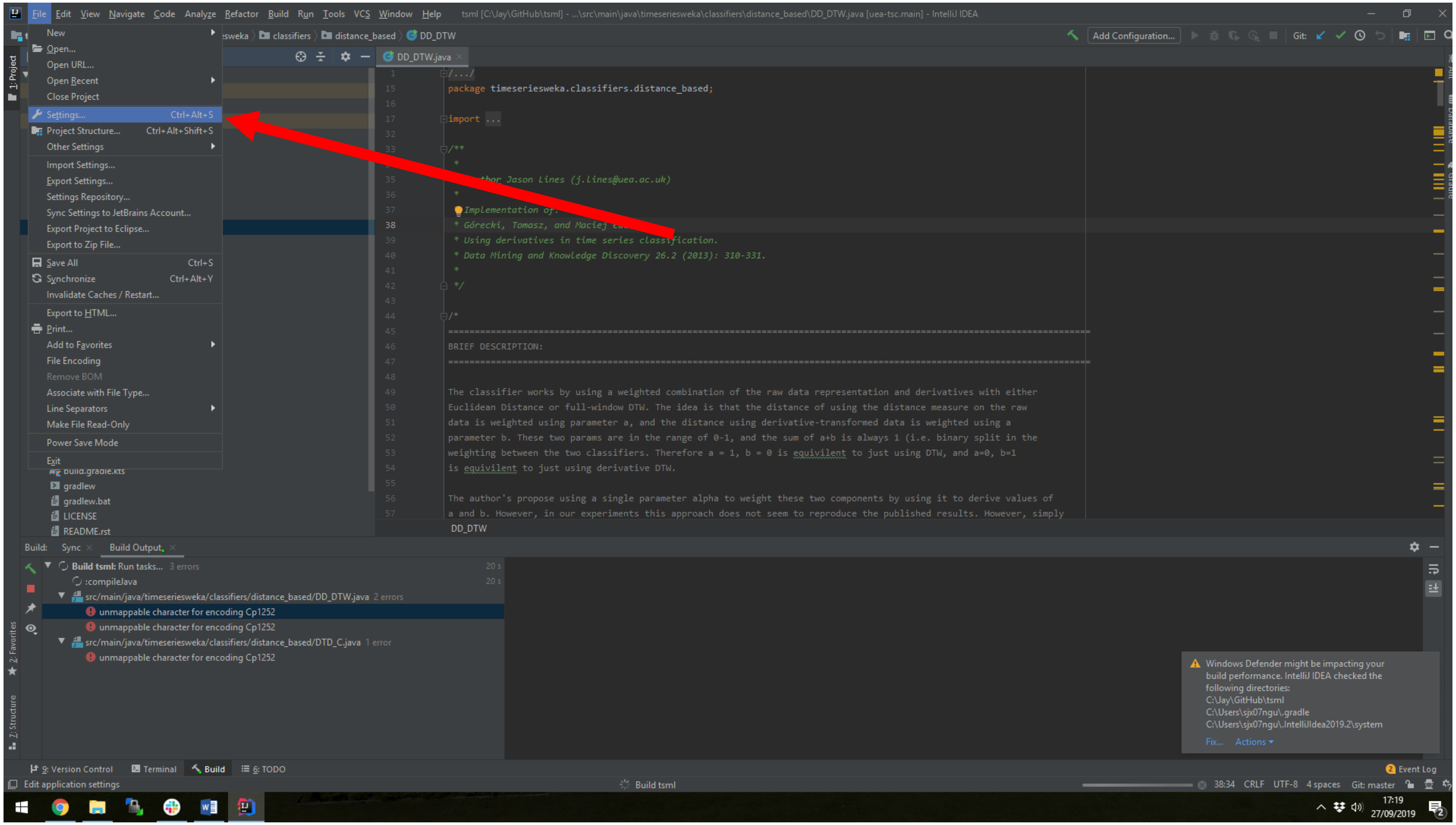
OPTIONAL: 2.

a) Tick the box for Include in project build if you want it to build .jar every time you run code.

b) Leave unticked if you only want to explicitly build .jars when required (recommended – how-to on last slide)

3. Press OK

Click File -> Settings...

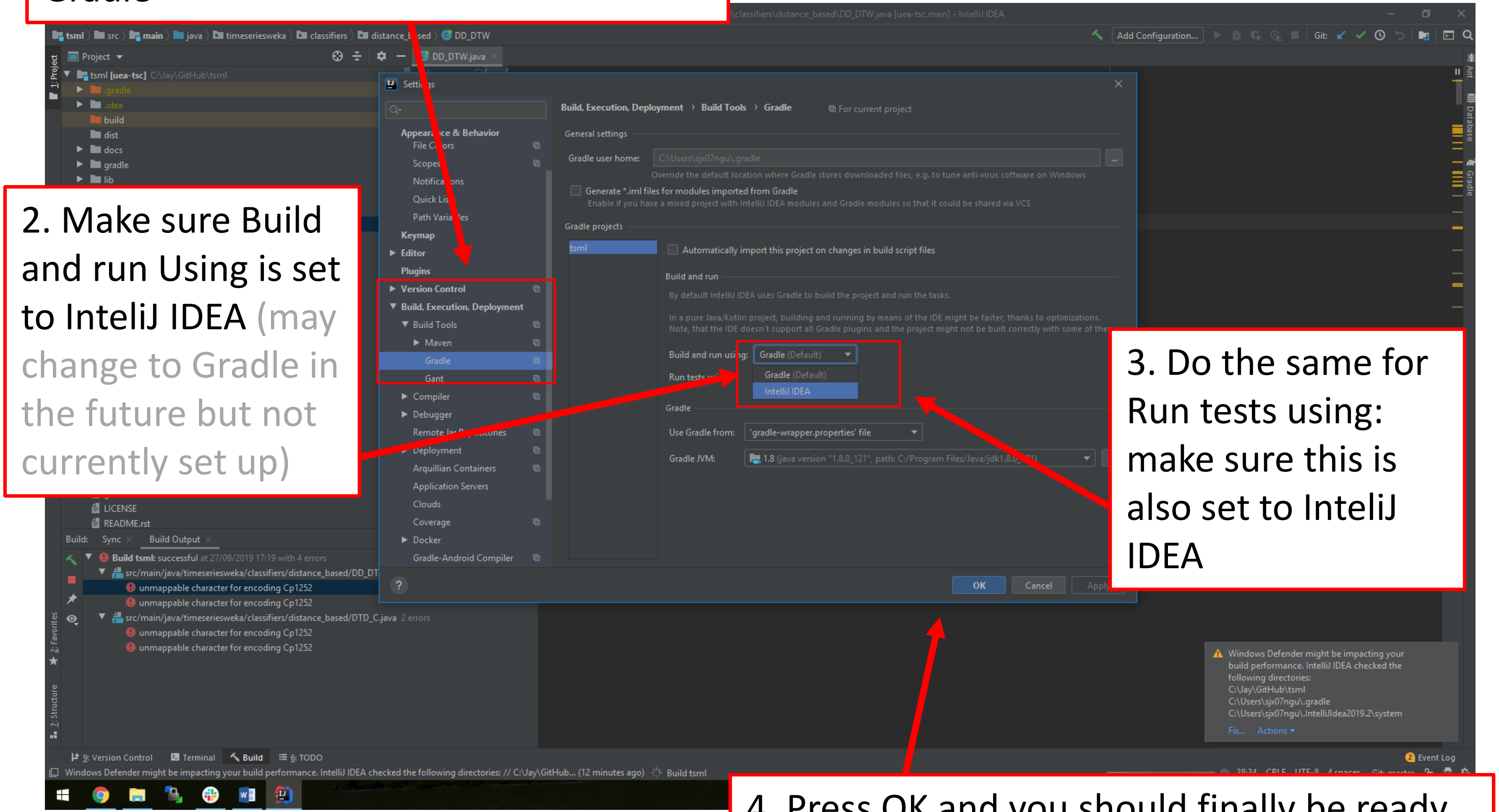


```java
/.../
package timeseriesweka.classifiers.distance_based;

import ...

/**
 *
     thor Jason Lines (j.lines@uea.ac.uk)
 *
 Implementation of:
 * Górecki, Tomasz, and Maciej
 * Using derivatives in time series classification.
 * Data Mining and Knowledge Discovery 26.2 (2013): 310-331.
 *
 */

/*
=========================================================================================================================
BRIEF DESCRIPTION:
=========================================================================================================================

The classifier works by using a weighted combination of the raw data representation and derivatives with either
Euclidean Distance or full-window DTW. The idea is that the distance of using the distance measure on the raw
data is weighted using parameter a, and the distance using derivative-transformed data is weighted using a
parameter b. These two params are in the range of 0-1, and the sum of a+b is always 1 (i.e. binary split in the
weighting between the two classifiers. Therefore a = 1, b = 0 is equivilent to just using DTW, and a=0, b=1
is equivilent to just using derivative DTW.

The author's propose using a single parameter alpha to weight these two components by using it to derive values of
a and b. However, in our experiments this approach does not seem to reproduce the published results. However, simply
```

```
Build tsml: Run tasks...  3 errors                                               20 s
  :compileJava                                                                   20 s
  src/main/java/timeseriesweka/classifiers/distance_based/DD_DTW.java  2 errors
    unmappable character for encoding Cp1252
    unmappable character for encoding Cp1252
  src/main/java/timeseriesweka/classifiers/distance_based/DTD_C.java  1 error
    unmappable character for encoding Cp1252
```

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
C:\Jay\GitHub\tsml
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system
Fix... Actions

1. Go to
Build, Execution, Deployment ->
Build Tools ->
Gradle



2. Make sure Build and run Using is set to InteliJ IDEA (may change to Gradle in the future but not currently set up)

3. Do the same for Run tests using: make sure this is also set to InteliJ IDEA

4. Press OK and you should finally be ready to build!

Build, Execution, Deployment › Build Tools › Gradle   For current project

General settings

Gradle user home: C:\Users\sjx07ngu\.gradle

Override the default location where Gradle stores downloaded files, e.g. to tune anti-virus software on Windows

□ Generate *.iml files for modules imported from Gradle
Enable if you have a mixed project with IntelliJ IDEA modules and Gradle modules so that it could be shared via VCS

Gradle projects

tsml

□ Automatically import this project on changes in build script files

Build and run

By default IntelliJ IDEA uses Gradle to build the project and run the tasks.

In a pure Java/Kotlin project, building and running by means of the IDE might be faster, thanks to optimizations.
Note, that the IDE doesn't support all Gradle plugins and the project might not be built correctly with some of the

Build and run using: Gradle (Default)

Run tests using: Gradle (Default) / IntelliJ IDEA

Gradle

Use Gradle from: 'gradle-wrapper.properties' file

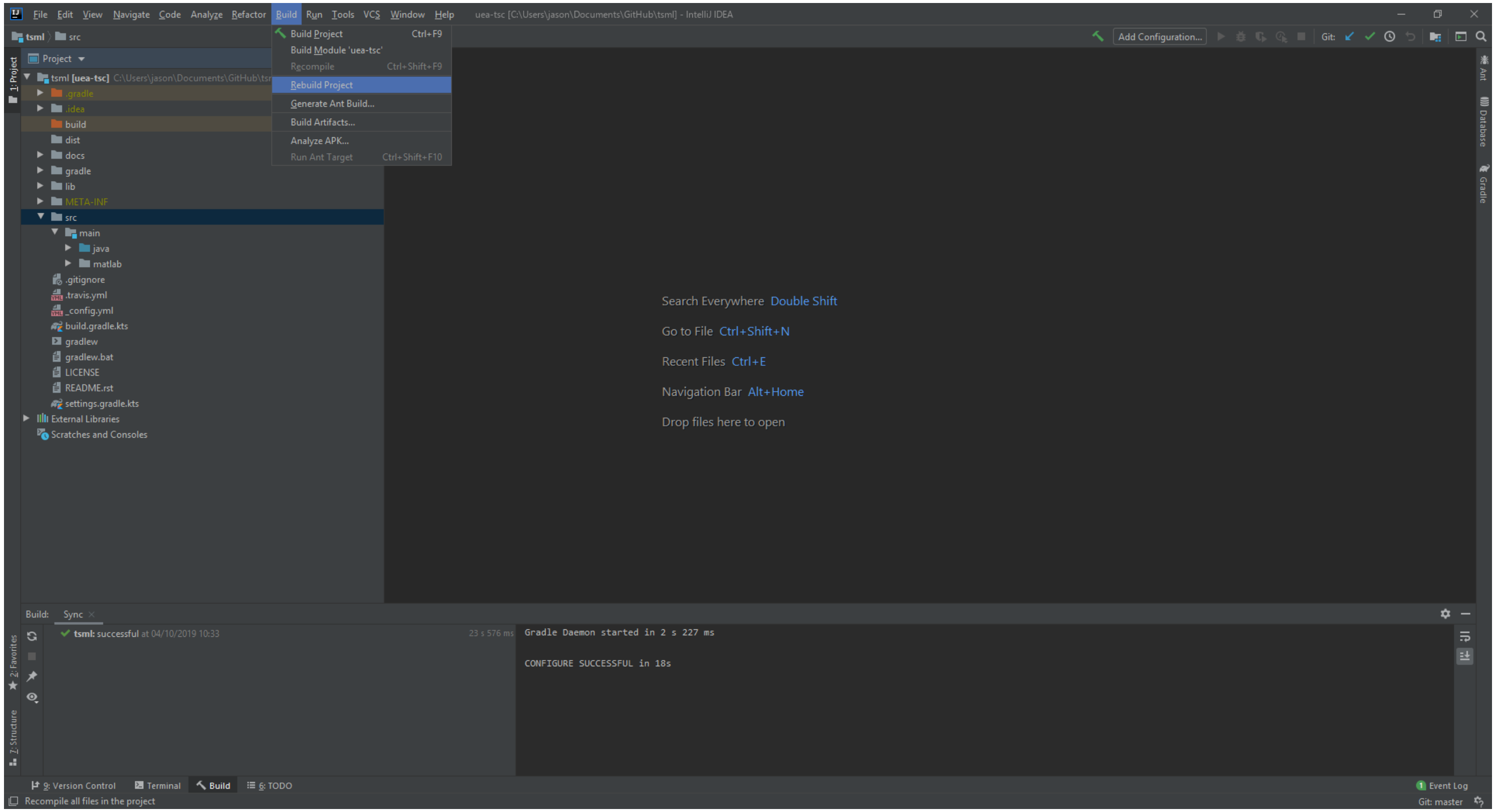
Gradle JVM: 1.8 (java version "1.8.0_121", path: C:/Program Files/Java/jdk1.8.0_121)

Build tsml: successful at 27/09/2019 17:19 with 4 errors
src/main/java/timeseriesweka/classifiers/distance_based/DD_DTW
unmappable character for encoding Cp1252
unmappable character for encoding Cp1252
src/main/java/timeseriesweka/classifiers/distance_based/DTD_C.java 2 errors
unmappable character for encoding Cp1252
unmappable character for encoding Cp1252

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories:
C:\Jay\GitHub\tsml
C:\Users\sjx07ngu\.gradle
C:\Users\sjx07ngu\.IntelliJIdea2019.2\system
Fix... Actions

Windows Defender might be impacting your build performance. IntelliJ IDEA checked the following directories: // C:\Jay\GitHub... (12 minutes ago)   Build tsml

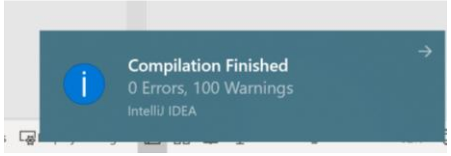
1. Click Build -> Rebuild Project



```
tsml: successful at 04/10/2019 10:33        23 s 576 ms
```

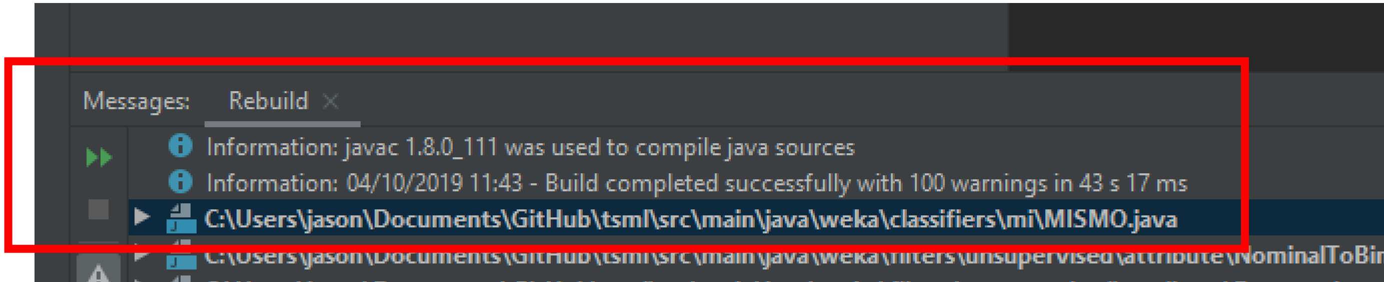
```
Gradle Daemon started in 2 s 227 ms

CONFIGURE SUCCESSFUL in 18s
```

2. On completion of the build you may get a windows notification:



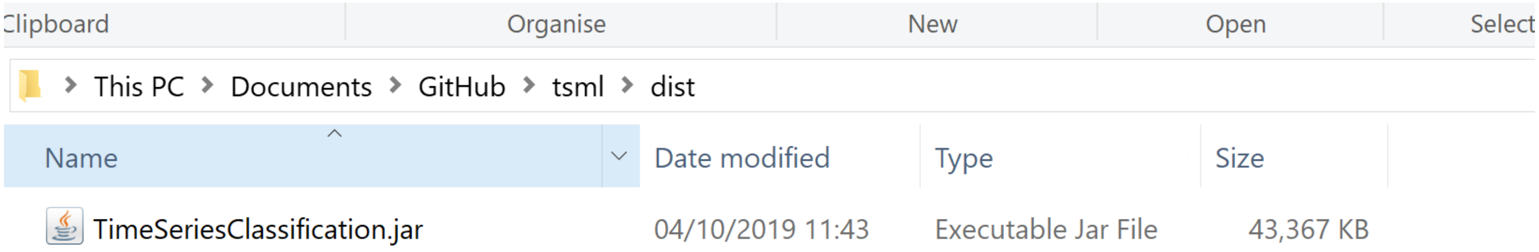
Compilation Finished
0 Errors, 100 Warnings
IntelliJ IDEA

3. And also confirmed in the messages within IntelIJ:



```
Information: javac 1.8.0_111 was used to compile java sources
Information: 04/10/2019 11:43 - Build completed successfully with 100 warnings in 43 s 17 ms
C:\Users\jason\Documents\GitHub\tsml\src\main\java\weka\classifiers\mi\MISMO.java
C:\Users\jason\Documents\GitHub\tsml\src\main\java\weka\filters\unsupervised\attribute\NominalToBin
```

FINALLY, you should now have a .jar in the location that you specified for the output



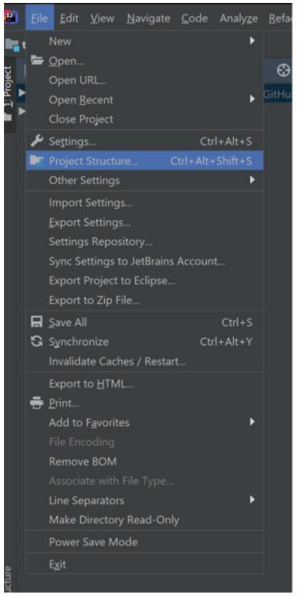
This PC › Documents › GitHub › tsml › dist

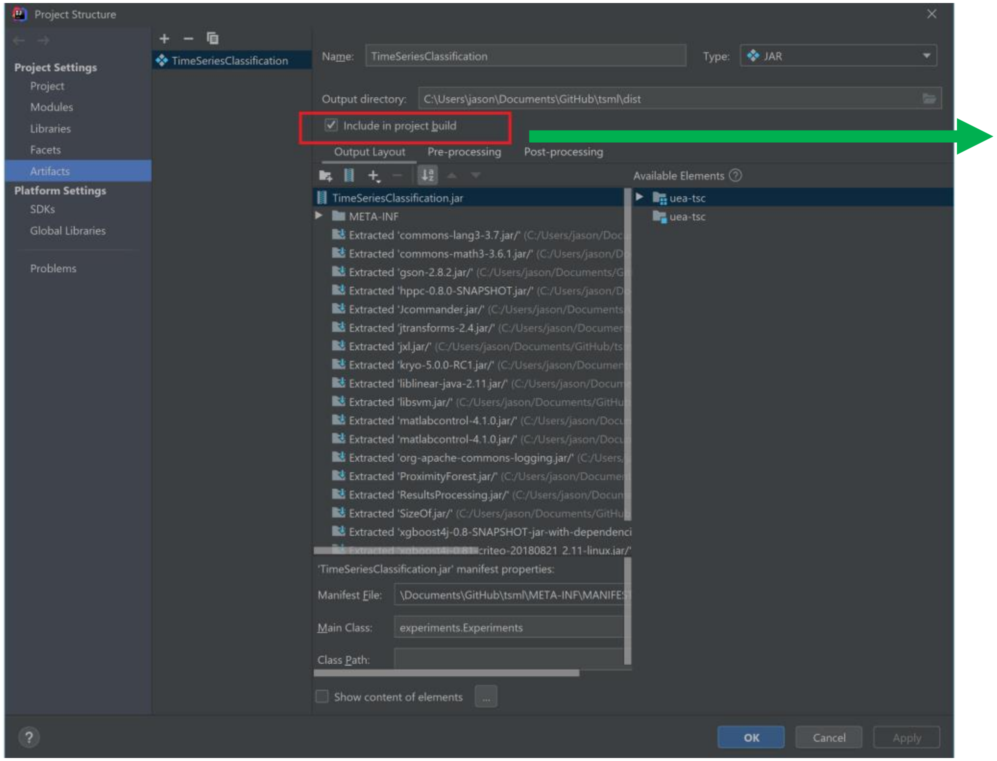
Name	Date modified	Type	Size
TimeSeriesClassification.jar	04/10/2019 11:43	Executable Jar File	43,367 KB

Note that this is a “fat JAR” and you do not need to copy libs to the cluster, other machines, etc. to run directly from the jar

Extra: manually building jars

For medium/large projects, it can be very annoying and time consuming for the IDE to produce a new .jar every time code is run. To only produce .jar files when explicitly required, first **make sure this '*Include in project build*' box is <u>not</u> ticked**





Name: TimeSeriesClassification

Type: JAR

Output directory: C:\Users\jason\Documents\GitHub\tsml\dist

☑ Include in project build

TimeSeriesClassification.jar
META-INF
Extracted 'commons-lang3-3.7.jar/' (C:/Users/jason/Doc
Extracted 'commons-math3-3.6.1.jar/' (C:/Users/jason/D
Extracted 'gson-2.8.2.jar/' (C:/Users/jason/Documents/G
Extracted 'hppc-0.8.0-SNAPSHOT.jar/' (C:/Users/jason/D
Extracted 'Jcommander.jar/' (C:/Users/jason/Documents
Extracted 'jtransforms-2.4.jar/' (C:/Users/jason/Documen
Extracted 'jxl.jar/' (C:/Users/jason/Documents/GitHub/ts
Extracted 'kryo-5.0.0-RC1.jar/' (C:/Users/jason/Documen
Extracted 'liblinear-java-2.11.jar/' (C:/Users/jason/Docum
Extracted 'libsvm.jar/' (C:/Users/jason/Documents/GitHu
Extracted 'matlabcontrol-4.1.0.jar/' (C:/Users/jason/Docu
Extracted 'matlabcontrol-4.1.0.jar/' (C:/Users/jason/Docu
Extracted 'org-apache-commons-logging.jar/' (C:/Users,
Extracted 'ProximityForest.jar/' (C:/Users/jason/Documen
Extracted 'ResultsProcessing.jar/' (C:/Users/jason/Docum
Extracted 'SizeOf.jar/' (C:/Users/jason/Documents/GitHu
Extracted 'xgboost4j-0.8-SNAPSHOT-jar-with-dependenci
criteo-20180821 2.11-linux.jar/'

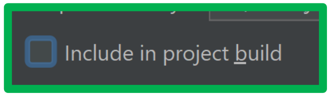
'TimeSeriesClassification.jar' manifest properties:

Manifest File: \Documents\GitHub\tsml\META-INF\MANIFES

Main Class: experiments.Experiments

Class Path:

□ Show content of elements

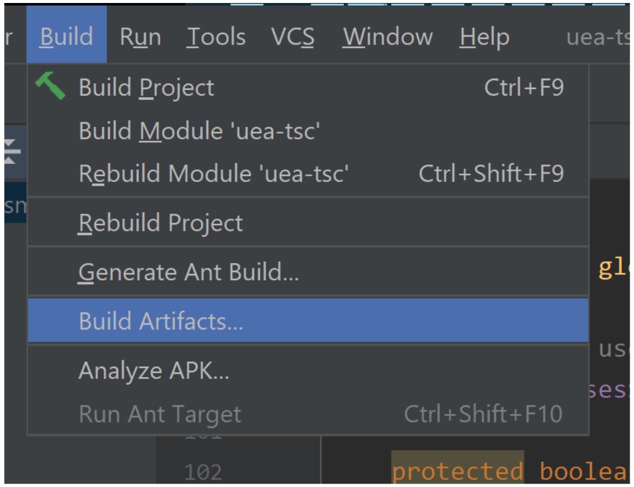


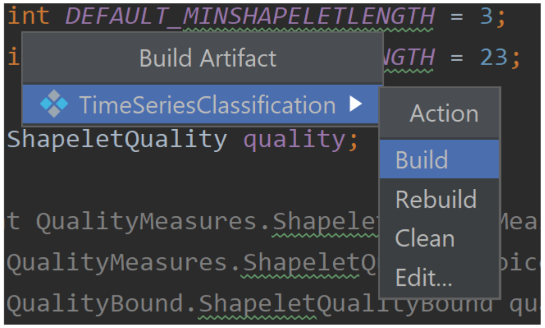
□ Include in project build

To explicitly build the jar:

Build -> Build Artefacts…

Then you’ll have similar options to Netbeans *et al.*


Build
Run
Tools
VCS
Window
Help
uea-ts
Build Project Ctrl+F9
Build Module 'uea-tsc'
Rebuild Module 'uea-tsc' Ctrl+Shift+F9
Rebuild Project
Generate Ant Build...
Build Artifacts...
Analyze APK...
Run Ant Target Ctrl+Shift+F10
102
protected boolea


int DEFAULT_MINSHAPELETLENGTH = 3;
Build Artifact
TimeSeriesClassification
Action
Build
Rebuild
Clean
Edit...
ShapeletQuality quality;