
Final Project

INTE2512: Object-Oriented Programming

Name and Student ID

Lai Nghiep Tri – s3799602

Thieu Tran Tri Thuc – s3870730

Nguyen Hoang Long - S3878451

Pham Trinh Hoang Long - s3879366

Design Team Name:

Kingsman

Lecturer:

Tran Ngoc Quang

Nguyen Ho Bao Phu

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Declaration:

"I declare that in submitting all work for this assessment I have read, understood and agree to the content and expectations of the Assessment declaration."

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I. Product Description

In this project, the team is asked for developing the desktop application, which simulates the working operation of news outlets, allow the end-user read the articles without any annoyance of advertising.

Our news aggregator will utilize a third library to access the source new outlets, do scraping techniques to collect a large number of articles of many categories and then display them to users with a straightforward Graphical User Interface for users of all different backgrounds to navigate without a hitch. The goal is to make it convenient for users to be able to effortlessly browse through many news sources at the same time.

This app will allow the users to easily navigate and select any common categories of articles from various news sites as they are pleased. These Categories are composed of "Newest", "Covid", "Politics", "Technology", "Health", "Sports", "Entertainment", "World" and "Others". The default main screen will display the article headers from the "Newest" categories which are the newest articles of all categories. When you select any other categories, the app will displace a list of the 10 newest articles for the users to choose and read from right on the app. And for information about the sites we used, we chose to gather the news from are some of the popular Vietnamese News outlets, which are VnExpress, ZingNews, Tuoi Tre, Thanh Nien, and NhanDan.

II. Installation Instruction

In the section, we provide the detail instruction for running the application as well as installing the third-party library to setup the JDK. Moreover, we assume that our clients have knowledge in using IntelliJ IDE to run the program.

Step 1: Download the zip file named " INTE2512-Kingsman.zip" from Canvas

Step 2: Extract the file then Open IntelliJ, afterward choose Open Project and choose the file you just extracted named " INTE2512-Kingsman"

Step 3: Add Liberica SDK (Software Development Kit) into IntelliJ by doing as follow:

In IntelliJ choose **File > Project Structure > under Project setting choose Project > Under Project SDK** select the box > Select Add SDK> select Download JDK > Search for BellSoft Liberica with version 16 (the newest version)

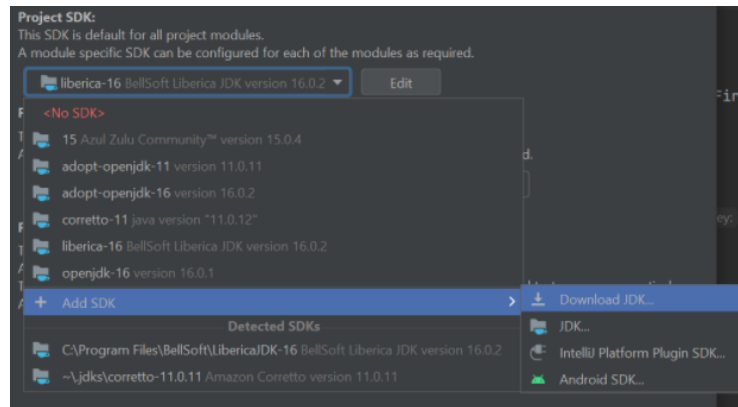


Figure 1: option box under Project SDK

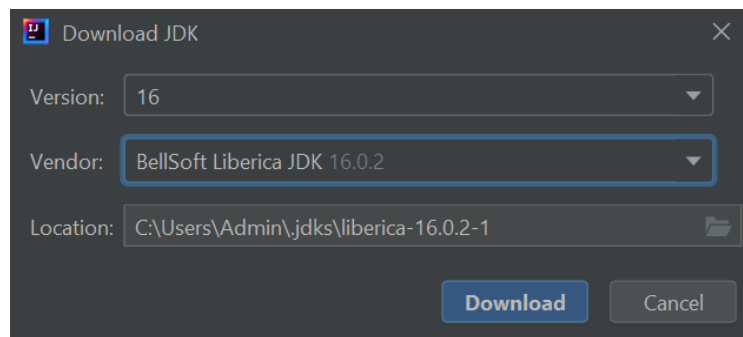


Figure 2: Download JDK box

Step 4: Download the latest version Jsoup library [here](#). Then to install it into IntelliJ as follow:

In IntelliJ click File > Project Structure > In the left panel select Modules > Select Dependencies tab > Select + icon > Choose "1 JAR or Directories..." > Find where you downloaded the Jsoup library before and select it > Choose Apply near the bottom of the pop-up window > Choose Ok to the left of the Apply button.

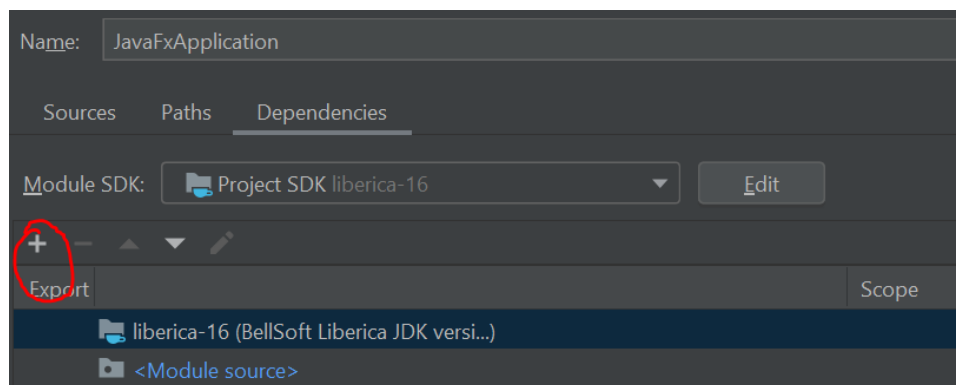


Figure 3: Dependencies tab and where to find "+" icon

Step 4.1: IF there are still some error warnings relevant to **the import statement modules** after all the steps above you can invalidate the caches by doing as follow and wait for the IDE restart:

File > Invalidate Caches > choose Invalidate and Restart

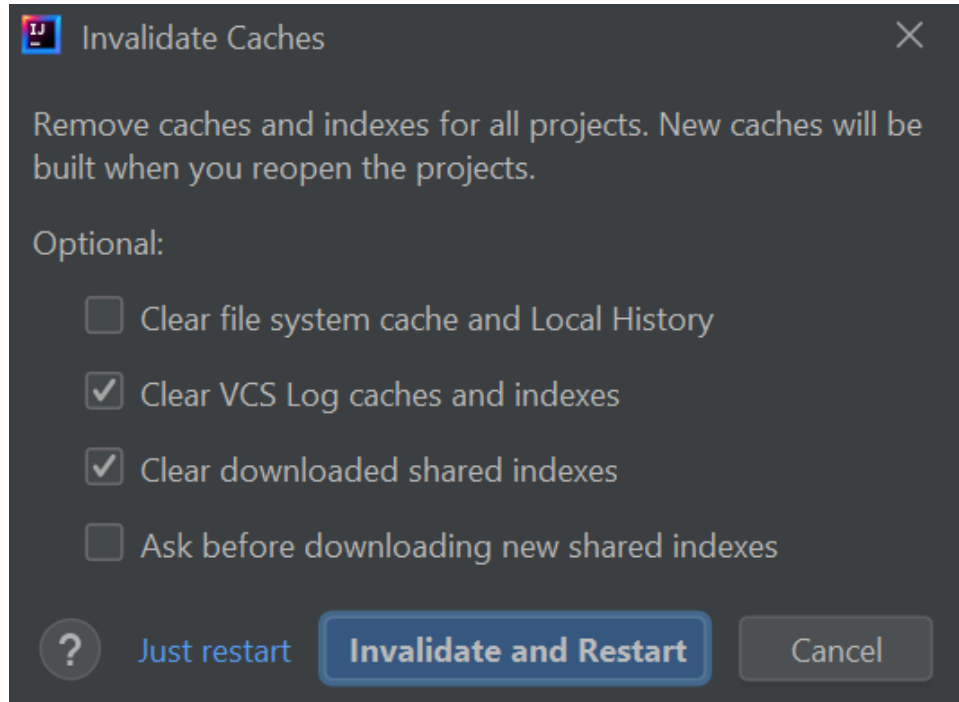


Figure 4: Fixing error in import statement

Step 5: Go to Main like the picture below

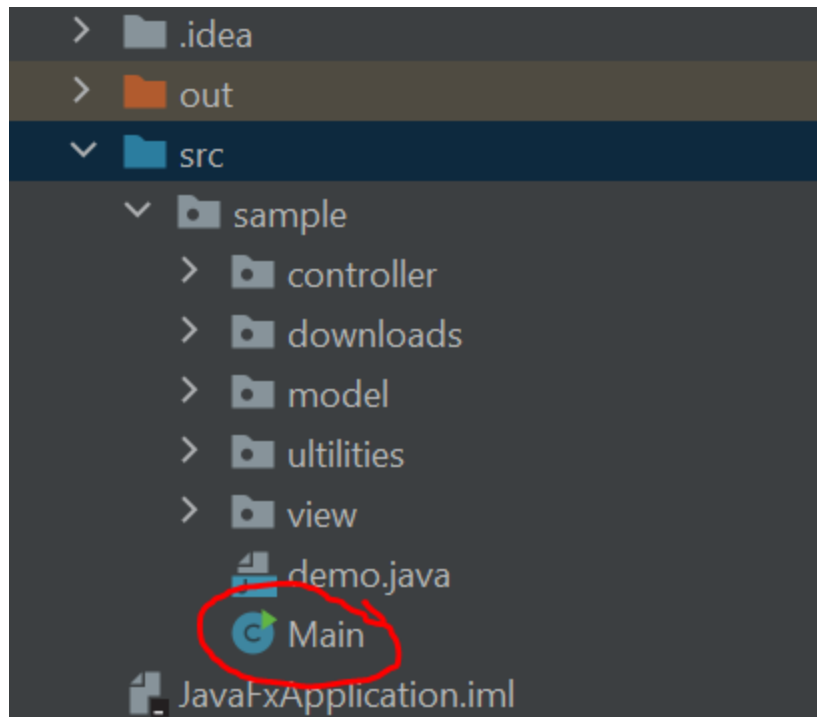


Figure 5: Location of Main

Run Main by clicking the green triangle at line 11> choose Run Main

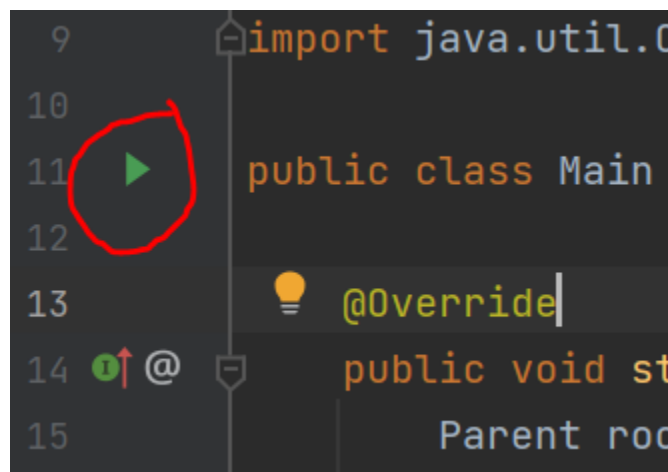


Figure 6: Run Main

III. Features

1 Achieved features:

- Simple and straightforward GUI (Graphical User Interface).
- Displaying articles with 10 different categories.
- Articles are compiled from various Vietnamese News websites.
- Displaying article header in homepage including:
 - A picture if possible
 - A title

- A source
- Details of when the article was posted (date, hours, minutes)
- Paging system with numerical buttons from “1” to “5”.
- A loading pie to signal the users when the app is in either scraping or displaying articles.
- Articles can be sorted from newest to oldest.
- Using the first image appeared in the article as the avatar unless the article already has the avatar image.
- Scrapping articles have videos and embed them in the reading view.
- Doing scrapping actions on 5 news outlets in under 30 seconds.

2 Unachieved features:

- Search Box for searching article titles.
- Loading bar displaying the remaining time user need to wait until the page is successfully loaded.
- Clicking the logo image will take the user back the homepage similar to the source outlets.
- Click on a category to return to the home page while the user is reading the layout. The team used to put the category pane like homepage at the top of the article layout, but it was troublesome for us to set up the actions for those buttons because they need to do multitasking (back and load the category articles).

IV. Known Bugs

1. Parent root cannot be null

Whenever the team set the ArticleController for article.fxml file, the error Root cannot be null usually occurs. After doing some researches, the bug is caused by the FXMLLoader since it does not load the fxml files and we consider using many type of path link to that fxml file (start from src/... or sample/...). However the problem is still not solved and the team don't know why until moving the controller out of article.fxml file and it properly works.

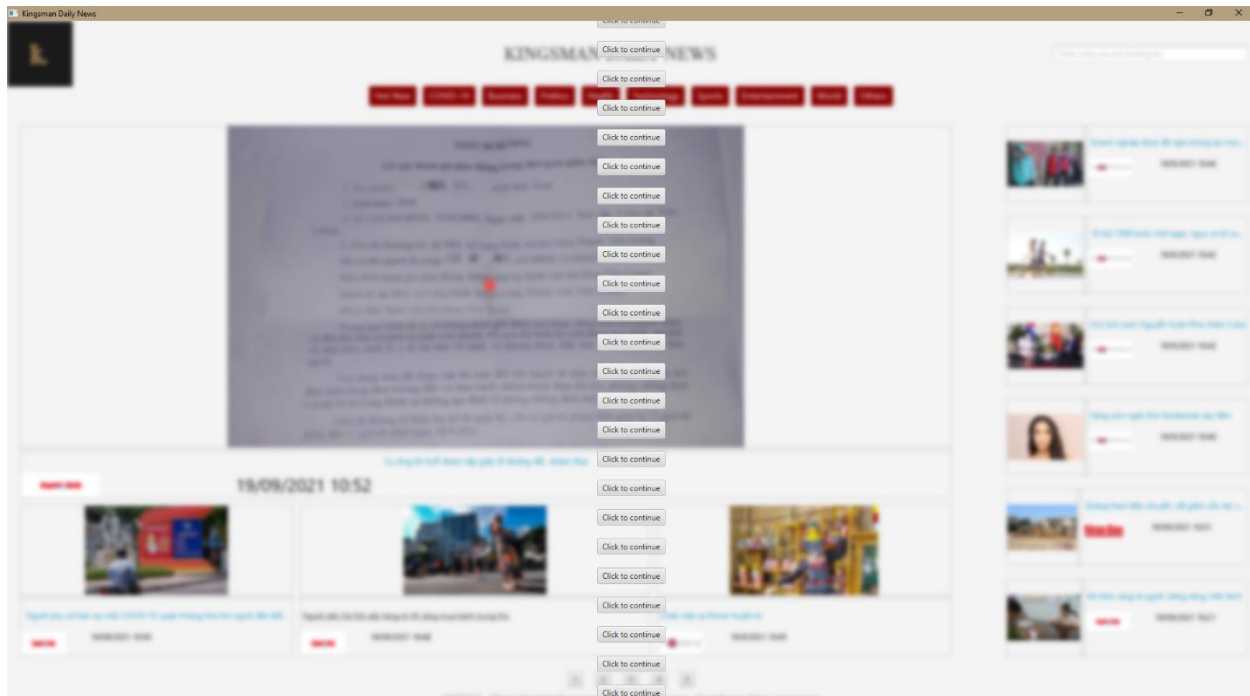
```

17 76931348623157E308" minHeight="-Infinity" minWidth="-Infinity" xmlns="http://javafx.com/javafx/16" xmlns:fx="http://javafx.com/fxml/1" fx:controller="sample.controller.ArticleController">
18
/O:/SEN20Program20Courses/INTE2512N20-K2000P/Project/submit/out/production/JavaFXApplication/sample/view/article.fxml:17
Exception in thread "JavaFX Application Thread" java.lang.NullPointerException: Create breakpoint: Root cannot be null
    at javafx.graphics/javafx.scene.Scene.<init>(Scene.java:345)
    at javafx.graphics/javafx.scene.Scene.<init>(Scene.java:207)
    at sample.HomepageController$1.handle(HomepageController.java:691)
    at sample.HomepageController$1.handle(HomepageController.java:668)
    at javafx.base/com.sun.javafx.event.CompositeEventHandler.dispatchBubblingEvent(CompositeEventHandler.java:86)
    at javafx.base/com.sun.javafx.event.EventHandlerManager.dispatchBubblingEvent(EventHandlerManager.java:234)
    at javafx.base/com.sun.javafx.event.EventHandlerManager.dispatchBubblingEvent(EventHandlerManager.java:191)
    at javafx.base/com.sun.javafx.event.CompositeEventDispatcher.dispatchBubblingEvent(CompositeEventDispatcher.java:59)
    at javafx.base/com.sun.javafx.event.BasicEventDispatcher.dispatchEvent(BasicEventDispatcher.java:58)
    at javafx.base/com.sun.javafx.event.EventDispatchChainImpl.dispatchEvent(EventDispatchChainImpl.java:114)
    at javafx.base/com.sun.javafx.event.BasicEventDispatcher.dispatchEvent(BasicEventDispatcher.java:56)
    at javafx.base/com.sun.javafx.event.EventDispatchChainImpl.dispatchEvent(EventDispatchChainImpl.java:114)
    at javafx.base/com.sun.javafx.event.EventDispatchChainImpl.dispatchEvent(EventDispatchChainImpl.java:114)
    at javafx.base/com.sun.javafx.event.EventDispatchChainImpl.dispatchEvent(EventDispatchChainImpl.java:114)
    at javafx.base/com.sun.javafx.event.EventDispatchChainImpl.dispatchEvent(EventDispatchChainImpl.java:114)
    at javafx.base/com.sun.javafx.event.EventUtil.fireEventImpl(EventUtil.java:74)
    at javafx.base/com.sun.javafx.event.EventUtil.fireEvent(EventUtil.java:49)
    at javafx.base/javafx.event.Event.fireEvent(Event.java:198)

```

2. Spam “Click to continue” button

The error rarely happens when the user changes the category, then move backward/forward in the page number and click the article. The system displays a bunch of buttons but arbitrary clicking on one of those still take the user to reading view scene and the team don't know why the causes.



V. Work-around

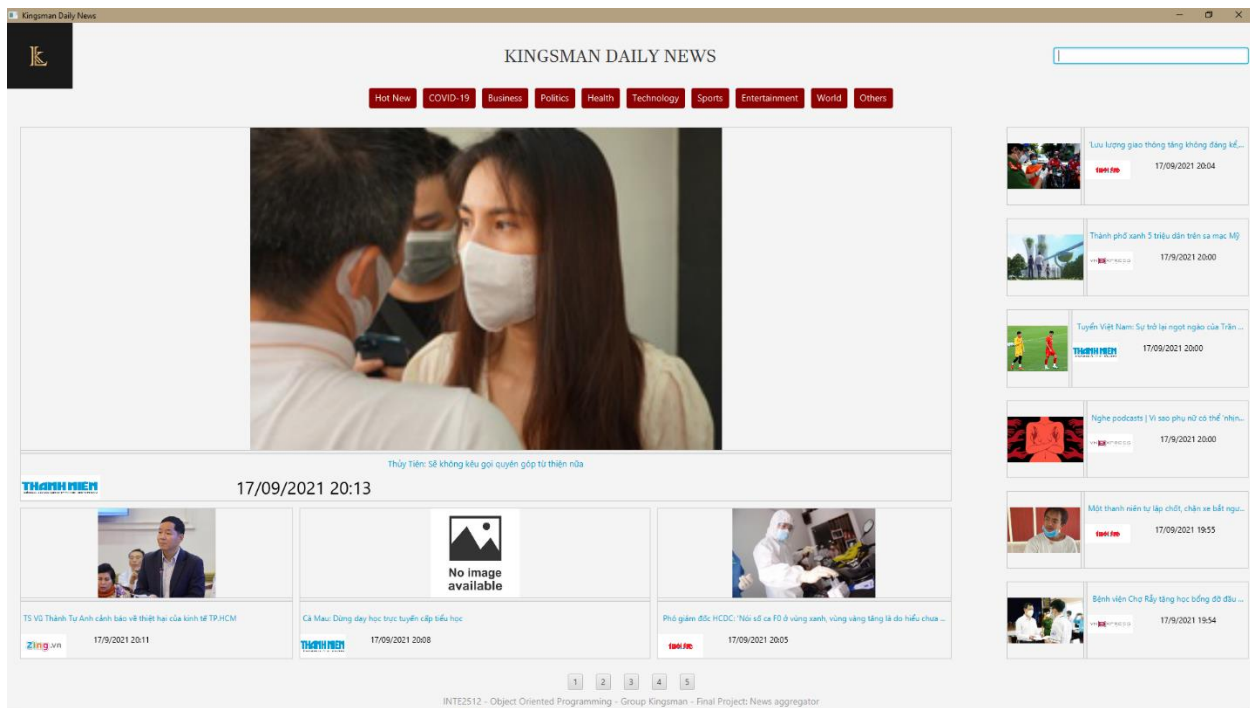


Figure 7: Homepage layout

When the user opens the application, the system will access the homepage.fxml file to load the main screen, the Hot New/ Newest category is set as default category. Each article header contains the avatar, title, source outlet image and published time. In case the article does not have any image as well as avatar, the program will use the “No image available” image to represent that issue.

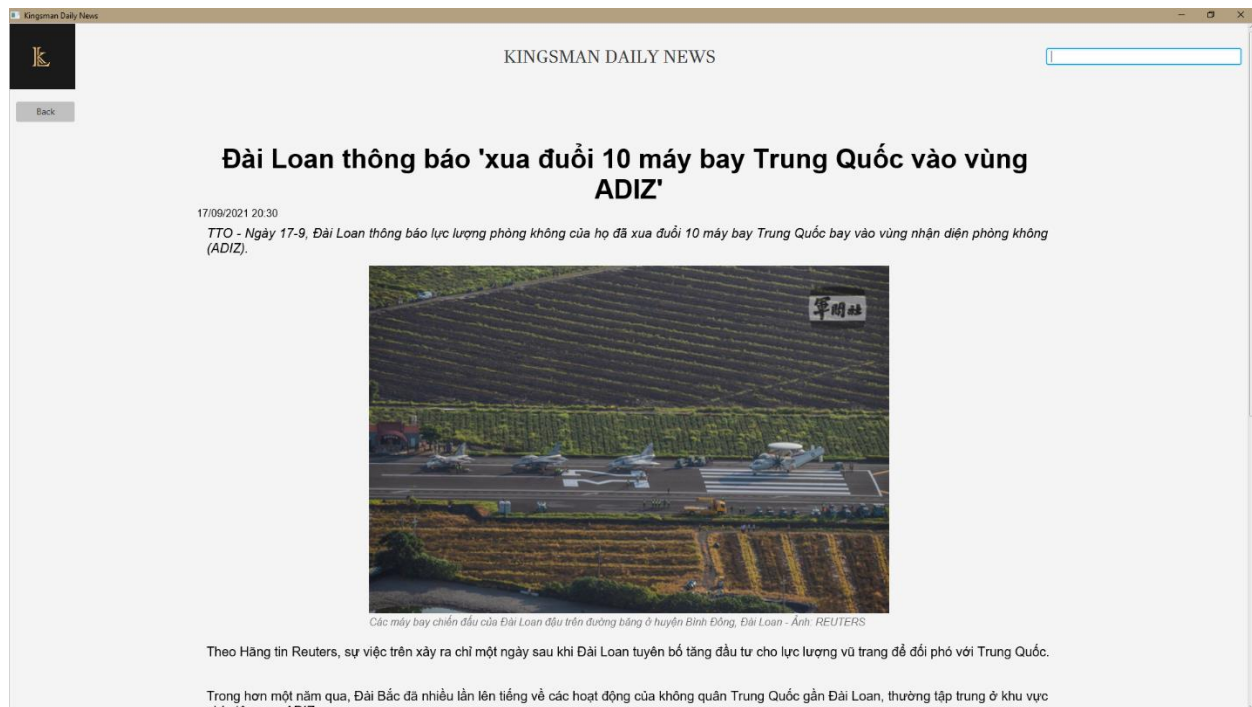


Figure 8: Article layout

After clicking on the article's title, the program will do a scene switching action by loading the article.fxml file. The title locates at the top of the layout, following by published time and summary while the author's name locates at the end of page. In addition, the team provides the “Back” button to get back to the homepage.

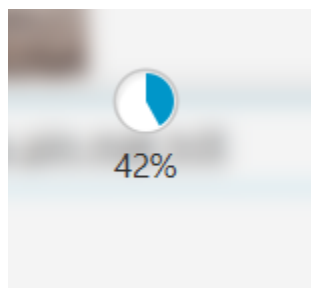


Figure 9: Loading Pie

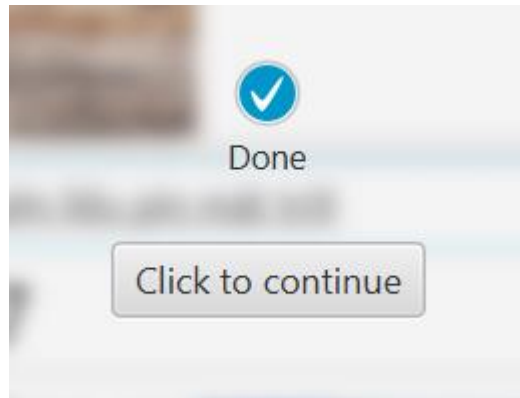


Figure 10: Loading Pie when finished

Once an article is selected, the screen will be blurred, and the loading pie will appear to show how much of the article is ready to be viewed. Once the loading process is succeeded, there will be a prompt for the user to click to continue with the article.

VI. Video Demonstration

https://rmitteduau-my.sharepoint.com/:v/g/personal/s3799602_rmit_edu_vn/Ef5Ws9_IQ3RKqDlXmGHQVr4BAR6XszrbSfD0L_q-8aj8FA?e=qiapC4

VII. Acknowledge

Though most parts of the program are designed and implemented by the team, there are some code sections (switch scene, sort newest/ oldest, etc) that have been inspired by external sources including *GeeksforGeeks*, *Tutorials Jenkov*, *javatpoint* and *Oracle documentations*.

Moreover, we would like to send our deepest gratitude to Mr Quang Tran, who is the lecture of this course, has provided us priceless helps in developing the project design. Although the team does not have much experience developing an OOP software as well as the class diagram design, we still managed to complete our progressive project with the entire effort of consulting and supporting from him. Moreover, we are particularly grateful for the assistance given by Mr. Phu Nguyen as providing valuable feedbacks in our assessments as well as relentless guidance in the runtime error handling.

VIII. References

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