

# Test Project

## *Mobile Applications Development*

Module D Development and Testing  
Day 4

Submitted by:  
Independent Test Project Design Team

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# Introduction

WorldSkills is holding the global WorldSkills Competition all over the world in October 2022. As the organizer of this competition, WorldSkills hopes to develop relevant apps to serve the audience who pay attention to this competition. The audience can sit at home, learn about WorldSkills, feel the atmosphere of the competition, and follow the dynamics of the competition through pictures and videos from the app.

**In this module, you need to develop the basic App functional logic, and write automated test scripts to run the App. You need to develop a mobile app named "WorldSkills News Center" to get the latest WorldSkills competition information.**

## Description of project and tasks

You should push a full project and an installable apk (Android) or app (iOS) package to Git Server.

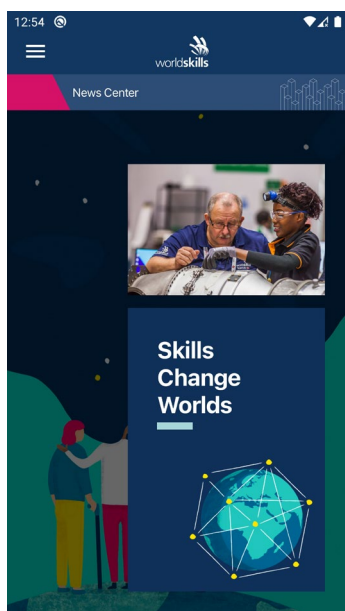
Competition time: 3 hours

Marking Emulator:

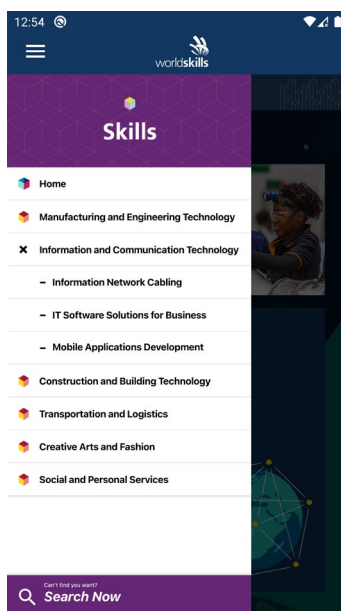
- iOS: iPhone 8 Plus
- Android: Pixel 2

## Application Prototypes

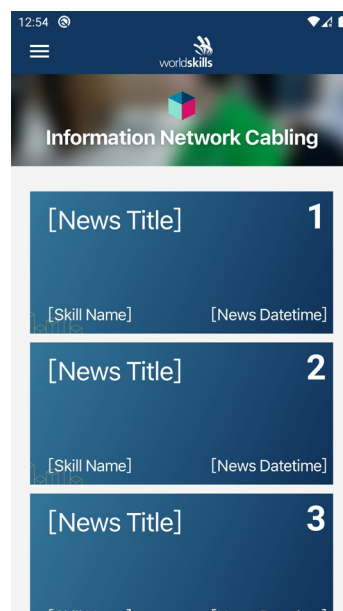
The App prototypes are for reference only. You do not need to copy the same appearance, colors, decorative icons/images, or elements' positions/style.



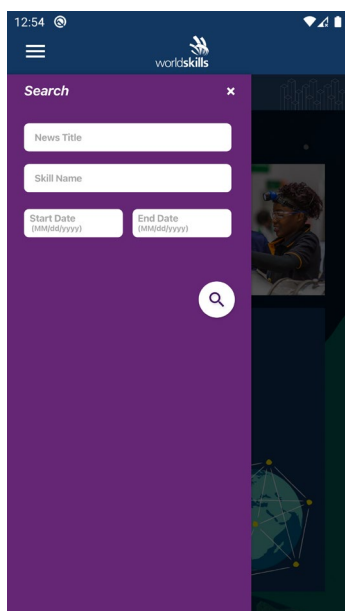
Main



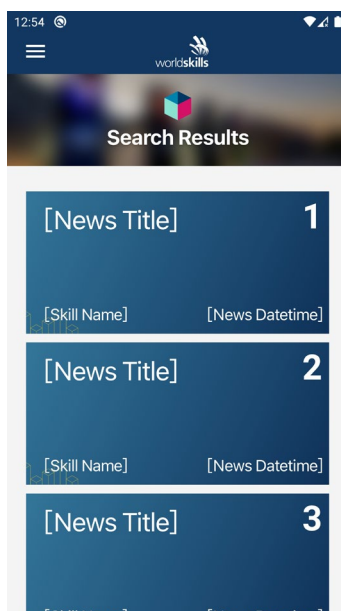
Drawer Menu



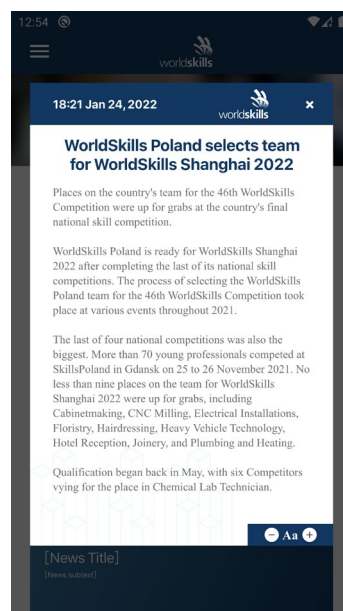
News List



Search Area



Search Results



News Article Dialog

## General Demands

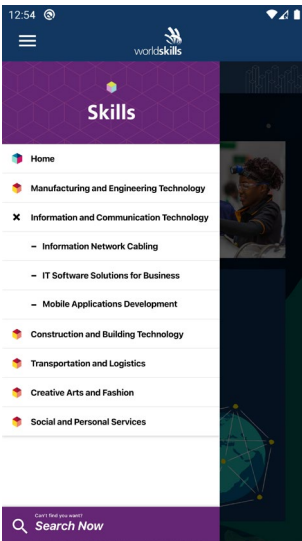
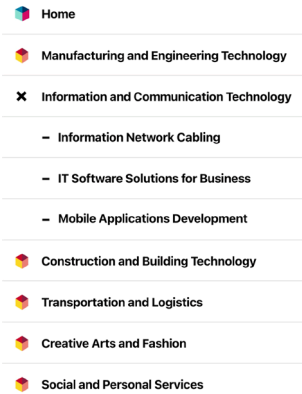
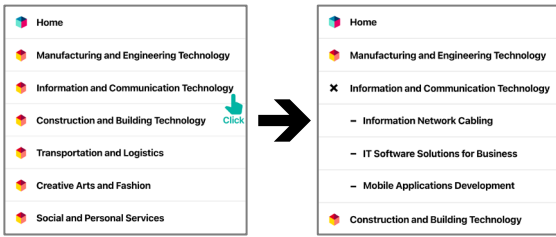
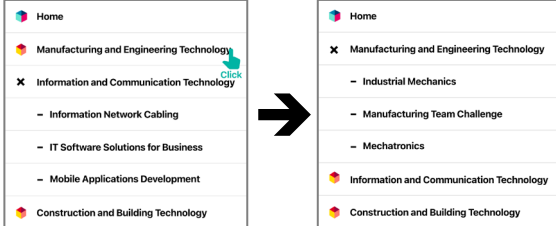
1. The text in the elements must be the same as the text with quotation marks described in the Test Project..
2. All data which you need are in **media-files/json\_data\_**
3. Your application functions should develop by following all test cases (Form 1.1/1.2) and automated function test case (Form 2.1).
4. Your application should develop by application running flow:

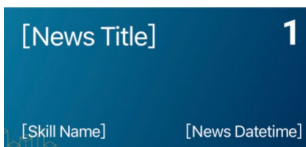
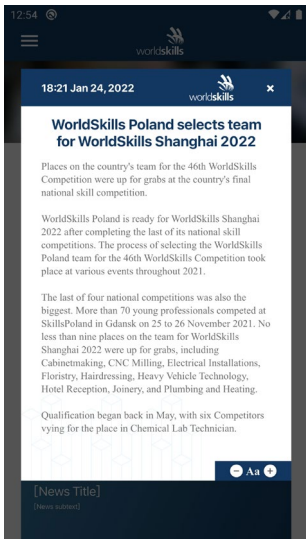
Normal:

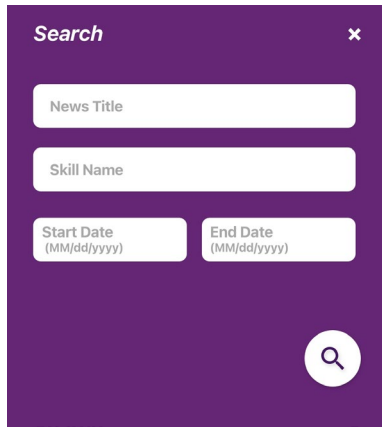
1. Enter the application
  2. Click the menu button of the application to open the drawer;
  3. Click a skill type and then click specific skill to show the corresponding news list;
  4. Click the news item in the news list to open the news article dialog.
- Search:
- Enter the application;
5. Click the menu button of the application to open the drawer;
  6. Click the "Search Now" button in the drawer; #Input the keywords of what you want to search for;
  7. Click the search button to filter the news json data base on your input keywords, and then show the search results;
  8. Click the news item in the results list to open the news article dialog.

# 1. Develop by Test Case

Develop the application by understanding the Test case.

Form 1.1: Application UI Test Case		
No.	Area	Demands
1	The Application	a) The application should always be portrait mode; b) Should include a home screen picture (media-files/images/main_page_post.jpg).
2	Drawer Menu 	a) The drawer menu is hidden by default; b) The drawer menu can be shown by clicking the menu icon button.
3	Expandable List 	a) By default, only skill types are displayed in the list. When a skill type is clicked, the corresponding skill items will be unfolded.  b) The unfolded skill items should be folded back if clicking other skill types. 

Form 1.1: Application UI Test Case		
No.	Area	Demands
4	<p>News list or result list item</p> 	<p>a) List item includes news title, news datetime, skill name and sequence number.</p> <p>b) Click the news item in the news list or results list to open the news article dialog.</p>
5	<p>News Article Dialog</p> 	<p>c) The date format should be the same as "18:21 Jan 24, 2022";</p> <p>d) The font size of the article should decreased or increased by clicking the "-" or "+" buttons;</p> <p>e) Play sound effects when clicking the "-" or "+" buttons (media-files/sound_effect/zoom_button.wav) when clicking the "-" or "+" buttons.</p>

Form 1.2: Application Test Case					
No.	Area	Demands			
1	Search Area		Trigger Timing	Constraints Type	Constraints Description
		News title keyword input box	Click the Search Button	length	[1, 10]
				validity	required
		Skill name keyword input box	Click the Search Button	length	[3, 10]
				validity	required
		Date input boxes	Click the Search Button	format	MM/dd/yyyy (e.g. 01/31/2021)
		validity	Required, each value should be a valid date, and the start date should be earlier than the end date.		
<p>a) Open this area by clicking "Search Now" Button;</p> <p>b) Click the search icon button to show the results list of news according to the input, or a notice when the input does not satisfy the conditions;</p> <p>c) Search keywords are not case sensitive;</p> <p>d) The news in the search results should contain the input keywords in their news title and skill name, and its date should fall in the period between the input start date and end date;</p> <p>e) The news in the search results should contain news title, date, skill name and sequence number.</p>					



## 2. Automated Test

Finish the automated test script according to the test project description.

It is noted that the test script files must be stored in the location according to the **Automated Test Guide**.

All steps need to be held on for at least 10 seconds, and the "Step No: \$Steps\_No,\$Description of the Action" should be logged on the "output" area, such as terminal, debug area or console.

terminal, debug area or console.

Form 2.1: Application Function Test Case			
Program Name		WorldSkills News Center	
Test Type		Function Test	
Test Method		Black Box Test, Automated Test	
Test Demand		The workflow of the application functions runs normally.	
Test Execution Steps			
Steps_No.	Description of the Action	Input Data	Expected Results
1	Application startup		Application starts normally
2	Open drawer menu by clicking the menu button		Drawer Menu is opened normally
3	Click the skill type "Information and Communication Technology"		Skill items of "Information and Communication Technology" are unfolded
4	Show the Information Network Cabling News List by clicking "Information Network Cabling"		Information Network Cabling News List is shown and the drawer menu is hidden
5	Scroll the news list until there appears a piece of news with the title including "London"		A piece of news with the title including "London" appears in the list
6	Open drawer menu by clicking the menu button		Drawer Menu is opened normally
7	Click "Search Now" Button		Search area is opened normally
8	Input text into the Input box of the news title	"web"	The Input box is filled with "web"
9	Input text into the Input box of skill	"Mobile"	The Input box is filled with "Mobile"

10	Input start date and end date into the input boxes of date	Start Date: "03/21/2022 " End Date: "09/30/2022 "	The start date input box is filled with "03/21/2022 " The end date input box is filled with "09/30/2022 "
11	Click the search icon button		Search Results List is shown and the drawer menu is hidden
12	Scroll the news list until the tenth news appears		The news list is scrolled to the tenth news
13	Click the tenth news		The news article dialog of the tenth news is shown
14	Click the "+" Button		The font size of the content increases
15	Click the close icon button		The news article dialog is closed

## Instructions to the Competitor

1. Please create the project with correct package name (Android)/ Organization Identifier (iOS). Naming convention: edu.ws2022.dXX;
2. You should save the project in the folder: XX\_Module\_D;
3. You should rename the generated apk (Android)/ app (iOS) file as XX\_Module\_D.apk (Android)/ XX\_Module\_D.app (iOS), and save it in the root of the XX\_Module\_D folder.
4. The whole XX\_Module\_D folder should be pushed to the provided remote Git repository;
5. Only works pushed to the remote Git server within the specified time will be marked.

Note: XX is your workstation code.

# Automated Test Guide

Automated test dependencies configuration guide and scripts storage demands:

- If you use native Android platform, you should use "UI Automator" to finish the automated test scripts. You must write your UI test scripts entrance method "startTesting" in ApplicationUITesting class in androidTest directory. You must make sure that UI test in Android Studio can be started by clicking the start run button of the method: "startTesting".

Before building your UI test with UI Automator, make sure to configure your test source code location and project dependencies. In the build.gradle file of your Android app module, you must set a dependency reference to the UI Automator library:

```
dependencies {
    ...
    androidTestImplementation 'androidx.test.uiautomator:uiautomator:2.2.0'
}
```

- If you use Flutter platforms, you should use 'flutter\_test' and 'integration\_test' packages to finish the automated test scripts. You must write your UI test scripts in integration\_test/app\_test.dart file. You must make sure that the UI test can be started by running the console command:

1. "flutter pub get --offline";
2. "flutter test --no-pub integration\_test/app\_test.dart".

Before building your UI test with flutter\_test and integration\_test packages, make sure to configure your project dependencies. In the pubspec.yaml file of your flutter module, you must set dependencies reference to the flutter\_test and integration\_test packages:

```
dev_dependencies:
  flutter_test:
    sdk: flutter
  integration_test:
    sdk: flutter
```

- If you use native iOS platforms, you should finish the automated test scripts. During the marking process, the Experts will mark your UI test with the Xcode. You must make sure that the UI test in Xcode can be started by clicking the start run button of the method: "testStart" in "[Project Name]UITests.swift" or "[Project Name]UITests.m".

When you create a project, select the Include Unit Tests and Include UI Tests checkboxes that appear under the Language pop-up menu on the first sheet. These options preconfigure your project with [Project Name]Tests and [Project Name]UITests targets. In the Test navigator, you can view and edit the code for these tests, and add additional tests. Then run the UI tests and unit tests on simulated and connected devices.

# Marking Scheme

Module D		
No.	Sub-criterion	Mark
1	Develop by Test case (Measurment)	9.0
2	Develop by Test case (Judgment)	1.0
3	Automated Test (Measurment)	10.0
		20.0