

Test Project

Module A Functionality
Day 1 A.M.

Mobile Applications Development

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Introduction

X-French Travel plans to develop several apps to help people learn about French tourist attractions, history, and culture and promote the flourishing development of local tourism.

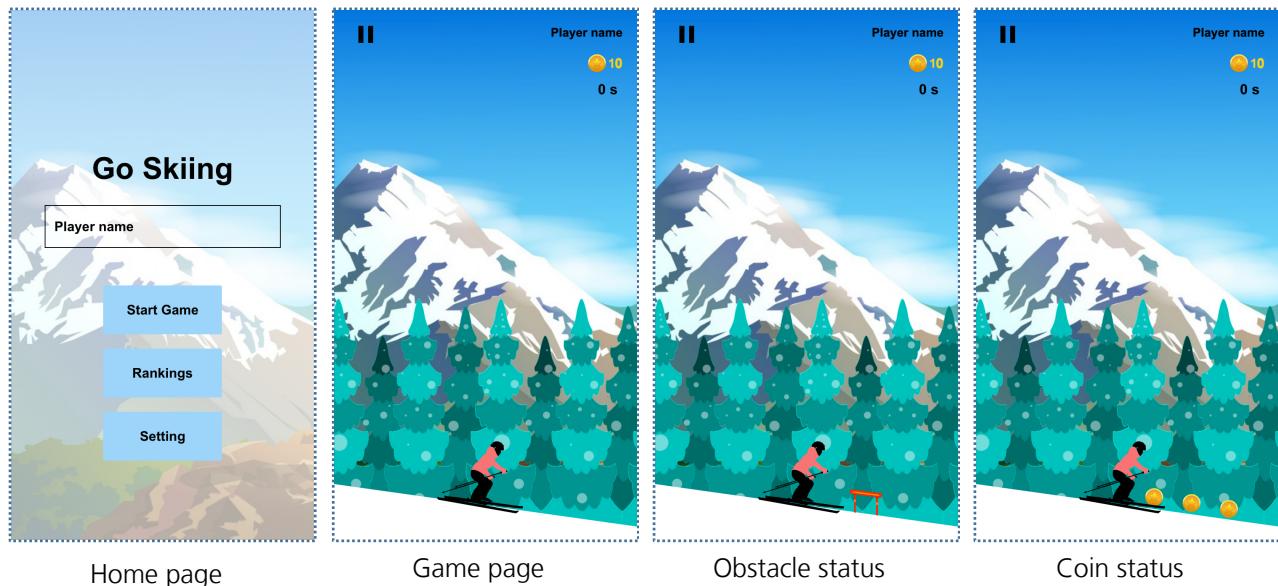
Today, the Product Manager has provided you with product wireframes. In the morning, it is a phone game app about skiing; in the afternoon, it is a tablet app related to travel diaries. As a Mobile Application Developer, your task is to develop corresponding apps based on the given wireframes according to the specific development needs.

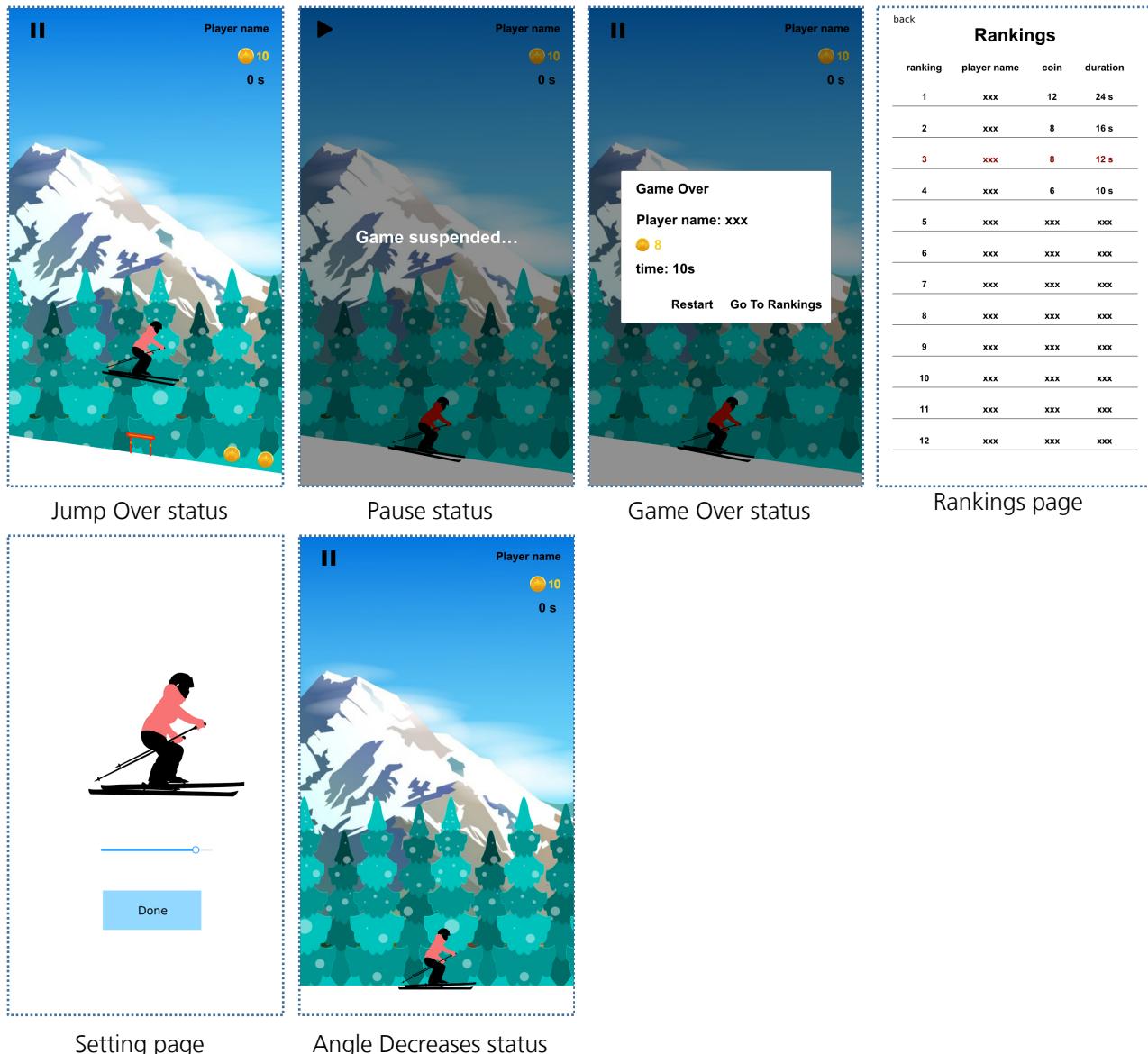
Description of project and tasks

You do not need to consider the program interface's aesthetics and the elements' position. The work can be inconsistent with the given wireframes, but you need to consider the ease of use. The development task is divided into two parts depending on the devices.

	PART	NAME	COMPETITION TIME	MARKING DEVICES
✓	A.M.	Functionality (phone)	2.5 hours	Android phone or Apple phone
	P.M.	Functionality (tablet)	2.5h	Emulator: Pixel C or iPad Pro (9.7-inch)

Below is an overview of some of the wireframes. Please check the **media-files** for details.





General Demands

1. Finish the function of this application according to the demands;
2. The application should remain in portrait orientation;
3. The application needs to display the application name "Go Skiing" in the operating system;
4. The application needs to display an application icon in the operating system. You should use "[go_skiing.png](#)" in the material as the icon.

Pages Demands

Home page

Elements include:

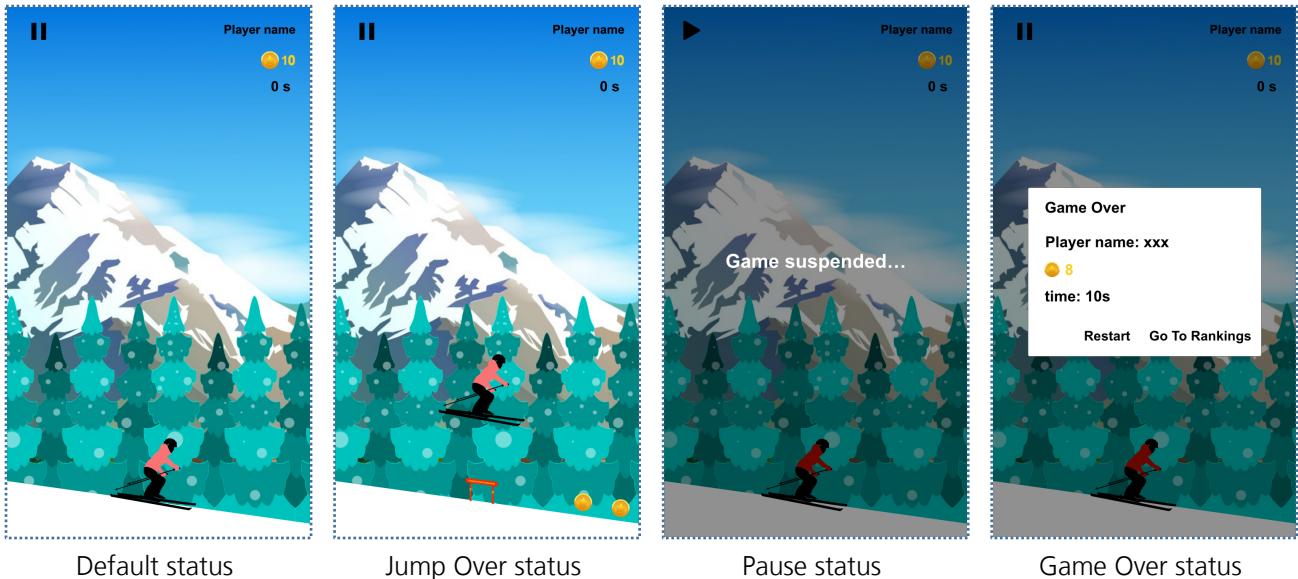
1. Background image;
2. "Go Skiing" text;
3. Player Name Input area:
 - (a) Text input box;
 - (b) Hint text "Player name".
4. "Start Game" button;
5. "Rankings" button;
6. "Setting" button.



Functional requirements:

1. Click the "Setting" button to navigate to the Setting page;
2. Click the "Start Game" button:
 - (a) If the player name input box is empty, a prompt box will pop up with the message "Invalid";
 - (b) If a player name is entered, navigate to the Game page.
3. Click the "Rankings" button to navigate to the Rankings page.

Game page (Default/Jump Over/Pause/Game Over)



Elements include:

1. Background image;
2. Skier;
3. White slope on the bottom;
4. Pause button (II);
5. Game status area on the top right:
 - (a) Player Name text;
 - (b) Coin quantity text;
 - (c) Duration text.

Functional requirements:

1. When the game starts:
 - (a) The default number of coins is 10;
 - (b) Mobile phone device vibrates;
 - (c) Background music "*bgm.mp3*" begins playing;
 - (d) Screen recording of the entire game process is required.
2. The white slope is at an inclined angle by default;
3. Trees in the background:
 - (a) Continue moving left;
 - (b) Create a seamless loop effect (where the end of the sequence transitions smoothly back to the beginning);
 - (c) Swipe down any location on the screen to immediately accelerate and then slow down to the original speed.
4. The skier:
 - (a) Remains centered;
 - (b) Clicking any position on the screen:
 - (i) Makes the skier jump;
 - (ii) Plays the sound effect "*jump.wav*".
5. Clicking the pause button:

- (a) The skier can not be operated;
 - (b) Everything stops moving;
 - (c) The pause button switches to the play button;
 - (d) Background music stops.
6. Clicking the play button:
- (a) The game continues;
 - (b) The play button switches to the pause button;
 - (c) Background music resumes.
7. The gyroscope control:
- (a) When the device is tilted left,
 - (i) The white slope's angle decreases;
 - (ii) Everything moves slower;
 - (iii) The volume of the background music decreases;
 - (iv) This continues until the slope returns to a horizontal position (refer to wireframe: Angle Decreases status), and everything comes to a stop.
 - (b) When the device is tilted to the right everything returns to normal.
8. When swiping from left to right, a confirmation box with "The game is in progress. Are you sure to quit?" and options "Yes" and "No" pop up, and the game pauses:
- (a) Select "Yes" to return to the Home page;
 - (b) Select "No" to close the dialog box and continue the game.
9. The player name is taken from the input entered on the Home page;
10. The duration text increases by 1 every second;
11. When the skier hits an obstacle:
- (a) The game plays the audio file "*game_over.wav*" from the media-files;
 - (b) Mobile phone device vibrates;
 - (c) Stop recording screen. The recorded video file needs to be stored in the system photo gallery;
 - (d) A pop-up dialog appears, containing the following:
 - (i) The text "Game Over";
 - (ii) Correct player name;
 - (iii) Correct number of coins;
 - (iv) Correct duration;
 - (v) A "Restart" button to restart the game;
 - (vi) A "Go To Rankings" button to navigate to the Rankings page.
12. Long-pressing any location on the screen activates invincibility mode for the skier by consuming 1 coin, allowing it to ski invincibly for 1 second. During this mode:
- (a) The skier's colorful jacket turns black;
 - (b) The text "Invincibility Mode" displays on the screen;
 - (c) The skier can pass through obstacles without any collision;
 - (d) If you do not release your finger, 1 coin will continue to be consumed every second;
 - (e) When the coins are depleted or you release your finger, the invincibility mode will be canceled.

Game page (Obstacle/Coin)



Obstacle status



Coin status

Elements include:

1. Obstacle;
2. Coins.

Functional requirements:

1. Occasionally, an obstacle is generated, appearing from the right side of the screen and moving left until it exits the screen;
2. Occasionally, coins are generated, appearing from the right side of the screen and moving left until they exit the screen;
3. Coins cannot overlap with obstacles;
4. Avoid obstacles by making the skier jump;
5. When the skier collides with a coin, the coin disappears:
 - (a) Play the sound effect "*coin.wav*";
 - (b) Increase the number of coins collected by one.

Rankings page

Rankings			
ranking	player name	coin	duration
1	xxx	12	24 s
2	xxx	8	16 s
3	xxx	8	12 s
4	xxx	6	10 s
5	xxx	xxx	xxx
6	xxx	xxx	xxx
7	xxx	xxx	xxx
8	xxx	xxx	xxx
9	xxx	xxx	xxx
10	xxx	xxx	xxx
11	xxx	xxx	xxx
12	xxx	xxx	xxx

Rankings page

Elements include:

1. "Rankings" text;
2. Back button;
3. List of data, each item:
 - (a) Ranking;
 - (b) Player name;
 - (c) Coin;
 - (d) Duration.

Functional requirements:

1. Arrange the records in descending order by the duration of gameplay;
2. If entering this page from the game page, highlight the most recently ended game record;
3. Persistently store ranking list data;
4. Display the text "No Ranking" when there are no ranking records;
5. Click the back button to navigate to Home page.

Setting page



Setting page

Elements include:

1. Skier;
2. Color controller;
3. "Done" button.

Functional requirements:

1. The color controller changes the color of the skier's jacket only;
2. Click the "Done" button to navigate to Home page;
3. The chosen color must be applied during the game.

Instructions to the Competitor

1. Please create the project with the correct package name (Android)/Organization Identifier (iOS). The naming convention is edu.ws2024.aXX.am;
2. You should save the project in the folder XX_Module_A_AM;
3. You should rename the generated apk (Android) / app (iOS) file as XX_Module_A_AM.apk (Android) / XX_Module_A_AM.app (iOS) and save it in the root of the XX_Module_A_AM folder;
4. The whole XX_Module_A_AM folder should be pushed to the provided remote Git repository in time;
5. Note: "XX" is your workstation code.