SASTA OLIPHANT SCIENCE AWARDS

Prize Winner

Programming, Apps & Robotics

Year R-2

Sophie De Silva

St Aloysius College

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Australian Government Department of Defence

Government of South Australia Department for Education

SASTA South Australian Science Teachers Association

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INTRODUCTION

The aim of the entry

Providing children with exposure to Information Technology during their early years is a great way to introduce them to the modern and complex world we live in. Oliphant Science Awards provides an opportunity for children to take challenges, risks, think out of the box and accept failures when they are young.

Scientific purpose

The scientific purpose of developing an animated interactive quiz and a gaming app is to enhance my daughter's understanding of basic programming concepts, improve her problem-solving skills, and foster machine thinking. By engaging her in coding, she can come up and new ideas, visualise, improve logical sequencing and most importantly becoming patient. This early exposure to coding principles aims to build a foundation for future learning in computer science and related fields.

This animated interactive quiz and the gaming app provides kids with a short quiz challenge about Dinosaurs and a simple game to improve logical skills, quick decision-making skills and most importantly to have fun.

Programming Software

ScratchJr programing application has been used to develop the app.

Potential applications

ScratchJr can be used to develop simple apps for children. It works well for things such creating simple games, stories, quizzes, etc.

APP REQUIREMENTS AND LOADING INSTRUCTIONS

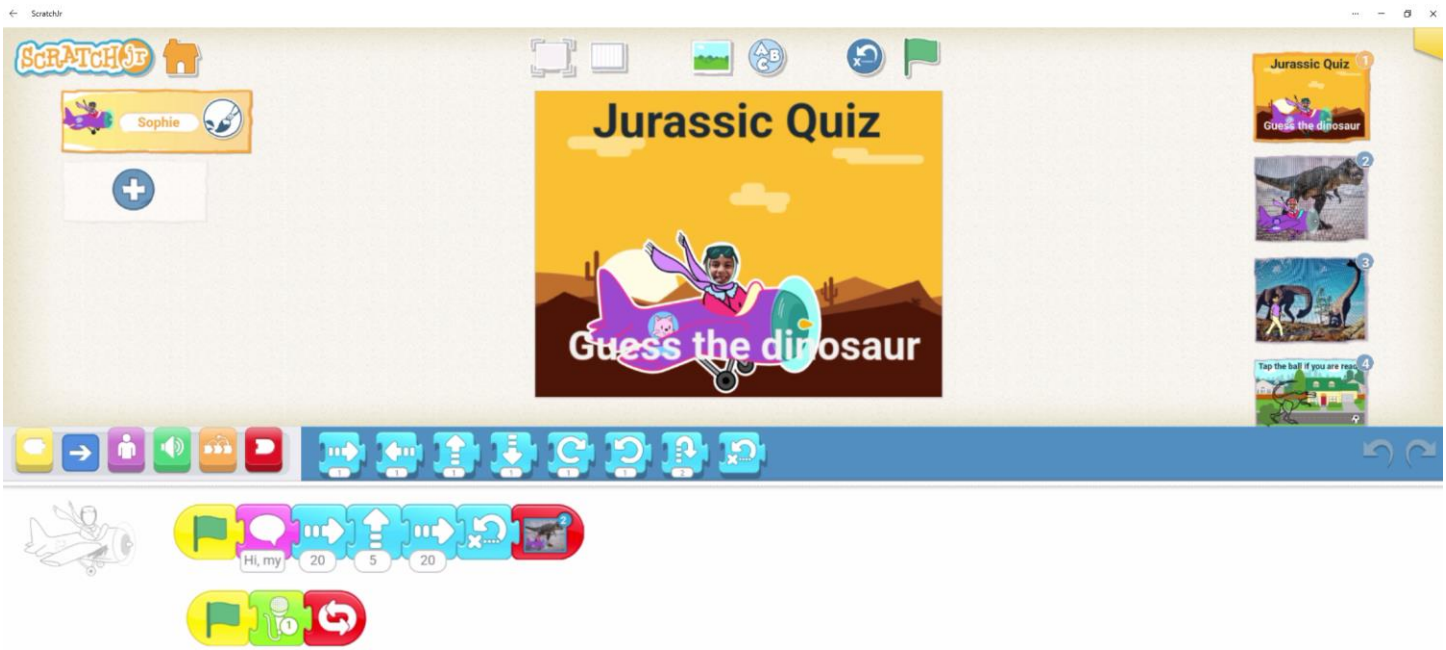
- ScratchJr runs on iPads, Android tablets, iPhones and Android mobile phones.
- ScratchJr recommends iPads running iOS 11 or higher and Android tablets running Android 7 or higher.
- This app was developed on an Android mobile phone.
- You need to have ScratchJr installed on your device prior to executing or using the app.
- ScratchJr can be downloaded free via Google Play Store or Apple App Store
- If the app is shared with you via email, please open the email on your device and download the attachment (*0610-023.De Silva.JurrasicQuiz.sjr*).
- Once downloaded, open the app via ScratchJr (needs to be installed already on your device as above)
- When you tap Open in 'ScratchJr', you will see the project you shared on the Home screen, wrapped in blue ribbon.

(Illustrative purposes only)

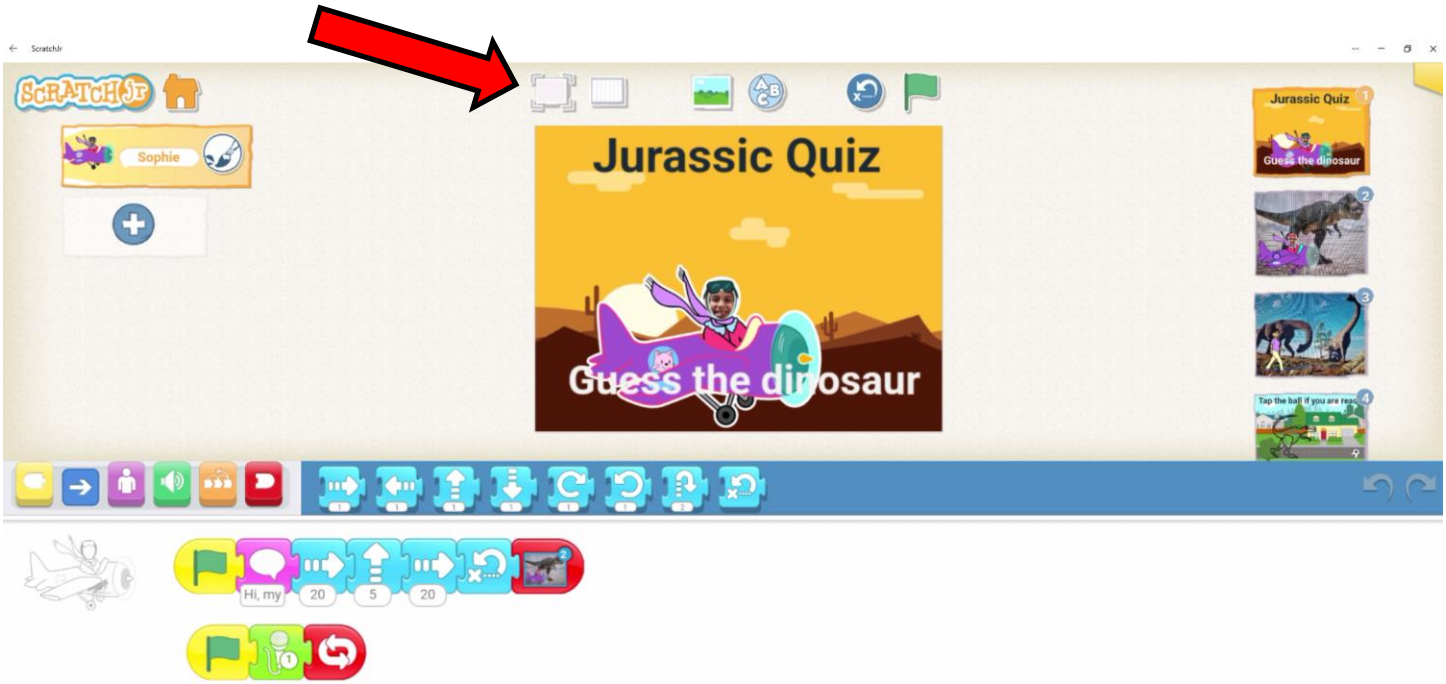
- You can click on the shared project (Jurrasic Quiz) to open the app.
- Please note after you have opened the project once, the blue ribbon will disappear from the Home screen.
- This app contains some cool sounds, sure increasing the volume of your device.
- App downloadable file has been attached in this report and also included in the submission for convenience.

APP EXECUTION

1) Below is the lading page when you open the app.

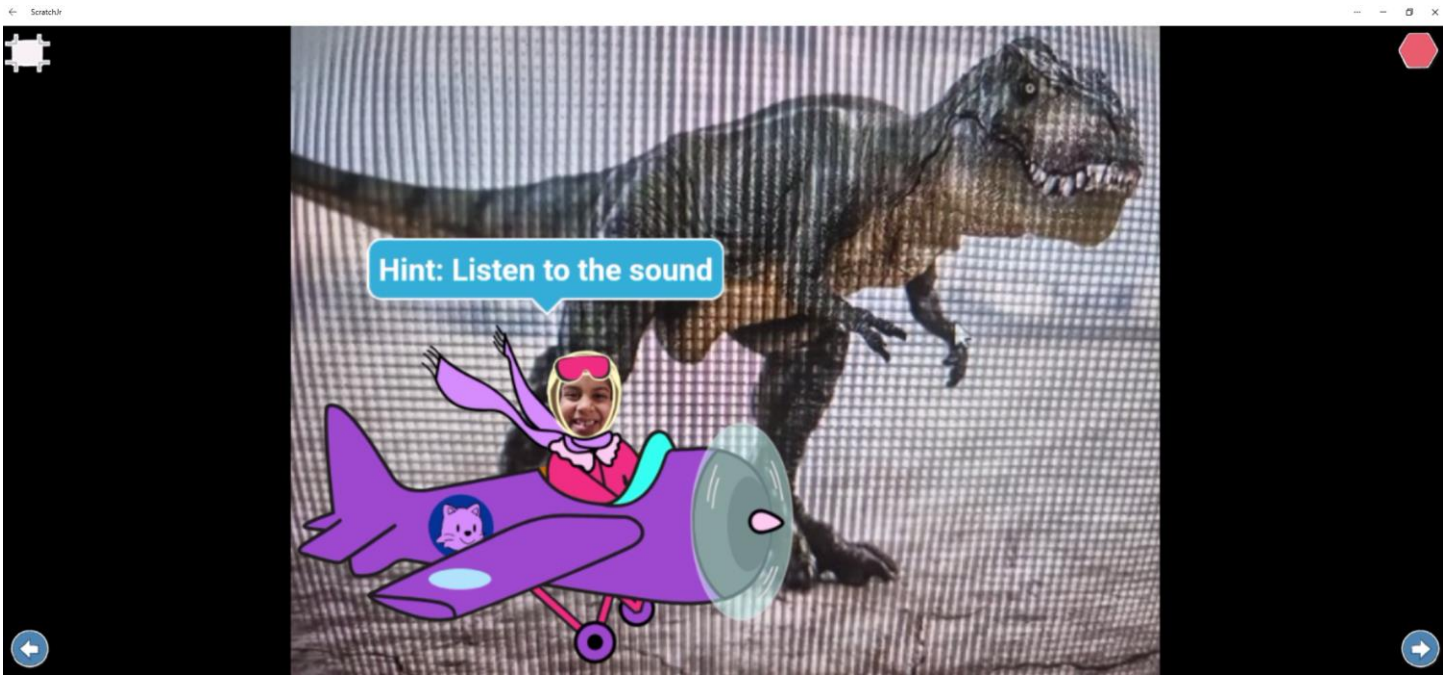


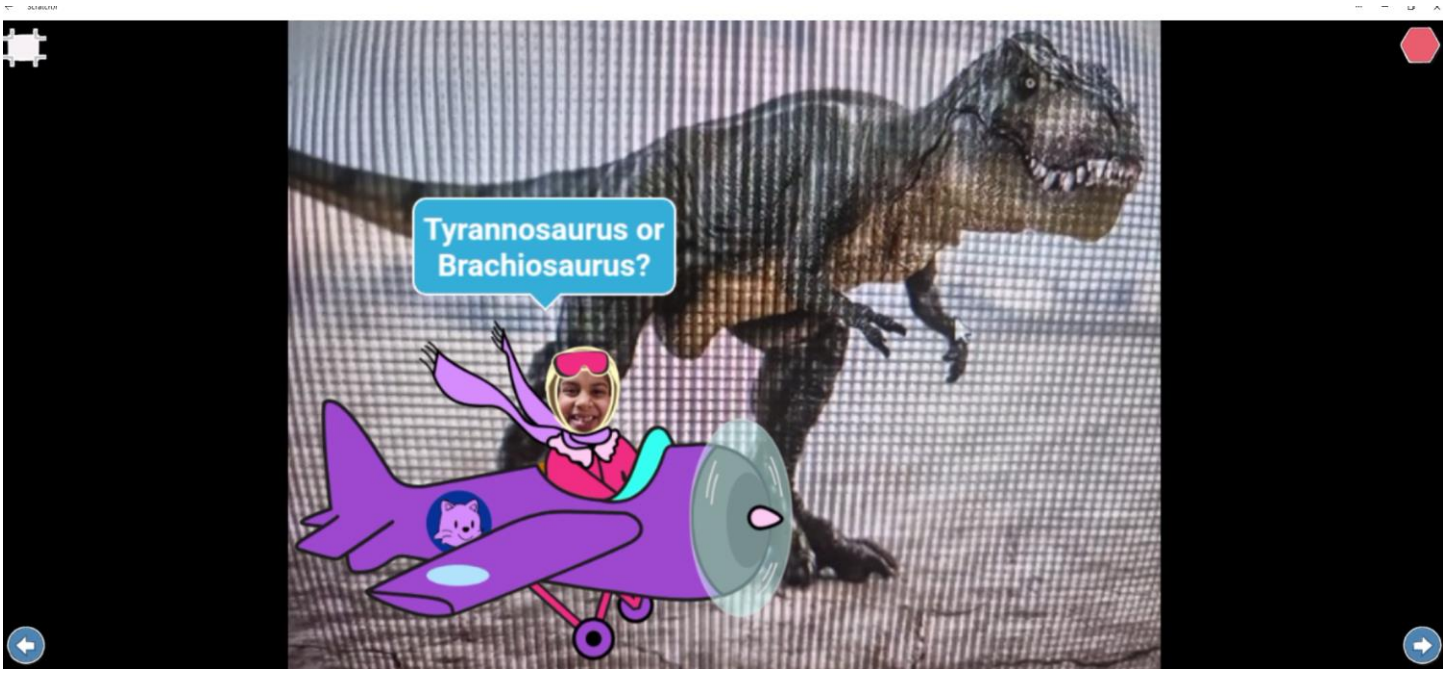
2) Click on Presentation mode. This will expand the stage to the full screen.

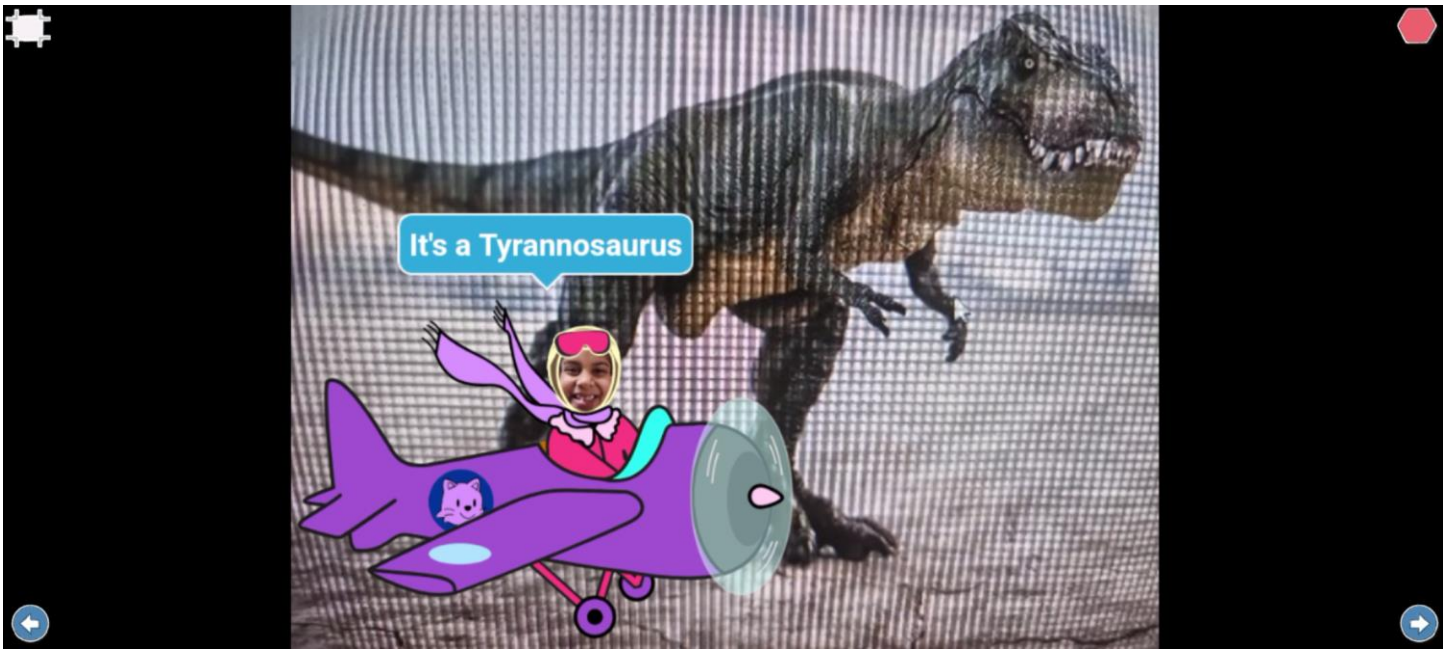


3) Click on the Green flag to execute programming scripts.

4) Once executed, the following screens and activities will be displayed without any user input. User will have to pay attention to the screen and interact accordingly. Also please note that these screens will have animations, images, sounds, quizzes, character information.


Hint: Listen to the sound


Tyrannosaurus or
Brachiosaurus?


It's a Tyrannosaurus

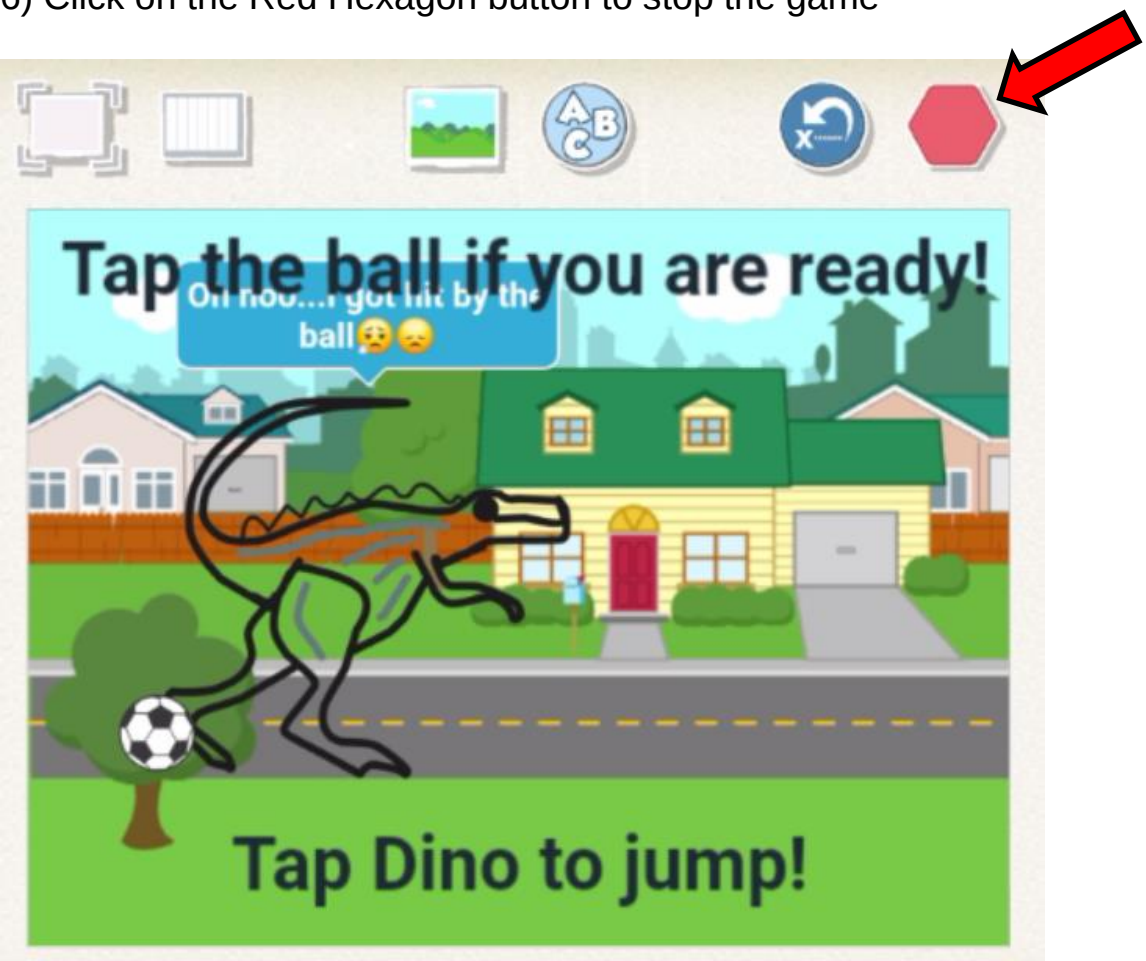
Shhh..quiet!

Velociraptor or Brachiosaurus?

It's a Brachiosaurus

5) After above screens, you will be landing on the game screen. Unlike previous screens, game screen will require user input to continue. User needs to carefully read the instructions displaying on the screen and provide user input accordingly to play the game.

6) Click on the Red Hexagon button to stop the game



7) You can click on this arrow to return to previous screens if you want.

APP LIMITATIONS AND BUGS

1) ScratchJr only allows to create maximum of 4 screens

2) Can’t import images when creating a Character. Need to reply on character templates included in ScratchJr. If you would like to create a new Character you will need to draw.

3) Just like any other coding app, ScratchJr may crash occasionally and have its own unique glitches.

4) However, overall, ScratchJr is a pretty good coding platform where you can create educational and fun apps for kids who does not have any experience in coding.

APP PROGRAMING OVERVIEW

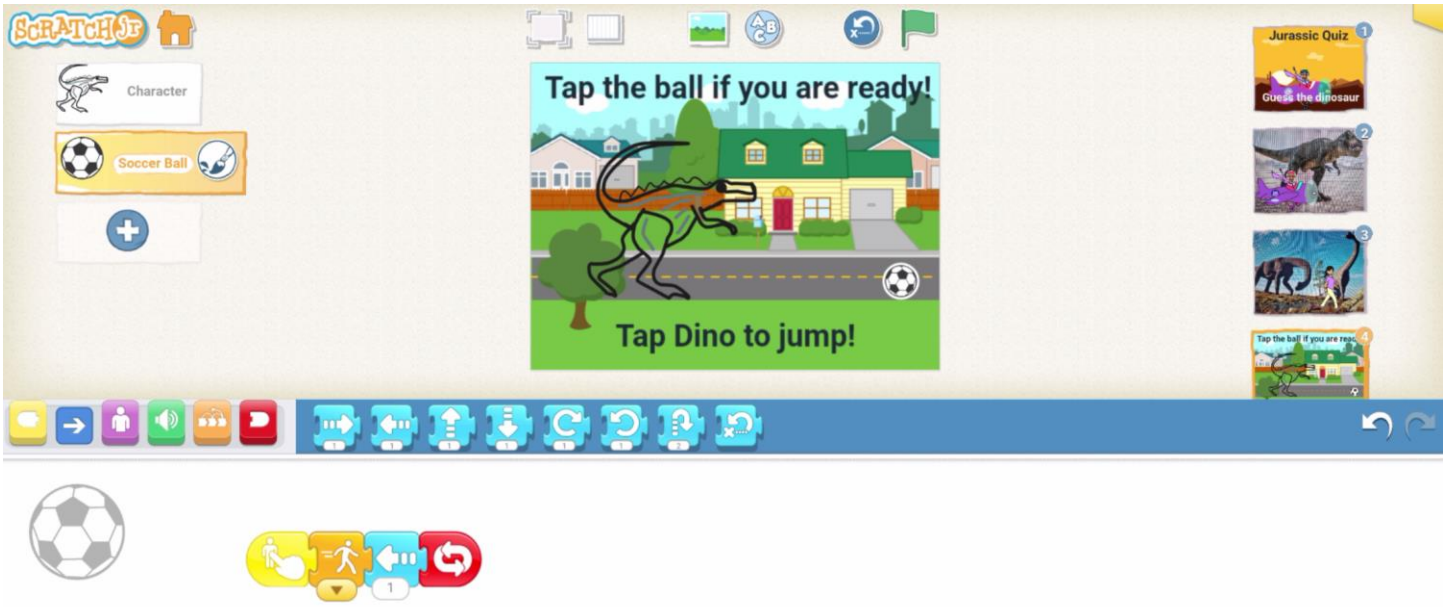
1) Landing screen:

2) Quiz 1 screen:

3) Quiz 2 screen:

4) Game screen Character 1 - Dinosaur:

5) Game screen Character 2 - Ball:



APP DOWNLOADABLE FILE

0610-023.De Silva.JurrasicQuiz.sjr

Acknowledgment of any external support provided to the entry

Father of Sophie De Silva guided Sophie on ScratchJr User Interface and how to code on ScratchJr initially. In addition, Father of Sophie De Silva helped with searching dinosaur voices/ images via web, drawing dinosaur character and also helped when Sophie was facing glitches in ScratchJr during coding.

References

https://scratchjr.org/

https://www.dinosaurfact.net/Sounds.php

https://www.theguardian.com/science/2019/apr/16/baby-t-rex-for-sale-ebay-paleontology-outcry#img-1

https://a-z-animals.com/media/2022/06/two-brachiosaurus-near-a-stream-in-the-nature-this-is-a-3d-render-picture-id1278212077.jpg