COOLEST PROJECTS

HOW TO BUILD A PROJECT

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These worksheets will help you to design and build a project from start to finish!

In any project, there are a number of steps that need to be carried out. For example, some of the steps a person might carry out when building a house are:

1. DECIDE TO BUILD A HOUSE
2. DRAW UP PLANS
3. GATHER MATERIALS AND BUILD

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READY TO START DESIGNING YOUR OWN PROJECT?

LET'S GO!

NAME

DATE

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COOLEST PROJECTS

THESE ARE THE STEPS YOU WILL CARRY OUT

GENERATE IDEAS

DESIGN AND CREATE

TEST AND DEBUG

PRESENT AND REGISTER

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1 GENERATE IDEAS

Every project has a purpose! You need to define what your project does and who it is for.

Who will use your project? This could be:

- A specific group of people such as the people in your Dojo or school, or in your sports team or dance group
- A general group or category of people, such as all young people of a certain age, people with a disability, parents, pet owners, etc.

I AM MAKING THIS PROJECT FOR

I WANT TO HELP THEM TO (TICK WHERE APPROPRIATE)

- [ ] Have fun
- [ ] Share something
- [ ] Learn about something
- [ ] Do something else
- [ ] Prepare for something
- [ ] Organise an event (e.g. a birthday party)
- [ ] Create something
- [ ] Find something
- [ ] Do their homework
- [ ] Make friends

I WANT TO HELP THEM BECAUSE

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1

WHO ARE YOU HELPING?

In this step, work with a person who will use your project (if you can).

Now that you know who will use your project, put yourself in their shoes and try to understand their needs. This is called empathising.

Become a detective and ask questions

Try to find out the answers to some of the questions on the right and maybe think of your own questions too.

HOW WILL YOUR PROJECT HELP THEM?

WHAT WOULD THEY LIKE TO BE PART OF THE PROJECT?

WHAT DON'T THEY WANT?

HAVE THEY USED THIS KIND OF TECHNOLOGY BEFORE?

Are they comfortable with devices such as

☐ Computers? ☐ Smartphones or tablets?

When you're making something, it's important to always think about the needs of the person or people who will use your project.

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Try drawing pictures or writing words

What will you make?

Sometimes it can be hard to come up with ideas, but that's OK, the ideas don't have to be perfect! The main thing is to fill all three boxes with your ideas. You can improve them later.

1

GENERATE IDEAS

Think BIG!

Come up with three possible solutions to the problem you've picked

What if we had a...?

Don't think about whether the ideas are good or even realistic!

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1 GENERATE IDEAS

How will you make it?

Look at the ideas you wrote down and sketched out, and pick your favourite one.

Think about how you might go about making it real.

What will your project do?

Imagine telling people about your project idea. What might they think your project will do that it actually won't do?

It's good to define what your project will not do before you start building it, because then you can focus on making it great at what it does do!

What technology will you use?

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2 DESIGN AND CREATE

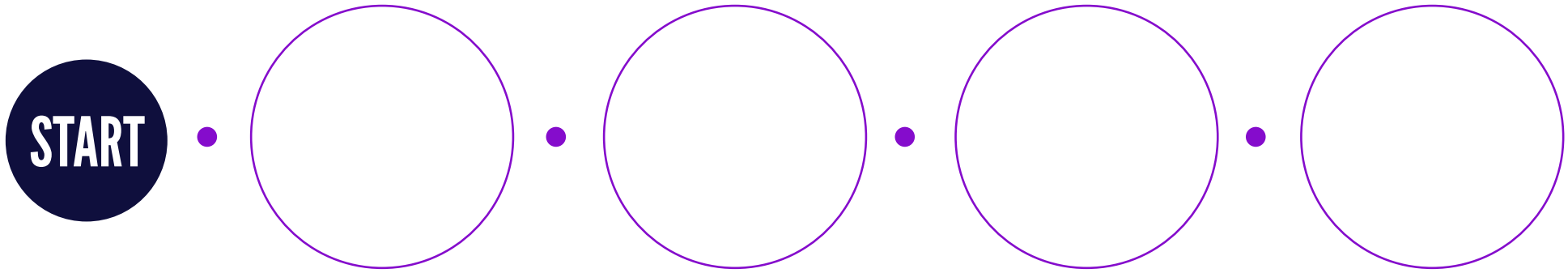
It's time to design your project!

First, plan out the overall design for how it will work. Use this page to list the things it will do, and in what order it will do them.

SOME QUESTIONS TO THINK ABOUT HERE ARE:

- Will there be different parts to your project?
- How will they be organised and connected?
- Will a person interact with the project? What steps will they go through when using it?
- Will there be things like pictures, characters, buttons, or sounds?
- Will there be a start and an end?
- What information will you need?

Consider the steps a user will go through to successfully interact with your project and draw each one in the circles. Aim to create a story or journey you want your user to follow.



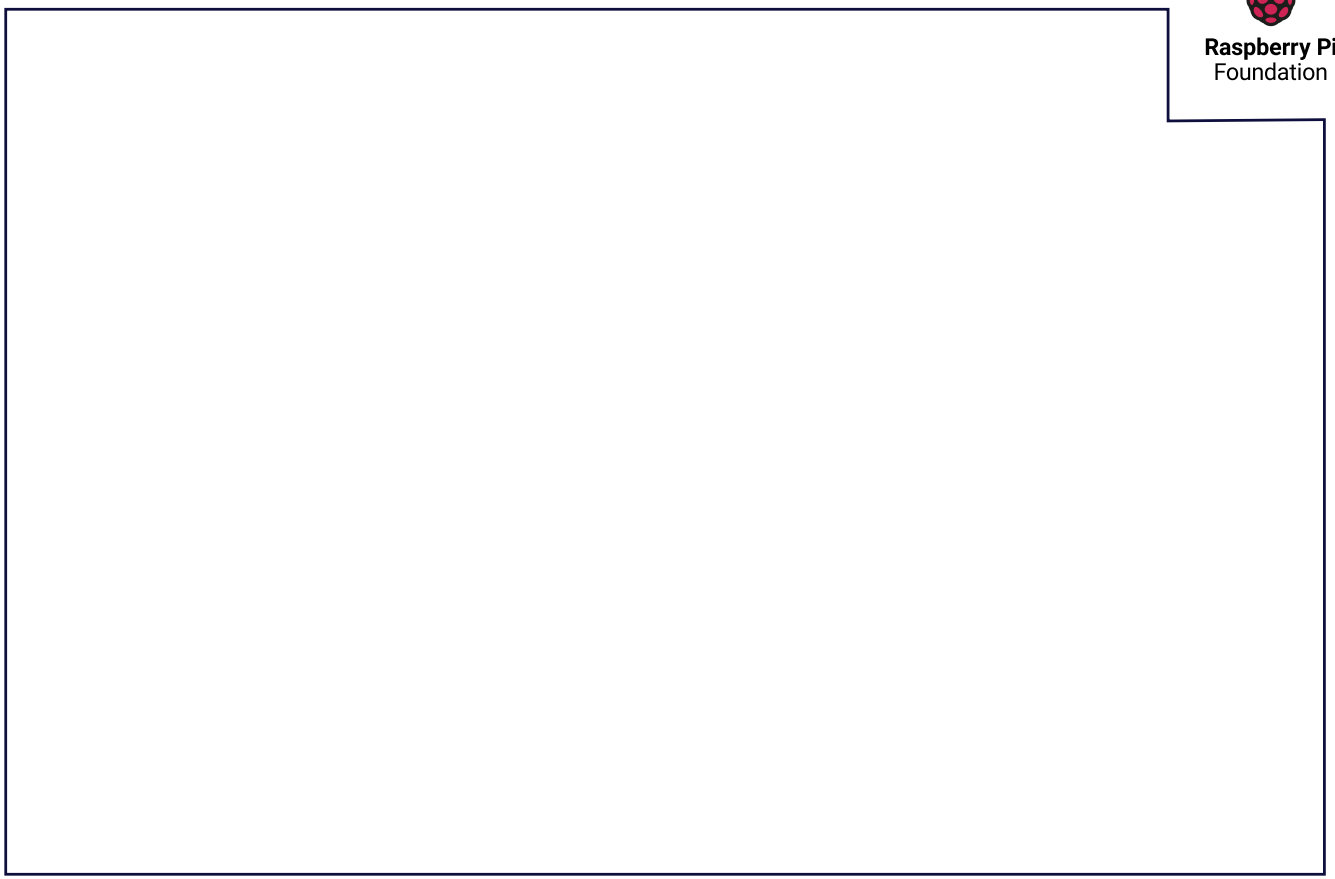
2

DESIGN AND CREATE

Next, sketch out how your project will look.

If you're making a software project, draw pictures of the screens you'll create. If yours is a hardware project, make a sketch of what it will look like in action. If it's an animation or story, draw some of the main scenes and characters.

- What is the first screen?
- How will a person navigate your project? (Will they need to navigate it?)
- How will a person learn how to use the project?
- What happens at the end?
- Will your project use feedback to tell the user things, e.g. with flashing lighs, sound, or messages?



Once you're happy enough with your design, it's time to get building! Use these sheets as your guide.You don't have to build the whole thing at once – do just enough so that somebody can try out a little bit of it. Then come back here and move on to the next step before continuing to code or build! This stage of your project is the prototyping stage. A working version of your project that is ready to try out is called a prototype.

Don't worry about getting it perfect the first time – you can improve your prototype after you get some feedback from your user!

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TEST AND DEBUG

PERSON TESTING:

DATE:

WHAT DID THEY TEST?

Show your prototype to somebody and have them try use it! Don't help them immediately if they have problems or get stuck – you won't be there to explain things every time someone uses your project. Take some notes on this sheet about how the testing goes, so that you can decide whether you need to make any changes. Ask them questions about the thing they tested.

1 What did they think of it overall?

- It's great, I love it!
- It was OK.
- Something needs to change.

2 What parts worked? What did they like best?

3 What improvements could be made? Is anything missing?

HOW DID THE TESTING GO?

Are you done? Do you need to go back and do some more work? When working on a project, you usually repeat some of the steps above a few times, testing your prototype each time. This is called iterating, and designers and coders all over the world do it every day! It's normal for a project to go through quite a few iterations (some projects are never fully finished!) before it's done.

DECIDE WHAT YOU WILL DO NEXT

- Generate new idea
- More coding or building
- Do some more designing
- Finished

PLAN OF ACTION

If you're going back to do some more work on the project, then return to this section afterwards and run some tests!

2 DESIGN AND CREATE

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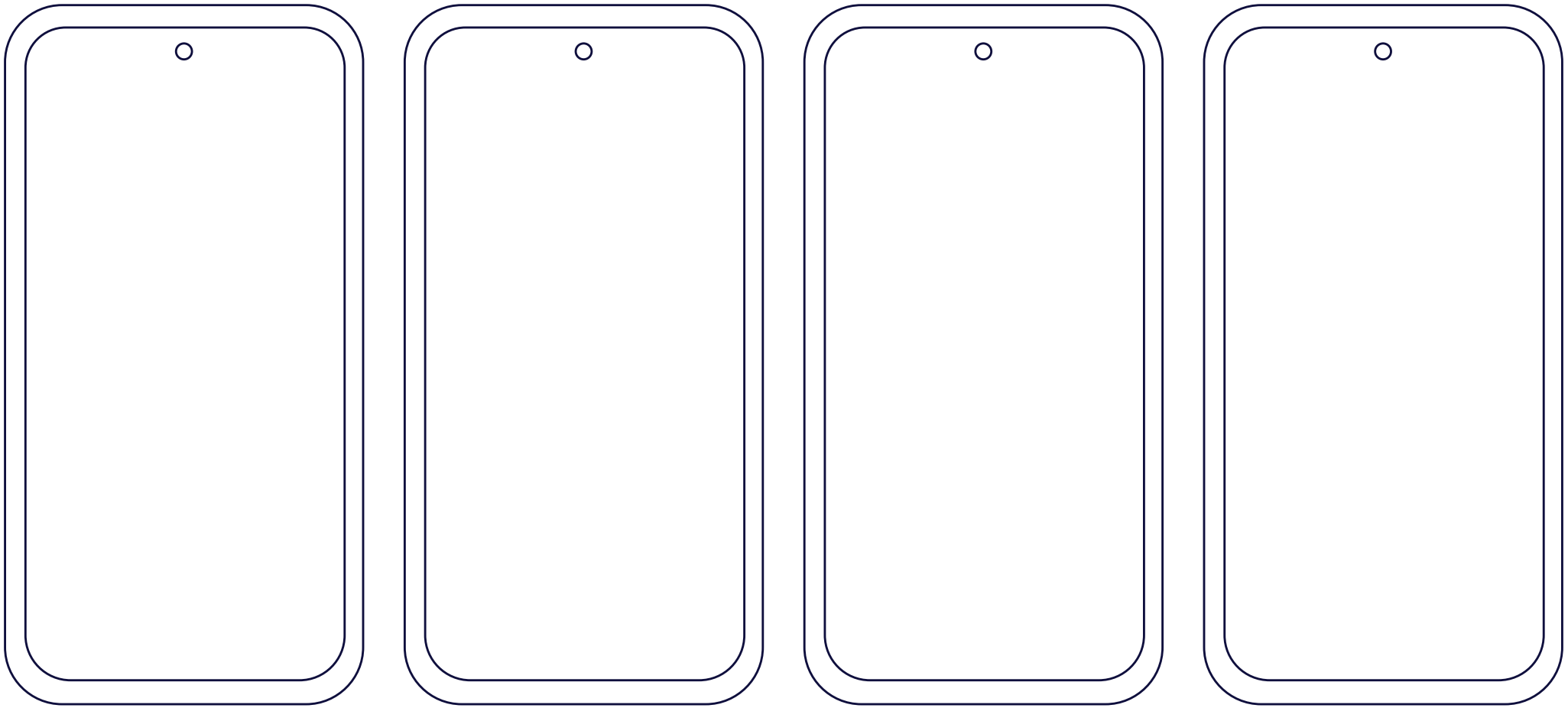

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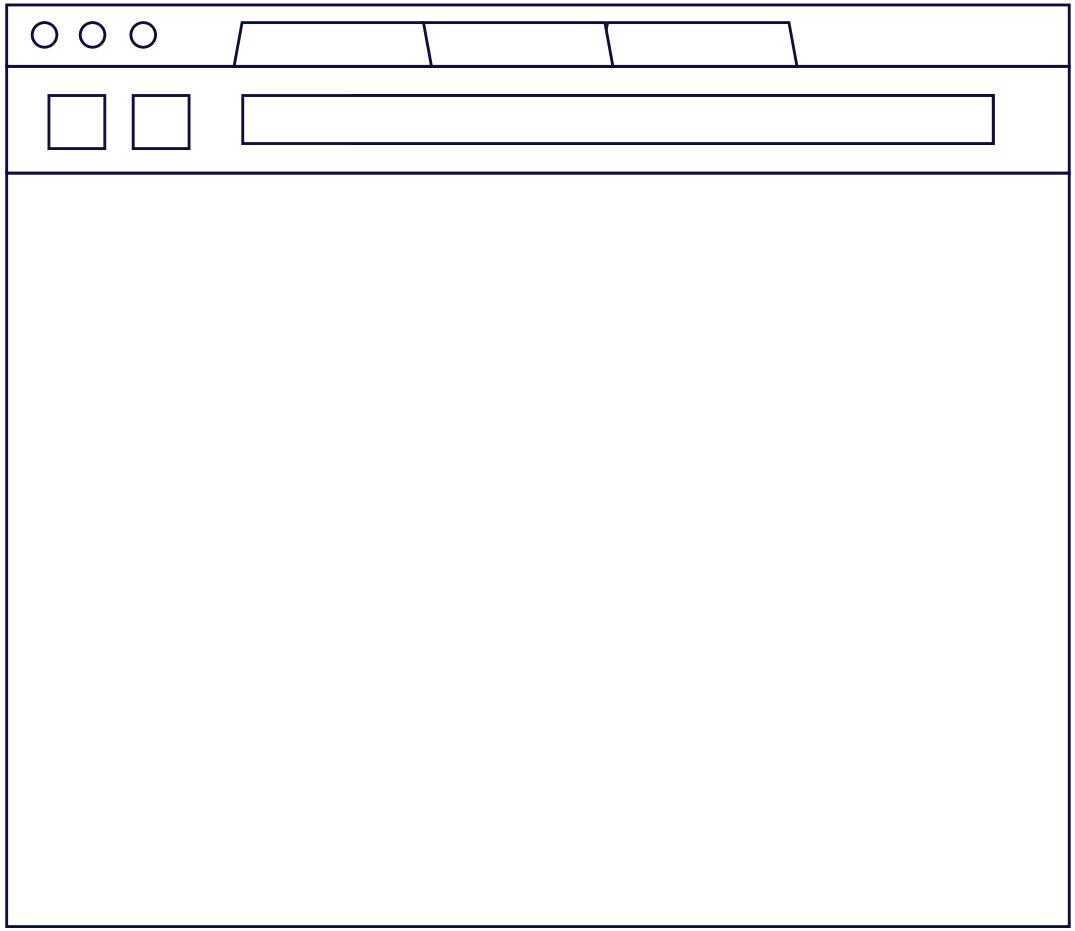

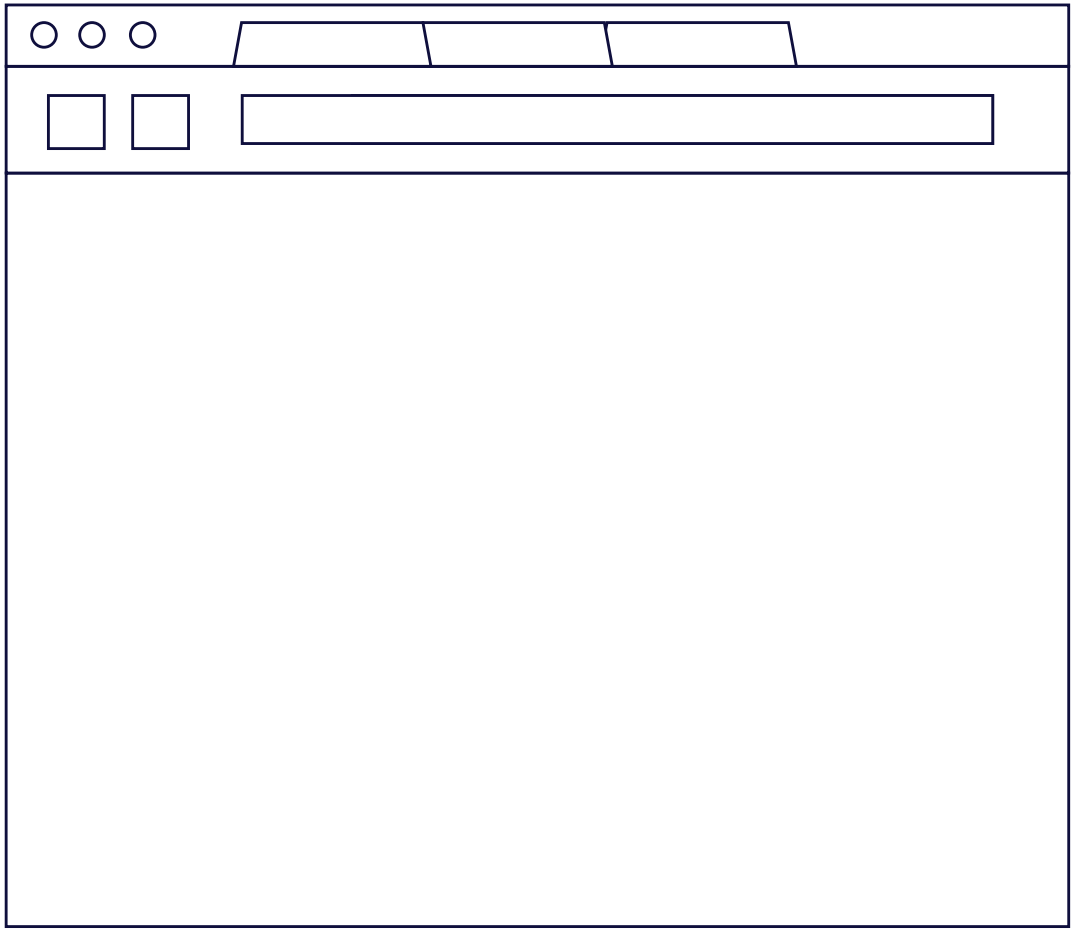

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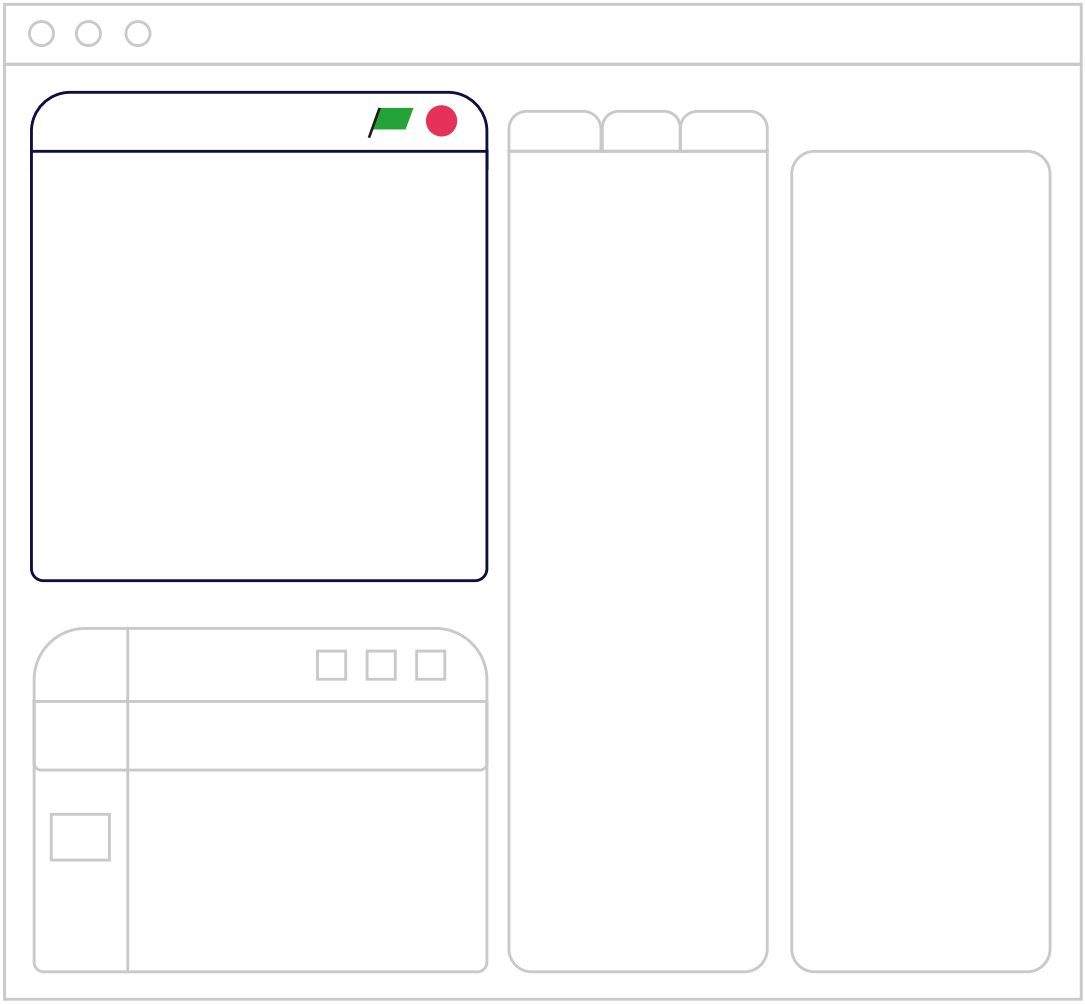

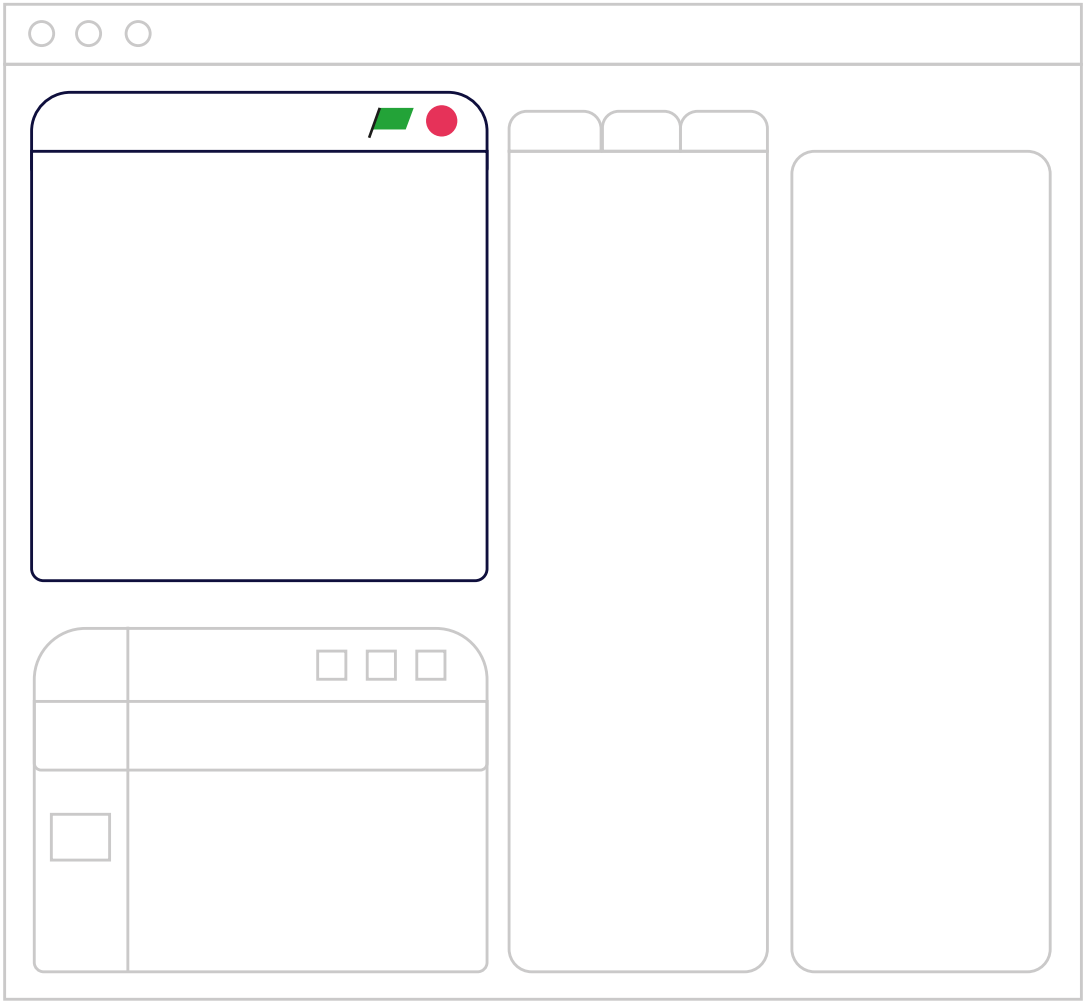

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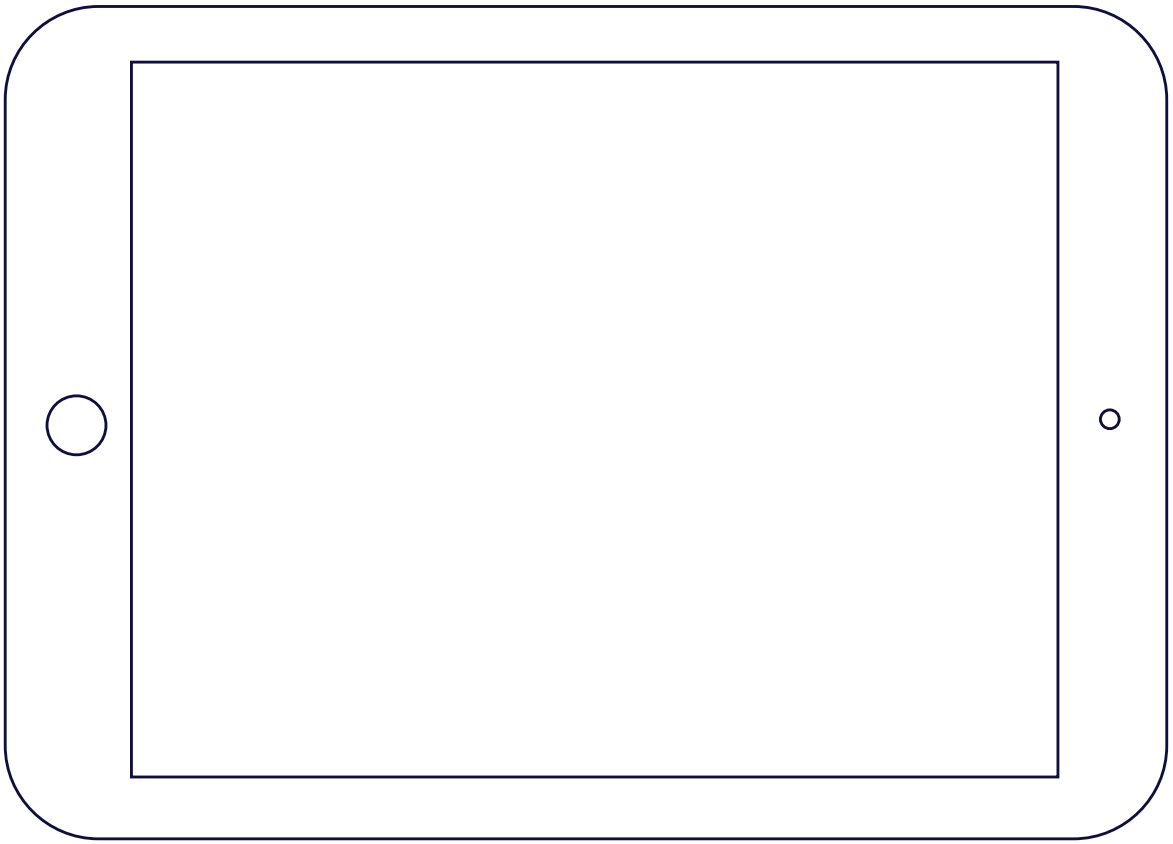

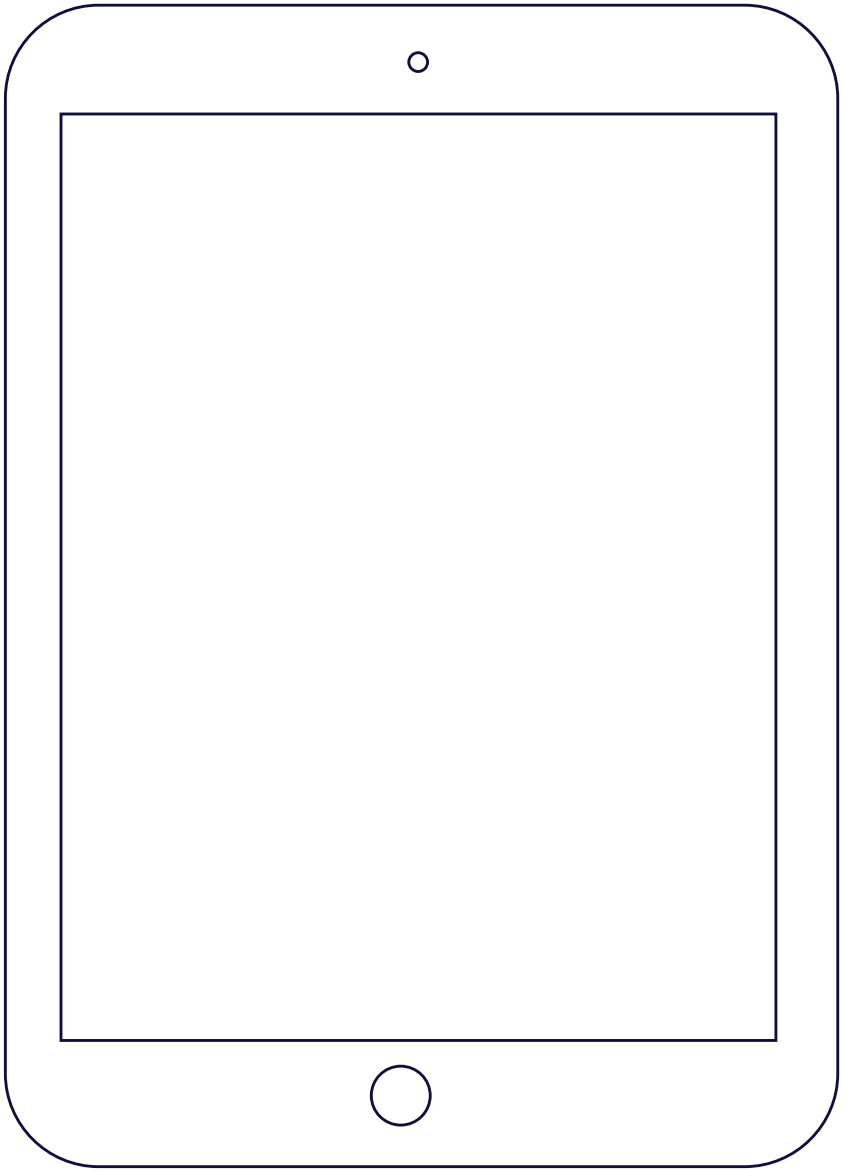

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PRESENT AND REGISTER

Explain how you created your project, what issues you faced, and any moments of glory or despair.

Even if you don't complete your project, your entry can still be cool if your story is told well.

When you are ready, you can begin to register your entry online at coolestprojects.org.

For your project to be accepted, it's important that you answer these three questions as best you can:

- Tell us about your project. Why did you choose to make this project?
- What did you find difficult while making your project and how did you work it out?
- Is there anything you would do differently or you would add if you had more time?

PRESENT YOUR ENTRY

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IF YOU HAVE MADE A SCRATCH PROJECT

Type the answers to the three questions in your online registration form and into the description of your project on the Scratch website.

IF YOU HAVE MADE ANY OTHER TYPE OF PROJECT

You will need to create a video that shows your project in action and answers the three questions. You may have collected photos and footage while you worked on your Coolest Projects creation, which you could include in your video.

SOME TIPS FOR MAKING A GREAT VIDEO

- Always try to shoot videos and photos in landscape format (sideways or widescreen). This helps the judges get a detailed view of your project.
- Make sure that people speak clearly in the video and give explanations that are easy to follow. Use a microphone if you can, but otherwise make sure people's voices can be heard by your recording or filming device. If some footage is impossible to hear, subtitles can easily be added in most video editing software.
- If you've never made a video before, don't panic. Two of the simplest and easiest packages available are Windows Video Editor (PC) or iMovie (Mac), and both are free! They both have a drag-and-drop interface and allow you to arrange and edit each individual component of your film, including videos and photos.
- Before you register, ask someone who is not involved in the project to watch your video. Ask them if there were any parts of the video that were hard to understand and find out why. Remember: The judges are smart folks, but you are the expert on your project, so it's important that you explain it clearly.

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REGISTER YOUR ENTRY

Your project and answers must be in English

You can ask someone to translate for you if you need to, or you can use subtitles.

Your project must be shared so that it can be viewed by other people

Ask your parents or guardians for permission to upload and share your project to a video site like YouTube or Vimeo. If you are younger than 13, your parents or guardians will need to upload and share your video on your behalf.

All Scratch projects must be shared on the Scratch website to be accepted.

Now it's time to register your entry online at coolestprojects.org

USE THIS CHECKLIST TO MAKE SURE THAT YOUR PROJECT CAN BE ACCEPTED

- [ ] I am 18 years old or younger.
- [ ] I did not register this project before or I have made a big change to this project since last time.
- [ ] I am only registering one project.
- [ ] My project is displayed or presented in English.
- [ ] My video shows my project and the code that I used to make it. (Not needed for Scratch projects.)
- [ ] If I am 13 years old or older, I have uploaded my video to YouTube or Vimeo. If I'm younger than 13, I have asked my parents or guardians to upload my video to YouTube or Vimeo on my behalf. (Not needed for Scratch projects.)
- [ ] I have disabled comments on my project or video.
- [ ] The link to my project is not private, and I have checked that my project can be viewed by anyone.

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REGISTER YOUR ENTRY

When you register your project, you will need to choose which **category** it fits into and which **topic(s)** it addresses.

The **categories** split projects into six types, based on how and why they were made (choose one):

- Scratch.
- Web.
- Mobile Apps.
- Hardware.
- Games.
- Advanced Programming.

The **topics** show the judges what your project is about. You can choose a maximum of three topics when you register:

This project…

- …relates to a problem in my community.
- …relates to the environment.
- …is about health or medicine.
- …is all about having fun.
- …is artistic or creative.
- …teaches people about something.
- …is about me, my family, or my culture.

Choose the Community topic if your project is designed to increase awareness of (or solve) a problem you have noticed in our society that you feel is important. This could relate to mental illness, homelessness, discrimination, or social justice, or it could address any sort of condition or lack of behaviour that has negative consequences for a group in your community.

Choose the Environment topic if your project is designed to increase awareness of (or solve) environmental issues that are important to maintaining or repairing our natural environment. This could relate to earth science, climate change, nature, biodiversity, or other environmental topics.

Choose the Health/Medicine topic if your project is designed to raise awareness of (or solve) problems that are important to the health and wellbeing of people in our society. This could relate to COVID-19, healthy lifestyles, diet, exercise, disease, treatment, prevention, or other health and wellbeing topics.

Choose the Fun topic if your project is designed to entertain people who engage with it. It could help people relax, have fun, or think about something they enjoy. This could be a game, film, story, toy, or any other entertaining and engaging digital object.

Choose the Art topic if your project is a creative piece designed to be appreciated for the beauty or emotional power of its sounds and visuals, with or without interaction from the audience. This could be a piece of music, visual art, an animation, a drawing, a collage, a film, or any other aesthetically interesting digital object.

Choose the Education topic if your project is designed to help people learn something or practise skills, or to impart knowledge to the user. This could be a game, a film, a story, a quiz, an animation, or any other educational digital object.

Choose the Identity topic if your project is designed to share with the user an aspect of your life, culture, or personality that is important to you. This could be related to your beliefs, the cultural or social norms where you live, your personal or gender identity, or anything else about your life that is personal to you or someone close to you.