

COURSE

**APP DEVELOPMENT
HOME STUDY**



FOLLOW-UP SESSION

DEVELOPING AN APP

Objectives

CORE

- Be able to develop initial app ideas into a technical prototype

CHALLENGE

- Be able to plan and carry out effective research into your potential users and markets
- Be able to identify the best revenue stream for your app
- Be able to improve the functionality and usability of your technical prototype

Course activities

Activities and worksheets

1. Conduct market research
2. Conduct a user survey
3. Review paper designs
4. Refine your designs
5. Collect up assets
6. Develop your App Lab skills
7. Planning your build
8. Create your app
9. Plan a user test
10. Conduct a user test
11. Refine prototype
12. Develop the business model
13. Prepare final pitch
14. Reflect on your project

Recap on progress so far

At the end of the App Development course you had produced:

- An app idea
- A user profile
- An elevator pitch
- A list of user needs and features
- Paper designs of your app
- Click through initial prototype
- Presentation of your idea

You now need to conduct some more in depth research and develop a technical prototype.



Activity 1 - Conduct market research



Activity

There's little point in designing an app that offers something someone else is already doing well – so make sure you know who your competitors are.

Go onto the app stores and search for apps that are similar to your ideas. For example, if your app helps dog walkers, search for “dog walking” and see what comes up.

Action

If you find a similar app to the one you are developing think about how you could make your app different - e.g. aimed at a different audience or using different features.

ACTIVITY 1

CONDUCT MARKET RESEARCH

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App idea		Number of similar apps ☐ None ☐ Up to 5 ☐ More than 5	
For the existing app closest to your app idea complete the following			
Name of app	Price	Number of downloads	App rating 
Target user	Features meeting user needs		App reviews

There's little point in designing an app that offers something someone else is already doing well. You need to make sure you know who your competitors are. Divide your mini elevator pitches amongst your team. For each, find related apps that are already available.

NAME

Activity 2 – Conduct a user survey

During the App in a Day course you created a user profile describing one of your potential users. It's now time to find out how accurate your profile is by creating a user survey.

You never really understand a person until you consider things from his point of view.

Harper Lee



Activity 2 – Conduct a user survey



Activity

Write questions that allow users to tell you if they like your app idea, or if they don't feel your app solves their problem. When you have created your survey, share it with people who you think might be interested in using your app. Include a link to your initial prototype so they can get an idea of how your app will work.

Tip

Make sure you capture the key information that would be useful to know like age, gender, where they live, occupation.

Activity 2 – Conduct a user survey

Ensure your survey has a mix of open and closed questions.

A closed question always asks things that require an either/or answer, like 'yes' or 'no' e.g.

- Do you go to this school?
- Do you like this app?

An open question allows the responder to give an answer of any length e.g.

- What features would you find useful?

Activity 2 – Conduct a user survey

Surveying tools

Use one of the following tools to create your survey:

- [Google Forms](#)
- [Wufoo](#)
- [Survey Monkey](#)
- [Typeform](#)

Email your survey to people to gain feedback on your initial prototype.



ACTIVITY 2

CONDUCT A USER SURVEY

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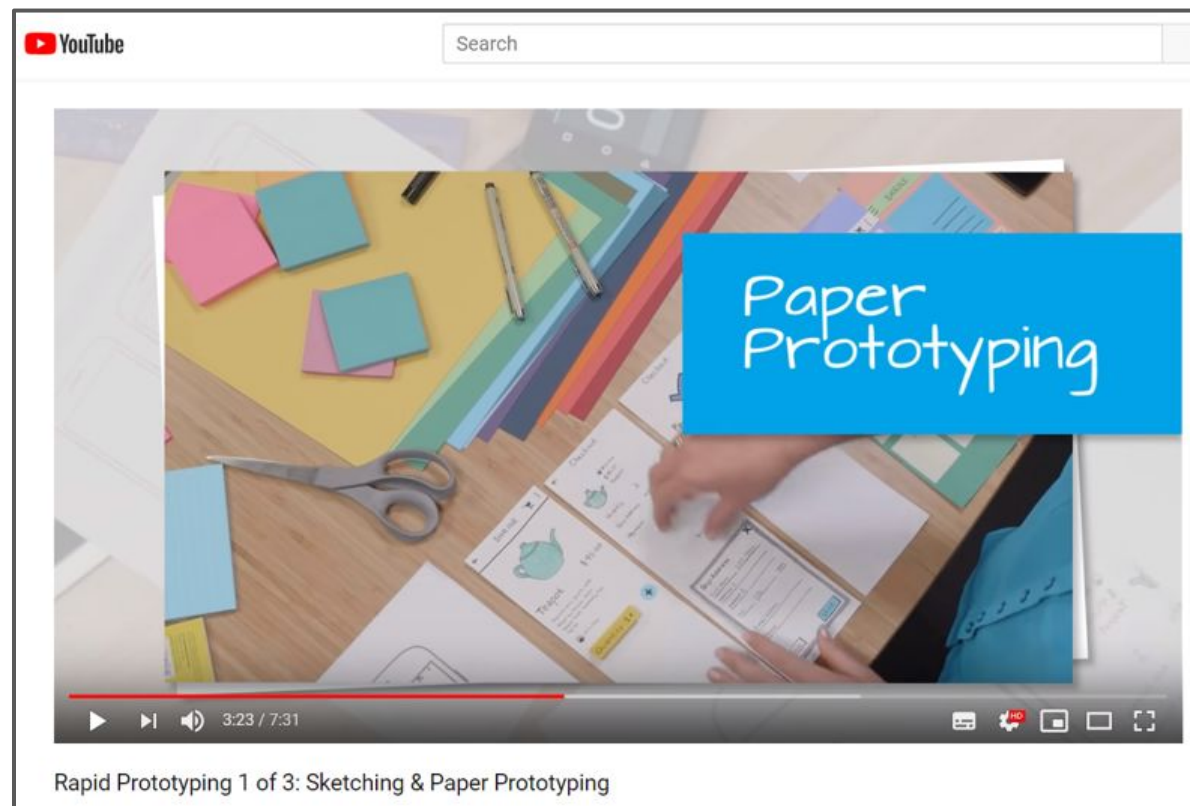
Questions for the survey	Key results from the survey

Create a survey to find out more about potential users. Use pen, paper, and a clipboard to run your survey. Or use an online form builder, such as [Google Forms](#), [Wufoo](#), [Survey Monkey](#), or [Typeform](#).

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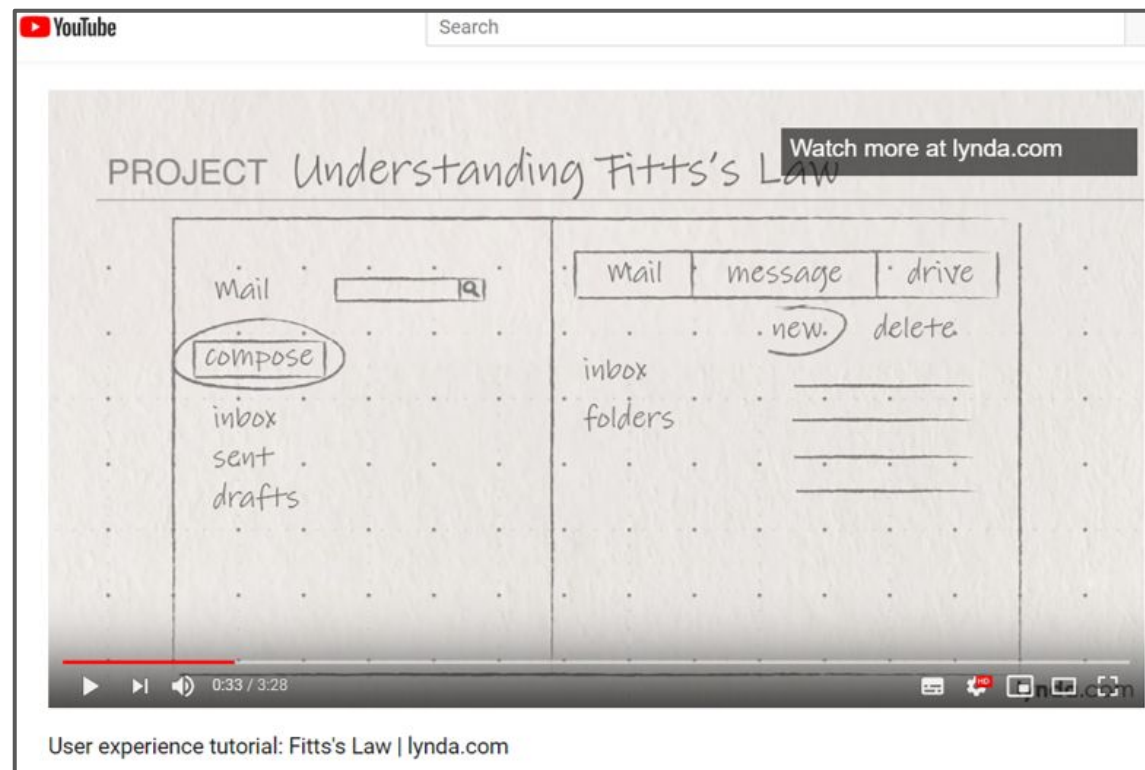
Activity 3 - Review paper designs

Use your paper designs you have created to evaluate key user interactions and the purposeful use of colour. This [video](#) (7 mins, 31s) produced by Google will explain how to do this.



Activity 4 - Refine your designs

This [video](#) (3 mins, 28s) explains the importance of the size and positioning of elements on your screen. After you have watched it answer the questions on the next slide.



Activity 4 - Refining your designs

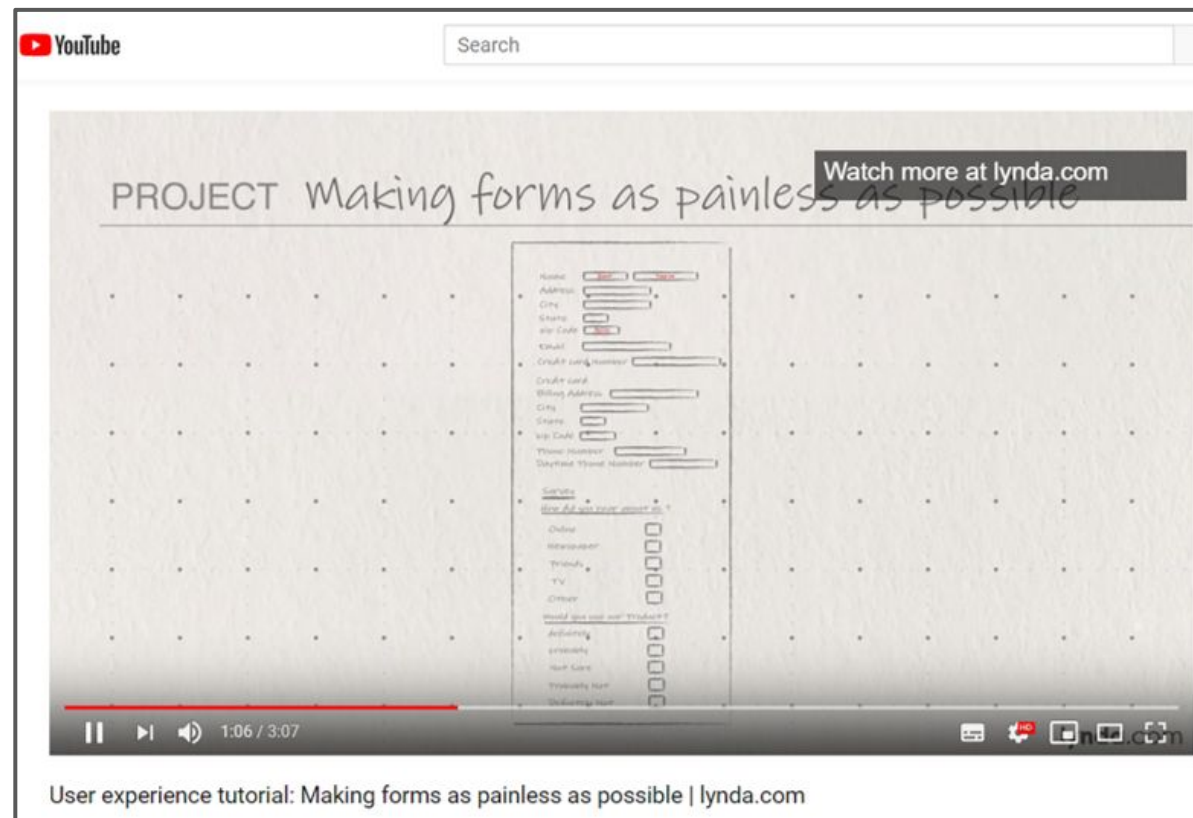
Key Message - It's faster to hit large targets closer to you than smaller targets further away from you.

Review your paper prototypes against this checklist:

- Have you made the most important buttons/links larger than less important ones?
- Are they in the right place? For example, are commit buttons on the bottom right of the screen?
- For touch screens, is there enough space between the buttons?

Activity 4 - Refining your designs

If you are asking your users to enter any information you need to review carefully what and how you are asking for the information. This [video](#) (3 mins, 7s) explains how to do this:



Activity 4 - Refining your designs

Key message – Users will only give you information if you make it easy for them and it is clear why the information is required.

Review your paper prototypes against this checklist:

- Have you only asked for essential data?
- Have you made it clear why the information is required?
- Have you asked sensible questions?
- Have you given clear instructions?
- Is your format consistent on all the screens?
- Have you used just one column on each screen?

If you are collecting personal data you also need to ensure that you are complying with GDPR legislation (see next slide)

Activity 5 - Collect up assets

If your designs contain any images or sounds you will need to either:

- create them
- buy them
- find ones that are licenced for free commercial reuse

You need to make sure that your use of images and sounds does not infringe the [Copyright, Designs and Patents Act 1988](#).



Activity 5 - Collect up assets

If you are using Google images or Explorer / Bing make sure you use the licence filters to find images with the appropriate usage licence.

- Google - click on tools > usage rights
- Bing - licence drop down menu

[Pixabay](#) has a wide range of free images that can be used for commercial purposes.

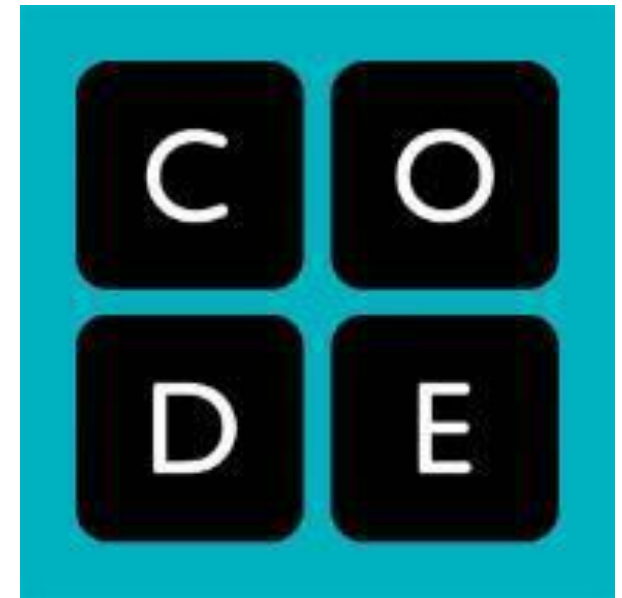
[Flickr](#) has images with a range of different usage licences.

Activity 6 - Develop your App Lab skills



Now that you have completed your market and customer research and refined your designs you should have a clearer understanding of what functionality your app needs.

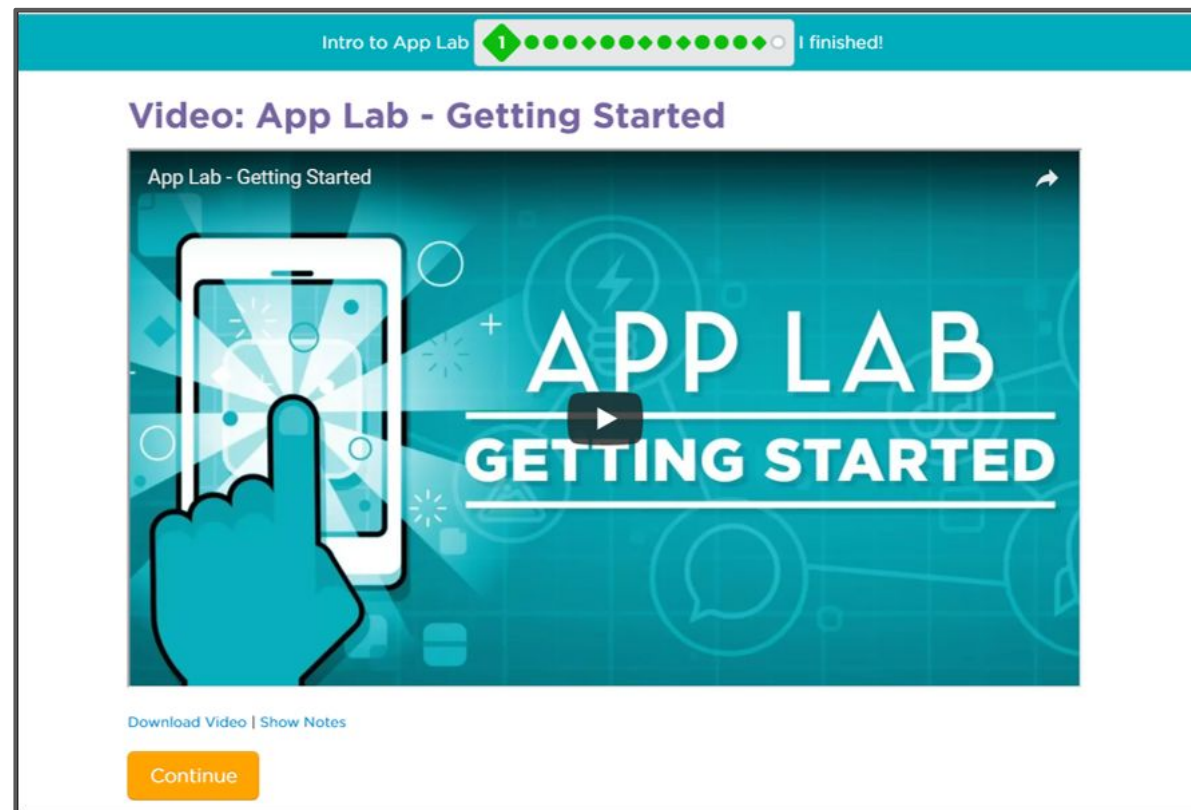
In order to implement this functionality you need to learn more about how to use App Lab.



Activity 6 - Develop your App Lab skills



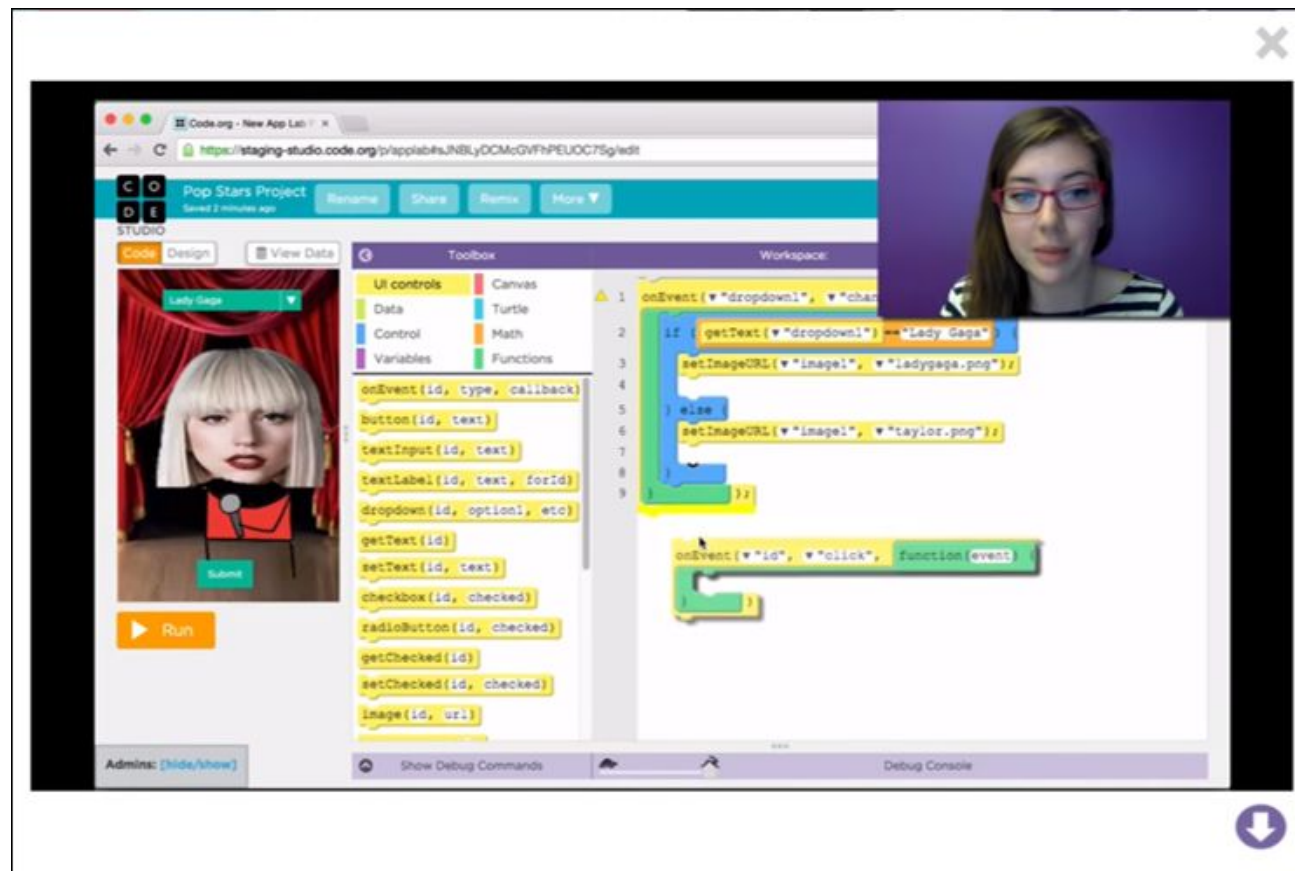
This [set of videos and tutorials](#) will take you through the basics of using App Lab to create an app. As you work your way through these exercises think about how the techniques can be applied to your app designs.



Activity 6 - Develop your App Lab skills



This [video tutorial](#) (6 mins, 11s) will take you through creating an app with a database. There are also other tutorials available here <https://code.org/educate/applab>



Activity 7 – Planning your build

Activity

You are now ready to start building your technical prototype.

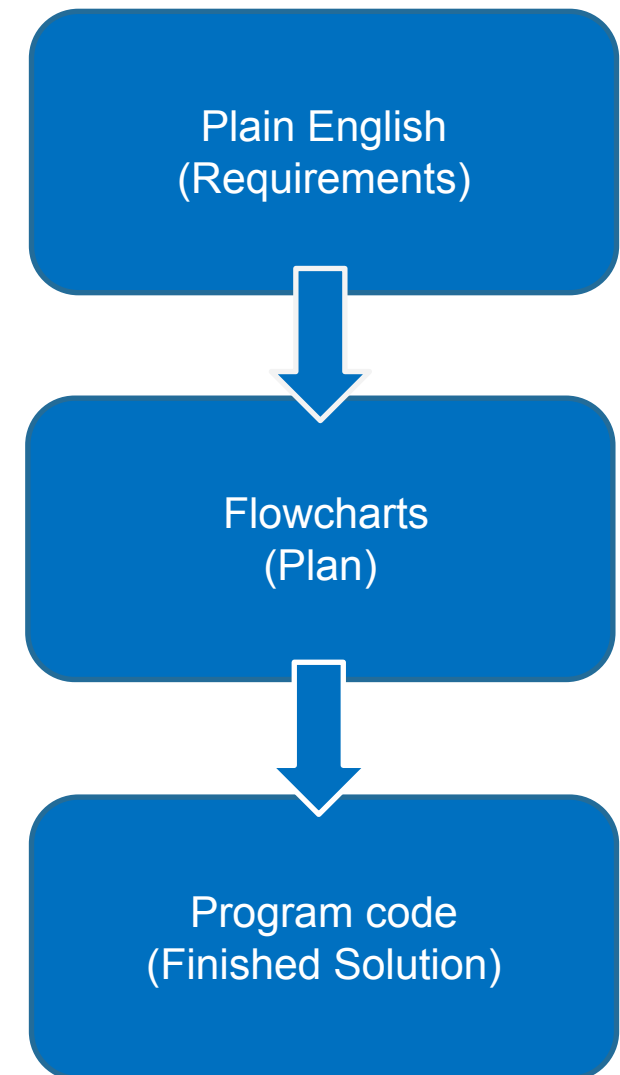
However, going straight to coding can be very confusing.

Before you write one line of code in any language, it is a good idea to write it in a simple way first to ensure you have included everything you need.



Activity 7 – Planning your build

When developing technical prototypes **flowcharts** are used to document what the prototype needs to do and to break the **requirements** down into manageable steps.



Activity 7 – Planning your build

Watch this video [The Big Bang Theory: The Friendship Algorithm](#) (2 mins, 27s) and answer the first three questions on the worksheet (next slide).



ACTIVITY 7

PLANNING YOUR BUILD

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What was the problem with Sheldon's flowchart?

How was this problem solved?

Why are flowcharts useful?

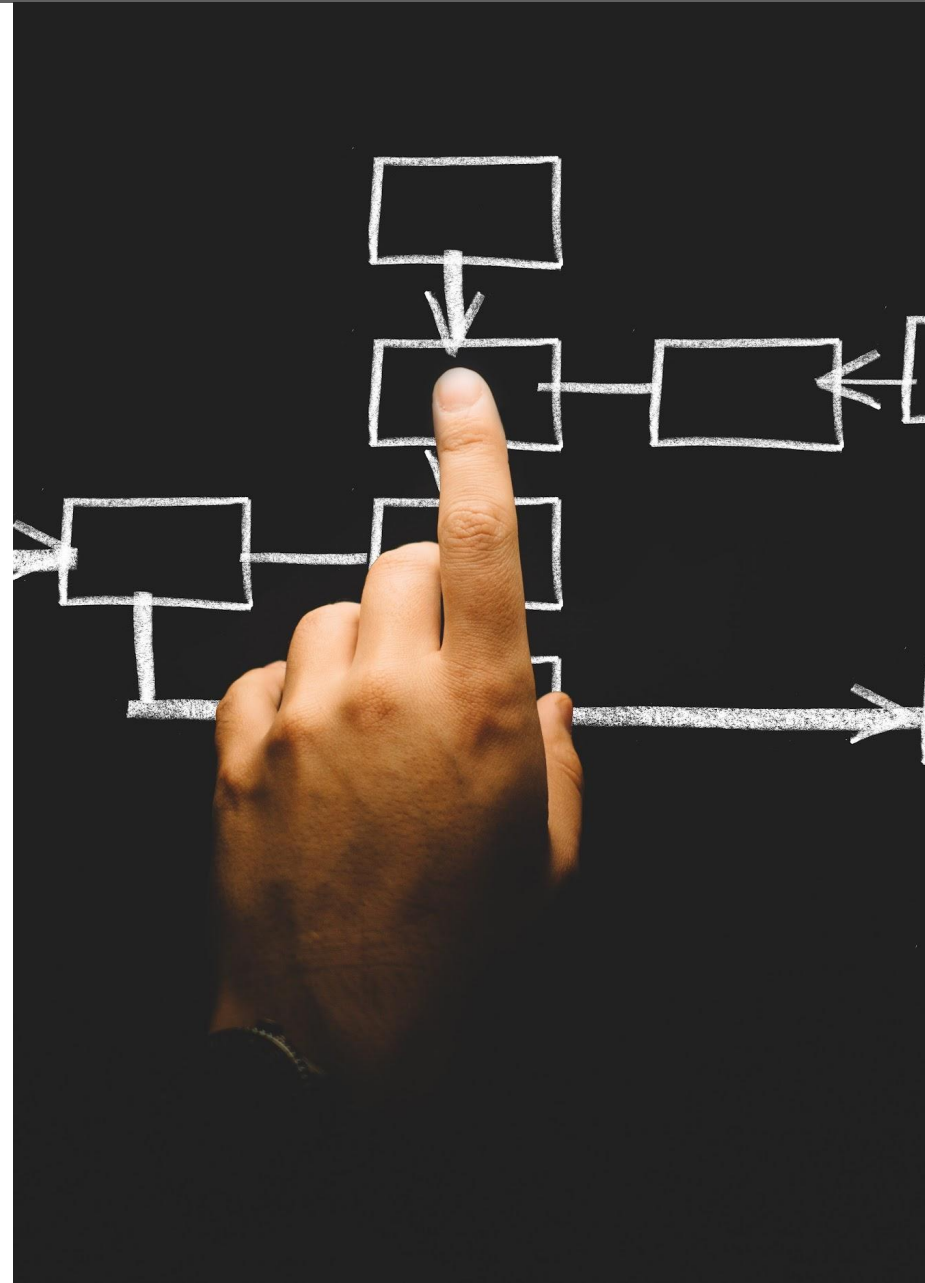
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Activity 7 – Planning your build

A flow chart is a **graphical** or **symbolic** representation of an **algorithm** or process.

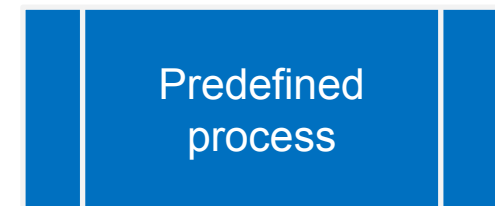
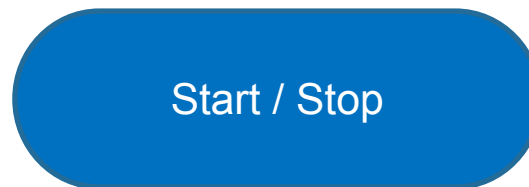
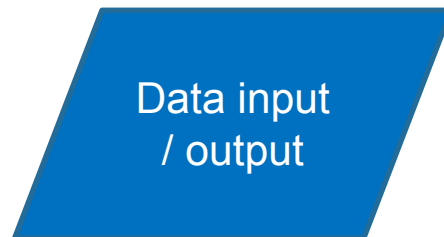
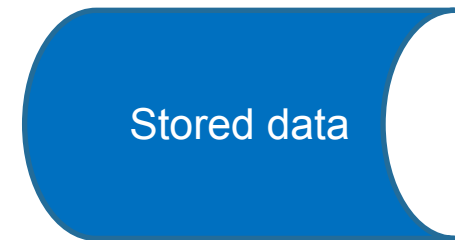
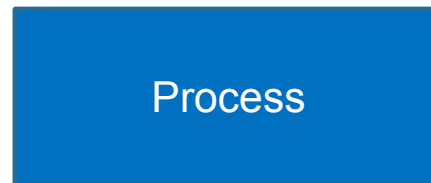
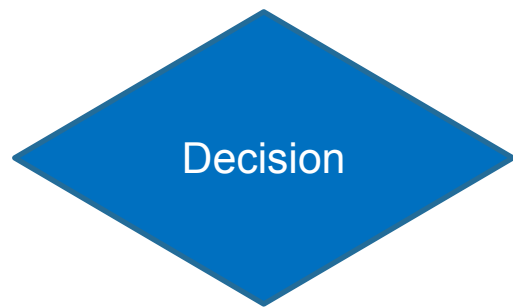
Each step in the algorithm is represented by a different symbol and contains a short description of the process step.

The flowchart symbols are linked together with arrows showing the order in which the steps are completed.



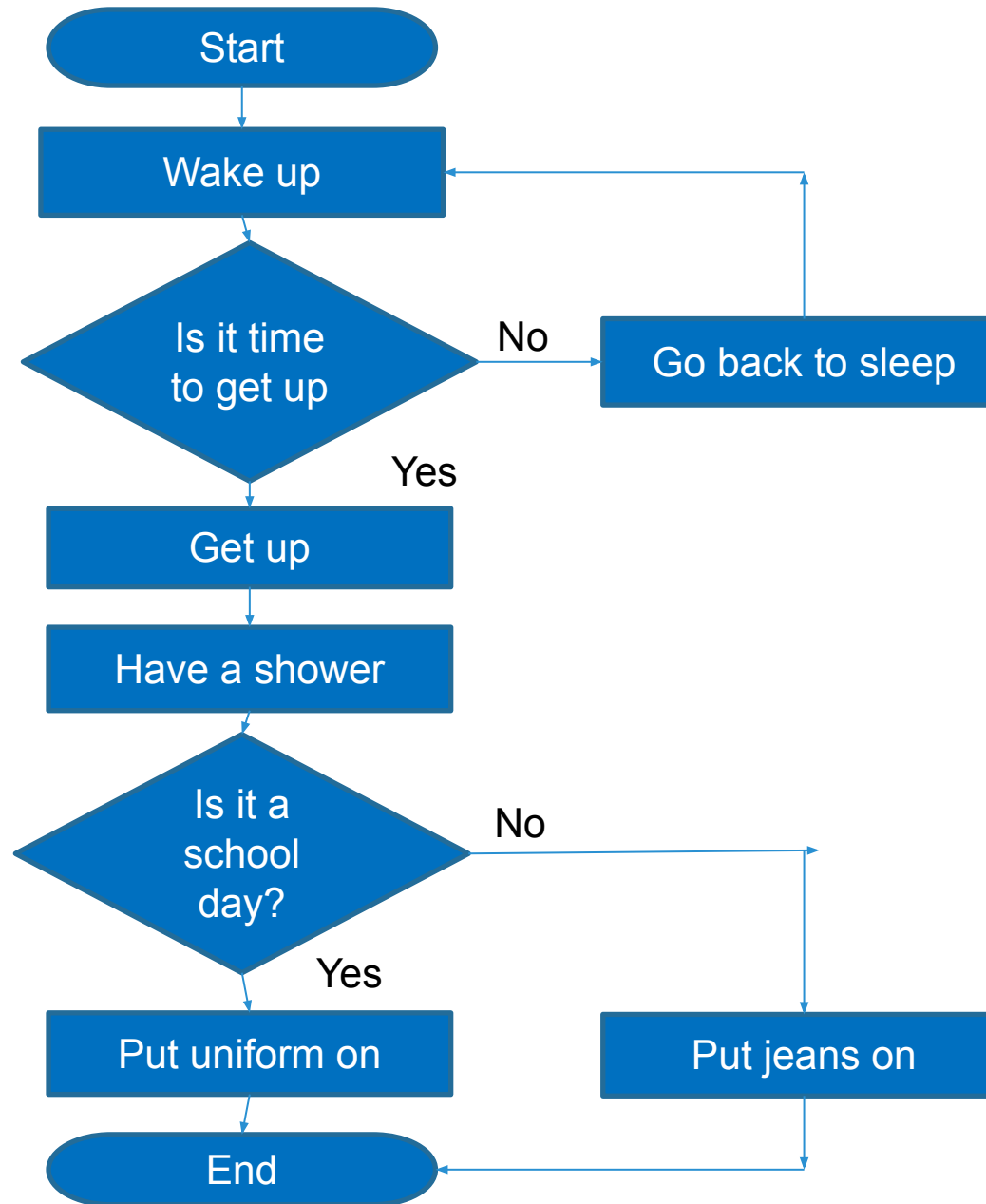
Activity 7 – Planning your build

The symbols are available in PowerPoint and Word. If you are using Lucidchart for your click-through wireframes you can also use it to produce your flowcharts.



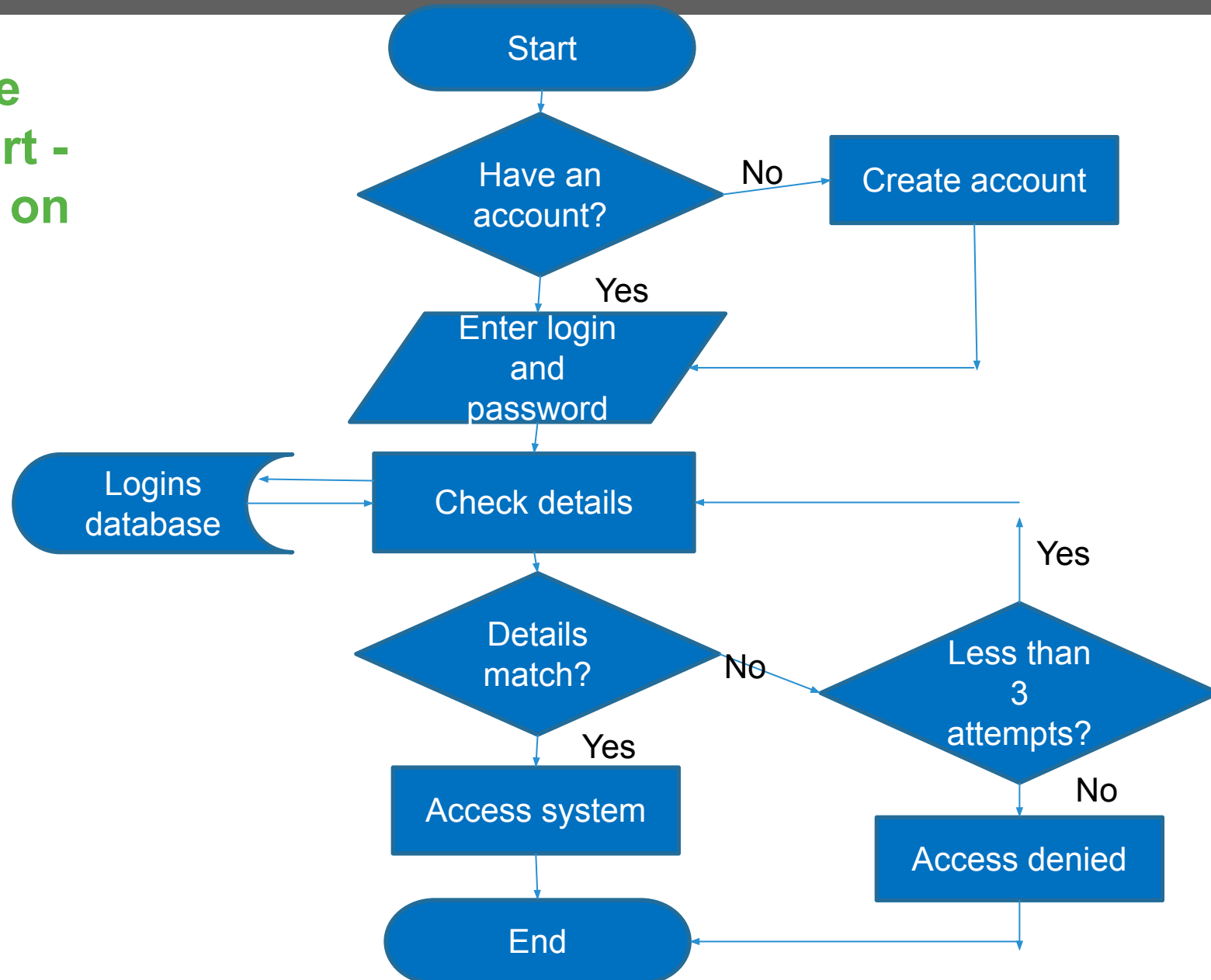
Activity 7 – Planning your build

Example flowchart - getting up



Activity 7 – Planning your build

Example flowchart - logging on



Activity 8 – Create your app

Look through your paper prototypes and list the processes your app needs to complete.

Create flowcharts to plan how to build your app with App Lab.

Once you have completed your flowcharts use them to help you to build your app.



Activity 9 – Plan a user test

Activity

Consider what you want to learn about your idea and prototype, and how to test these things.

- Do you want to test the overall proposition?
- Do you want to test some functionality, such as the sign up flow, or how well a user finds a particular feature?



ACTIVITY 9

PLAN A USER TEST

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What do you want feedback on?	What do you want feedback on?	What do you want feedback on?
What will you ask the tester to do?	What will you ask the tester to do?	What will you ask the tester to do?
What do you want feedback on?	What do you want feedback on?	What do you want feedback on?
What will you ask the tester to do?	What will you ask the tester to do?	What will you ask the tester to do?

Consider what you want to learn about your idea and prototype. Do you want to test the overall proposition? Do you want to test some functionality, such as the sign up flow, or how well a user finds a particular feature?

NAME

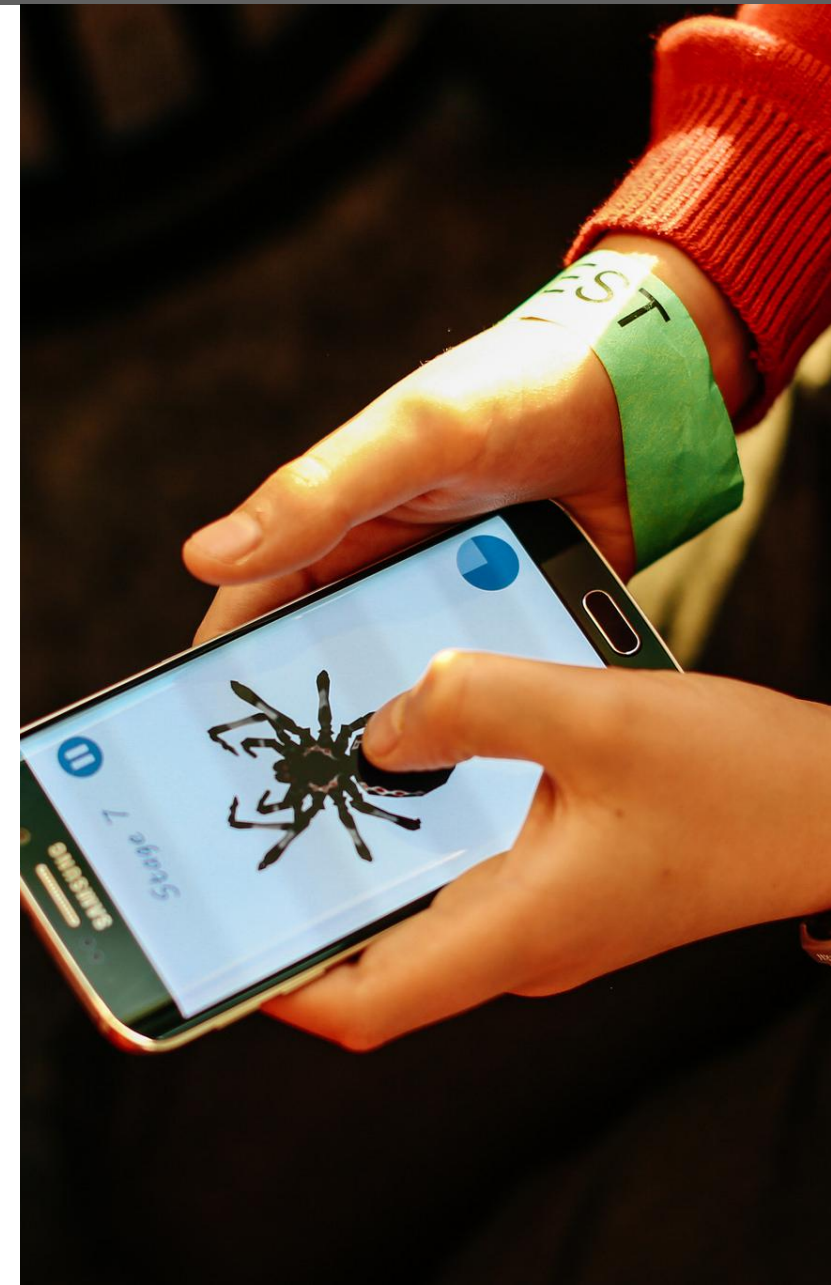
Activity 10 – Conduct a user test

Activity

Ask someone you live with to test your prototype for you. Alternatively you could email the link to one of your friends to test.

Don't tell the person how to use the app. Use your plan to ask them to do things with the app.

Record your findings and update your prototype based on their feedback.



ACTIVITY 10

CONDUCT A USER TEST

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Person we're testing with		☐ Real test	☐ Role play
Positives	Suggested improvements		
Next steps			

Find time to conduct the test. Inform the test subject of how long it will take, and thank them for their time. Make notes of the feedback.

NAME

Activity 11 - Refine your prototype

Activity

Make sure you continually update and amend your app based on the feedback that you receive from users.

You are working towards creating an MVP that is easy to use and demonstrates how it solves the problem you have identified.

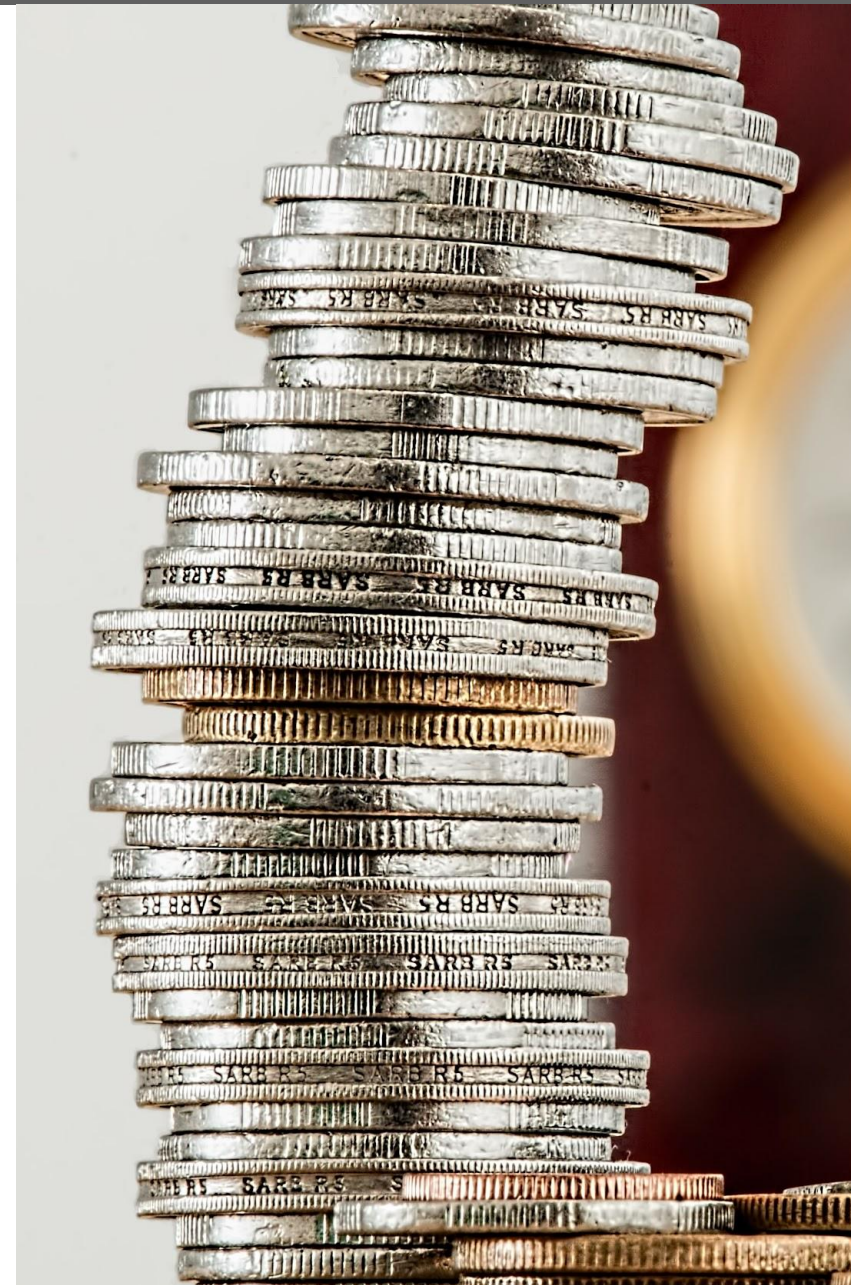


Activity 12 – Develop the business model

Business models

For a business to be sustainable and keep growing, it must make a profit. This means that you make more money than you spend.

A business owner will spend money on paying staff, renting a workspace and other costs.



Activity 12 – Develop the business model



Choosing a business model

Apps make money through a variety of business models. Typical business models include:

- Free with adverts
- In-app purchases
- Freemium
- Paid for app

Using the Business Models Handout and the table on the following slide, decide which business models could work for your app.

Activity 12 – Develop the business model

All users pay	Some users pay	Somebody else pays
Most of your users are able and willing to pay	Many of your users are unable or unwilling to pay	All users are unable or unwilling to pay <i>-OR-</i> You want to maximise the number of users
Business models • Paid for app	Business models • In-app purchases • Freemium	Business models • Free with adverts

Activity 12 – Develop the business model

Activity

Choose a business model you think is most appropriate for your app.

Take into consideration the average income of the user groups. If your users are very young, for instance, they may have less disposable income to spend on apps even if they feel the need for them.



ACTIVITY 12**DEVELOP THE BUSINESS MODEL****COURSE****DEVELOPING AN APP**

Free with adverts	In-app purchases
What might your user be interested in buying?	What in-app purchases could you offer?
Freemium	Paid for app
What free features could work as a standalone app?	What in your app is worth paying for?
Chosen business model(s)	

Think about how you will make money from your app. Identify which business models are feasible for your product. Consider all the options and remember, you could have a mix of revenue streams.

NAME

Activity 13 – Prepare your final pitch



Pitching

It is now time to pull all your research together and pitch your developed app idea. This is a summary of all the hard work you have done during the course. Make sure you include:

- Details of the problem the app solves
- Your user and market research
- Your app's key features
- An illustration of the user experience (as demonstrated by your wireframes and / or screenshots)
- An explanation of your business model

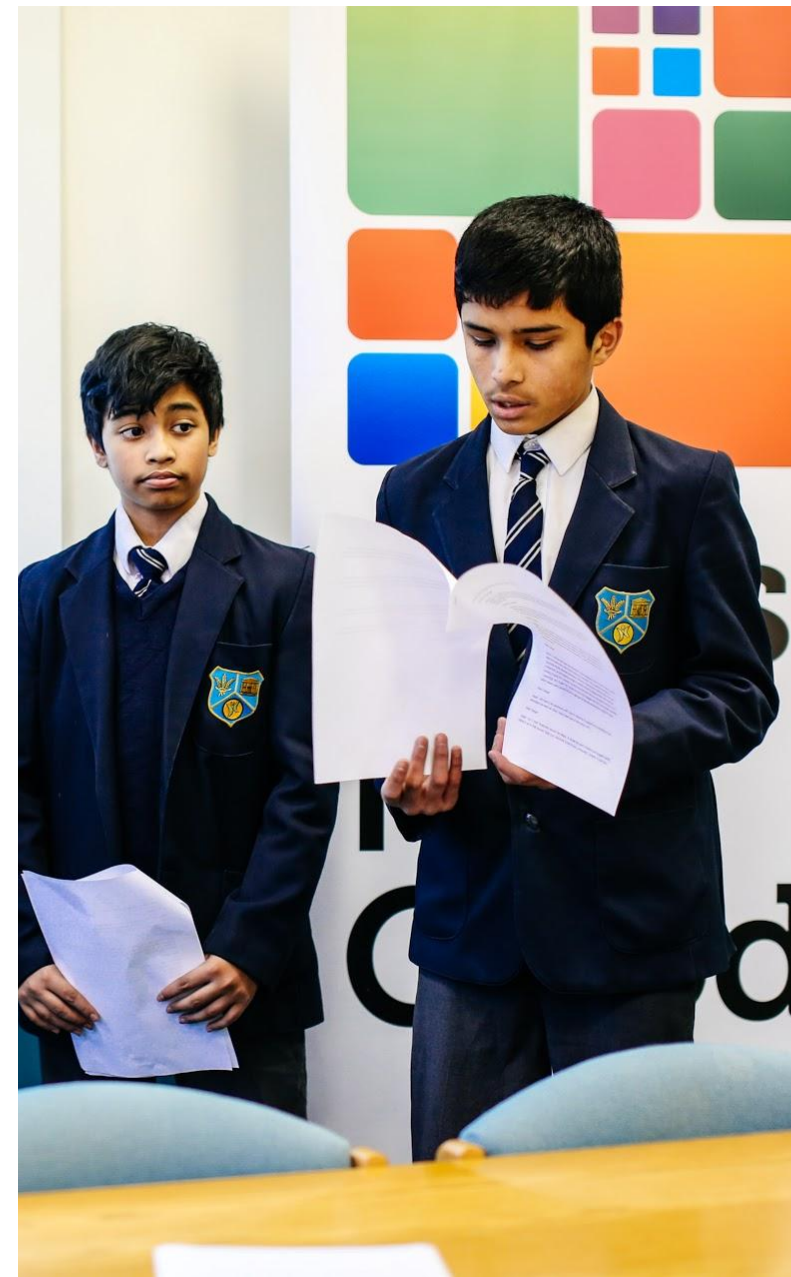
Activity 13 – Prepare your final pitch

Activity

Use PowerPoint, Keynote or [Google Slides](#) to create your pitch.

Tips

- Your presentation should take about 5 minutes if you were to deliver it
- Think about using pictures
- Don't be too wordy – look at the next screen, which slide is easier to read?



Activity 9 – Prepare your final pitch



Which of these slides is easier to read?

Our app is targeted at dog walkers. It will be used by people aged 20-60 who have smart phones. We think it will help lots of people as it will show them new places to walk their dogs and they will be able to meet lots of other dog walkers. We are very excited about the app and we think it will be a great success. We are really excited about our new app and we hope that lots of other people will be too.

Slide 1

Our app is targeted
at dog walkers

Slide 2

Activity 14 – Reflect on your project



Retrospectives

Tech teams run retrospectives, as a way to review and look back on a project. This helps teams and individuals improve.

Activity

Think about the following questions:

- What has gone well with your app development?
- What could have gone better with your app development?
- What has been good about how you have organised your time and planned your project?
- What would you do different if you were to complete a similar project?

ACTIVITY 14

REFLECT ON YOUR PROJECT

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What has gone well with your app development?	What could have gone better with your app development?
What has been good about how you have organised your time and planned your project?	What would you do different if you were to complete a similar project?

Reviewing a project helps you identify what went well, and what not so well, so that you can improve how you work in your next project. It's something all tech development teams do. Review your progress against the success criteria you drew up at the start of the project.

NAME

WELL DONE



Yay!

**COURSE
COMPLETE**

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