2025

The Kiosk Project

Orb education

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This project involves the development of an interface for an interactive kiosk such as:

- An information booth in a town, shopping centre or museum.
- A kiosk in a large store that lets the user browse items and sends them to the correct department.
- An instruction guide in a gym, factory or venue.

The project has been designed with flexibility in mind. Students can undertake anything from a small solo project created in PowerPoint, to a fully researched project incorporating a range of software whilst collaborating through the internet.

Major Options Catered For

1. **Choice of Kiosk Software**
   Although there are other possibilities, we focus on the use of PowerPoint to build the interface. For those who need the support, we offer full guidance on setting up *Action Buttons, slide masters* and other useful tools in PowerPoint.

2. **Online Collaboration**
   You may decide how much collaboration takes place through the internet. We offer numerous opportunities for students to collaborate online, including working together on planning documents, wireframes and the design of the actual interface (although there are limitations to how much can be completed in the online version of PowerPoint).

3. **Research and Learning**
   There are plenty of background materials focussing on ideas such as sustainable technology, energy efficiency and the benefits of collaboration. You can decide how many of these topics you would like students to tackle along the way.

4. **Programming**
   Although this project doesn't teach programming, there is a fantastic opportunity for those with programming skills to take full control of the interface. We show students where to place their code in PowerPoint and offer some example programs.

5. **Other Options**
   The project you set may include sections on timelines, flowcharts, algorithms, accessibility and usability, class polling, file name conventions, and social, environmental and economic objectives.

The checklist at the start of the resource materials will help you put together challenging yet achievable projects. You may set the same tasks for the whole class or tailor projects to the abilities of individual students.

The Kiosk Project Checklist

You will be creating a user interface for a kiosk. There are lots of resources in this pack that will help you succeed with the project. The choices that affect your path through the materials include:

Aim: *To create a pathway through the kiosk project.*

- Will you collaborate with others online wherever possible?
- Are you going to consider *Design Thinking*, *Systems Thinking* and *Computational Thinking*?
- Do you have programming skills that you would like to use?
- What other project and design skills will you learn along the way?

Your teacher might have chosen a path for you and checked some of the option boxes below.

Essential | Information | Online | PowerPoint | Other Options

1. Wordlist

☐ Wordlist

2. Interactive Kiosk Research

Task 1 – Kiosks, Kiosks, Everywhere
Task 2 – Features of a Successful Kiosk

☐ Task 3 – Benefits of the Self-Service System
☐ Task 4 – Sustainable Technology
☐ Task 5 – Advanced Kiosk Vocabulary

3. Collaborating

☐ Task 1 – Collaboration Considerations
Task 2 – Social Considerations

☐ Task 3 – Collaborating Online
Task 4 – Word and PowerPoint Online

4. Introduction to the Project

Task 1 – Your Initial Kiosk Ideas
Task 2 – The Kiosk Software
Task 3 – The Documentation
Task 4 – The Communication

Appendix 1. Office Online

☐ Task 1 – Collaborating with MS Office Online
Task 2 – Collaborating on a PowerPoint

The Kiosk Project Checklist (page 2)

5. Thinking Skills

- ☐ Task 1 – Design Thinking Stages
  Task 2 – Using Design Thinking
- ☐ Task 3 – Systems Thinking
- ☐ Task 4 – Computational Thinking Stages
  Task 5 – Using Computational Thinking

6. Kiosk Project Plan

Task 1 – Ordering Tasks
Task 2 – Decomposition

- ☐ Task 3 – Creating a Timeline
- ☐ Task 4 – Requirements and Constraints

7. Kiosk Functions

Task 1 – Action Buttons in PowerPoint
Task 2 –Slide Miniatures as Action Buttons
Task 3 – Design Themes
Task 4 – Browsed at a Kiosk

- ☐ Task 5 – PowerPoint Online Limitations
- ☐ Task 6 – Other Useful PowerPoint Tools
- ☐ Task 7 – Layered Buttons

Appendix 2. Button Layering

Task 1 – Showing and Hiding Buttons
Task 2 – Return to Start Prompt

- ☐ Task 8 – Programming

Appendix 3. Programming

Task 1 – Changing Text in a Text Box
Task 2 – Macro Security
Task 3 – Example Interface
Task 4 – The Developer Options

The Kiosk Project Checklist (page 3)

8. Pattern Recognition

- Task 1 – Identifying Patterns
- Task 2 – Slide Masters in PowerPoint
- Task 3 – PowerPoint Themes
- ☐ Task 4 – Reusing Objects

9. Flowcharts and Algorithms

- ☐ Task 1 – Flowcharts Recap
  Task 2 – Abstraction
- ☐ Task 3 – Designing your Flowcharts
- ☐ Task 4 – Writing Algorithms

10. Wireframes

- Task 1 – Functional Design
- ☐ Task 2 – Creating Wireframes

11. Visual Design

- Task 1 – Defining Visual Design
  Task 2 – Researching Visual Design
  Task 5 – Creating Designs to Test
- ☐ Task 3 – Design Themes in PowerPoint
  Task 4 – Background Images

12. Accessibility and Inclusion

- ☐ Task 1 – Vocabulary
  Task 2 – Accessibility Tools
  Task 3 – Improving Accessibility
  Task 4 – Other Things to Consider
- ☐ Task 5 – Usability Options

The Kiosk Project Checklist (page 4)

13. Trialling Designs

- ☐ Task 1 – File Names
  Task 2 – Backups
- ☐ Task 3 – Prototypes
- ☐ Task 4 – Polling the Class

14. Building and Testing

Task 1 – Building the Interface
Task 2 – Testing

15. Saving Energy

- ☐ Task 1 – Energy Use in your Kiosk
  Task 2 – Electricity Cost of your Interface
  Task 3 – Screensavers and Backlights
  Task 4 – Sleep
  Task 5 – Kiosk Energy Analysis
- ☐ Extension – Your School

16. Evaluation and Report

- ☐ Task 1 – Social, Environmental & Economic Objectives
- ☐ Task 2 – Comparing Solutions
  Task 3 – Getting Feedback
  Task 4 – Discussion
  Task 5 – Reporting

Self-service kiosks can be seen in supermarkets, shopping centres, airports, libraries, banks, restaurants and many other locations. They might be there to provide information about a place, allow you to select a meal or even take your picture.

Aim: *To learn about the wide variety of kiosks in use.*

Note: *If you need an introduction to kiosks, try a search for 'interactive kiosk YouTube'.*

Task 1 – Kiosks, Kiosks, Everywhere

Look on the internet for information about interactive kiosks and fill in the boxes below.

Kiosk Uses

List 7 types of kiosk.

1. Photo Kiosk
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

The User Interface

Draw or copy an example of a screen on an interactive kiosk.

My Favourite Kiosk

Sketch or insert a picture of a kiosk that you like the style of.

Kiosk History

List some facts about the history of self-service kiosks.

Interactive Kiosk Research (page 2)

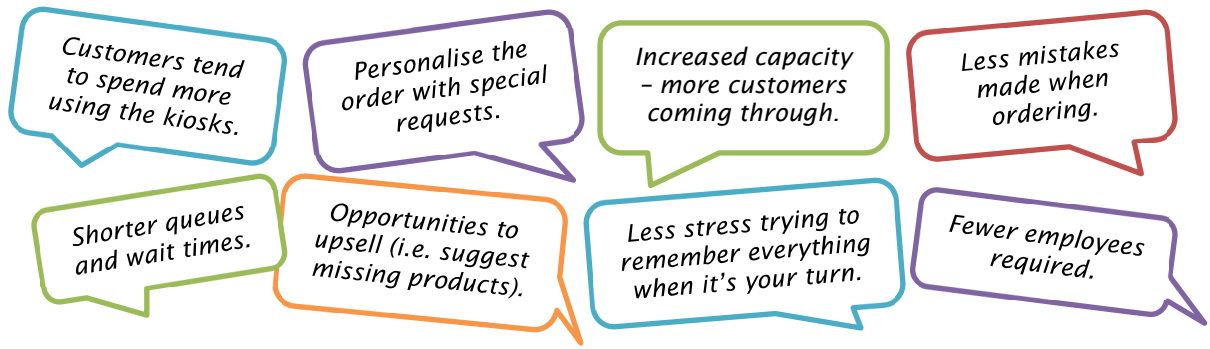
Task 2 – Features of a Successful Kiosk

McDonald's have an extremely successful self-service system, allowing customers to place and pay for orders using their interactive kiosks. The features listed below have been identified as reasons for the system's success. Match each feature to its description.

	Feature			Description
1	Easy-to-use Interface	•	•	a Step-by-step instructions help guide the customer.
2	Touchscreen	•	•	b Personalise your order with different options.
3	Clear Instructions	•	•	c Tap or swipe on the screen to make selections.
4	Images	•	•	d Easy to navigate, with visually appealing options.
5	Customisation	•	•	e Photos of the products help with selection.
6	Payment Options	•	•	f Review your selections before going ahead with your order.
7	Multilingual Support	•	•	g Use cash, credit cards and mobile payments.
8	Order Confirmation	•	•	h Interact with the system in your preferred language.

Task 3 – Benefits of the Self-Service System

At the end of the day, McDonald's are looking to increase their profits. However, some design features of the kiosks are geared towards customer satisfaction. Others are direct attempts to get more money from you at the time. Organise the points below into a table like the one shown.



Customer Benefits (long term profits)	Company Benefits (immediate profits)

Your challenge for this project is to build a user interface for a kiosk. Your teacher will help you make the following decisions:

Aim: *To understand the kiosk project.*

- The members in each group.
- The minimum requirements for the finished product.
- The collaboration that should be carried out over the internet.
- The amount of detail you should put into your written record.

Task 1 – Your Initial Kiosk Ideas

The first task is to decide what your kiosk will be for. Some possibilities are shown below, but you may choose anything appropriate. Keep your ideas reasonably simple – you can always expand on them later.

- An information booth for a town, shopping centre or museum.
- A shop kiosk that lets the user browse items and directs them to the correct department.
- A help guide in a factory, car repair shop or anywhere else that instructions are needed.
- A ticketing kiosk that allows the user to browse options and select a ticket.
- For the programmers: a self-service checkout which adds selected items to a list and calculates the total cost.

Discuss the following ideas with your group members.

a. What type of kiosk will yours be? What will the subject be? What will it do? Try and be precise e.g. don't just say 'a map of a store'; talk about the type of store and some of the things that it might sell.

b. Who will use your kiosk? What do you think the average age of the users might be?

c. Where will the kiosk be placed? Is it indoors or outside? Are there any special things you would have to consider if you actually built it?

d. What screens will be included? How will the user navigate between these screens?

e. Have you any thoughts about the design features of your kiosk interface e.g. colours or images that you like?

f. What might the actual kiosk enclosure be like? Sketch out some ideas showing what it might look like if you could build it. Remember that these are just initial thoughts; you might change your mind later.

g. *Will your kiosk need to remember any information from the user e.g. a list of items clicked, or perhaps calculate the total cost of products selected? This is possible in PowerPoint but you will need to do some programming. Programming is not covered in this project but we will show you where to put your code if you have these skills. If you have no experience with programming, then it would be better to design an interface that doesn't perform calculations. Check your ideas with your teacher.*

Task 2 – The Kiosk Software

There are lots of reasons that make PowerPoint an excellent choice for this project, such as:

- Most people know the basics of PowerPoint, so learning how to build interactive slides with extra functionality isn't a huge step.
- The full version of PowerPoint is already installed on most school computers. It's unlikely that you will be trying to install downloaded software on computers that are protected.
- A free online version is available to anyone with a web browser, so you can use it from almost any internet connected computer. There are some limitations with this application, however, so you will need to open things up on the desktop version at times.
- PowerPoint has accessibility tools that help you ensure that your interface can be widely used.
- If you know how, you can do some programming in PowerPoint using the Visual Basic editor. The programming language used by MS Office is called Visual Basic for Applications (VBA). It is quite easy to get started.

Discuss the issues with your group and teacher. You will need to work locally using the desktop version of PowerPoint. If you are also collaborating online, check that you are able to upload, download and share the file. If you haven't already, work through **Appendix 1 – Office Online** and create a test presentation.

Task 3 – The Documentation

You should keep a record of your group's activities. This could include any of the following:

- Notes about the tasks you need to complete and the things you learn.
- Plans for completing these, including responses to the questions in this guide.
- Information about any software or apps you discover along the way.
- Pictures or drawings of anything that helps describe your ideas.

If you are using the Office Online solution, you could set up a Word document for your planning. Otherwise, set up and share a document in your chosen application.

Task 4 – The Communication

You may spend a fair bit of time gathered around a computer with your group. Once your plan is in place, however, you may work more independently on different parts of the project. There are helpful commenting facilities in PowerPoint and Word but you could also make video calls with your group when working in different locations.

Decide on the methods you will use to communicate and get these up and running.

Note: *Many communication apps have a minimum age restriction.*

When designing a new system, it is a good idea to start by finding out what people actually want. You can then work out the best way to provide this to them and make sure that your new system is successful. This is all part of *Design Thinking*.

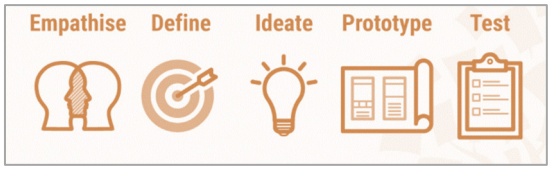
Aim: *To consider Design Thinking, Systems Thinking and Computational Thinking.*

It is also a good idea to see how your new system might affect things on a wider scale. Who or what will be affected by the changes you intend to make and is any of this a problem? This is called *Systems Thinking*.

When it comes to building your system, you might use some *Computational Thinking*. This will help break the task down into small chunks so that all members of your group have things to do.

Task 1 – Design Thinking Stages

Design Thinking is a way of developing solutions to problems whilst considering the people using the products or services. This might include adapting technology to suit people, rather than asking them to adapt to the technology. It's about making things more usable.



The five steps to Design Thinking are listed below. Try and match each step with the relevant tasks involved. Look online for help if needed.

	Step			Tasks
1	Empathise	•	•	a Look at all the information gathered and write down the problems.
2	Define	•	•	b Try out the solutions with users and see which meet their needs.
3	Ideate	•	•	c Interview users and learn more about their needs.
4	Prototype	•	•	d Brainstorm for ideas and create different possible solutions.
5	Test	•	•	e Create a mock-up of each solution that can be tested.

Task 2 – Using Design Thinking

Think about your initial project ideas. Discuss the following questions with your group. You do not need to come up with exact answers at the moment; we will look more at these things later. For now, just try and get an idea of what design thinking involves.

a. Who will your kiosk be designed for? Is it possible to talk to these people about what they would like? How could you record their opinions so that you can discuss them in your group?

b. Could you create different designs for your system? How would you decide which design is most popular?

At this point, it would be easy to jump in and scratch together some sort of solution for your kiosk. However, we are going to work in a way that will help you learn how to cope with much larger and more complicated projects in the future.

Aim: *To create a plan for the kiosk project.*

Task 1 – Ordering Tasks

The list below shows a set of tasks that you might complete whilst working on your kiosk interface. Study the list and put them in the order that you think they should be carried out.

a. Test all possible paths through your user interface and fix anything that doesn't work.

b. Design your user interface, selecting colours, background images, buttons etc.

c. Look at templates and other ways to save time and make your interface appear professional.

d. Decide on areas of responsibility for the members of your group so that the work is shared.

e. Evaluate your finished product, perhaps getting feedback from someone who works in the business.

f. Develop a timeline for the completion of different stages of your project.

g. Share your ideas with the class and get some feedback from them about how you might proceed.

h. Decompose the problem fully and make a plan.

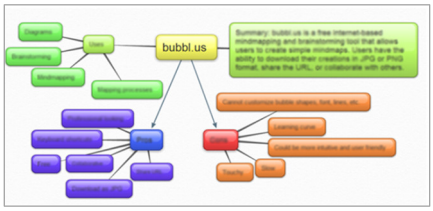
i. Build your user interface based on all the ideas and feedback you have received.

j. Consider users with limited physical abilities or those who speak different languages.

k. Talk to potential users and ask them questions about how they think the kiosk should be designed.

l. Learn how to set up interactive screens.

Task 2 – Decomposition



With a good idea about how we might complete the project, we can now break down the task into smaller parts. This will help us make a plan and share out the workload.

There are lots of ways of getting your ideas down here. You could create a mind map like the one above right, although the websites used to create these generally require you to sign up.

A less graphical method is to create a multilevel bulleted list in Word or Docs, as on the right. Use the *Tab* key to move to the next level, and *Shift + Tab* to move back a level.

1) Planning
    a) Create plan
        i) Timeline
        ii) Tasks
    b) Learn
2) Designing
3) Prototypes
4) Building
5) Testing

On the following page, we show you how to use the SmartArt tools in the desktop version of Microsoft Word.

It's time to investigate some of the less well-known features of PowerPoint. The tasks below will help you develop skills that will be useful when building your kiosk interface. Remember, however, that you can always include your own ideas.

Aim: *To learn about the kiosk functions in PowerPoint.*

Hopefully you have used PowerPoint in the past and know a bit about how to set up slides with images and text. We will also add buttons which can be clicked or tapped to move to any other slide. These buttons will give your users choices and make your kiosk interface interactive.

Notes: *If you need guidance getting started in PowerPoint, then our* ***Office Basics*** *and* ***Office Standards*** *publications will help. Your school might have purchased these resources separately.*

The Mac version of PowerPoint uses slightly different steps to those shown below. The appearance of the screens may also vary a little. PowerPoint online can be used to get past some of the limitations of the Mac version. A bit of trial and error should get you through.

Task 1 – Action Buttons in PowerPoint

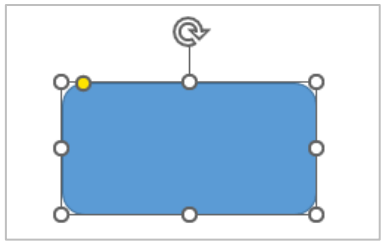
We will use *Action Buttons* to move between the slides of our PowerPoint. Unfortunately, action buttons cannot be created in the online version of PowerPoint so these will need to be put in place in the PC or Mac software.

At this point, you will just be learning skills in a test presentation. You should work individually so that all members of your group learn how to set up this functionality.

a. Open PowerPoint on your PC or Mac. Remember that for this task, you must use the application on your computer and not the online version in your web browser. The PowerPoint software is installed on most school computers.

b. Start a new blank presentation and change the title text to 'Slide 1'.

c. Insert a second slide (a *Title Slide* is fine) and change the title to 'Slide 2'. Do the same again for 'Slide 3'.



d. Return to slide 1 and click '**Insert / Illustrations / Shapes / Rectangle: Rounded Corners**'. Draw a rectangle on the slide. This rectangle will become a button.

A flowchart is a great way of thinking through how your kiosk interface will work. It should show the steps of the process as different shaped boxes connected by arrows.

Note: *Flowcharts are not fully explained here. See our* ***Algorithms and Computational Thinking*** *resources (or search the internet) if you need further guidance.*

Aim: *To use flowcharts and algorithms to design the functionality of the interface.*

Task 1 – Flowcharts Recap

Describe the use of each type of symbol in a flowchart. Remember that the shape of the symbol is important but that it doesn't matter what colours you choose for each type of box.

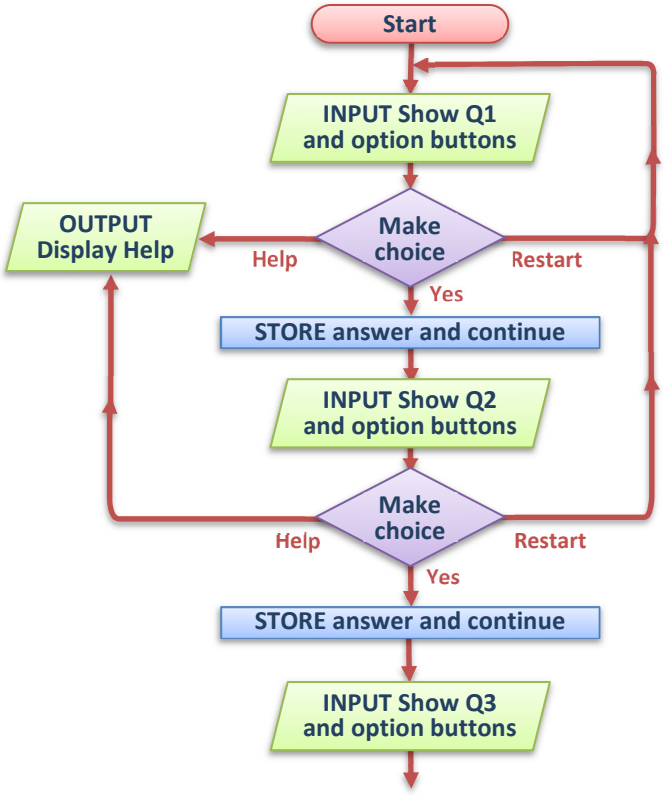
Symbol	Name	Use
	Terminal	
	Input or Output	
	Process	
	Decision	
	Flow Line	

Task 2 – Abstraction

Abstraction is about hiding the detailed parts of a process that don't need to be considered. This doesn't mean that you never have to think about them; just that sometimes things are clearer if you leave them out.

Look at the flowchart on the right. Start at the beginning and trace your way through, assuming that you press the *Yes* button each time rather than the *Help* or *Restart*.

What would this flowchart look like if there were 20 questions? What about 100? As you can see, things will get messy quite quickly. We want to use abstraction to hide some of these details.



Microsoft Office allows you to share and collaborate on documents, spreadsheets and PowerPoints. You may decide to plan your ideas in Microsoft Word, for example. Each member of your team can then make changes to the same online planning document. The others in your group can view these changes and discuss them in the comments section.

Aim: *To set up collaboration over the internet using Office Online.*

You may do a similar thing with a PowerPoint. After creating and sharing a presentation, others can make changes and add comments, letting you work together in one space.

There are desktop versions of the Office applications, but there are also free online versions of Word and PowerPoint. The online versions have less functionality. For this project, Word Online will be absolutely fine for your planning. You will run into issues with PowerPoint Online, however, as it doesn't have all the functionality we need. You may decide to start designing in PowerPoint Online and then move to the desktop version when required.

Note: *If you are able to save your presentation to OneDrive, then each member of your group can work on the same presentation using the desktop application. This depends on having OneDrive running on your computers. If not, then you may need to work around one computer or send files back and forth via email.*

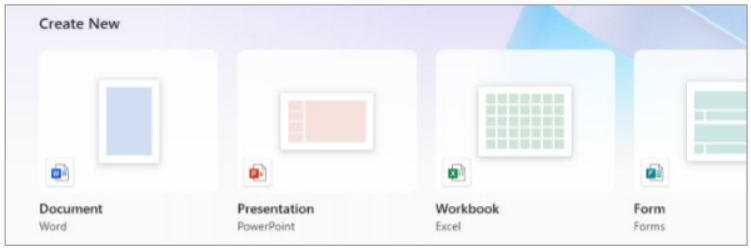
Task 1 – Collaborating with MS Office Online

It's worth noting that the precise steps for using these online apps change frequently. However, the instructions below should get you through the process of setting up and collaborating on a document.

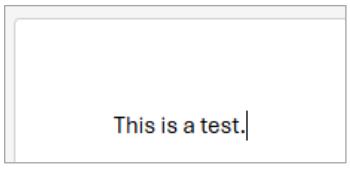
Setting up a Word document

f. Go to www.office.com and sign in or set up a new account. You can sign in with any Microsoft account (Windows PC, tablet, phone, Xbox Live, Outlook.com, Hotmail or OneDrive).

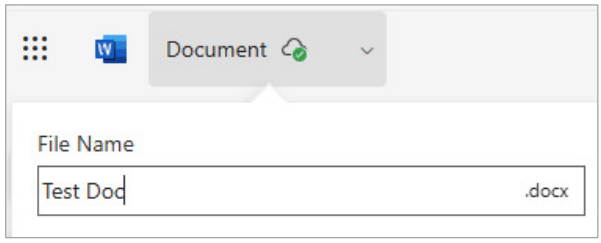
g. You should be taken to the start page with a list of the applications available (select *Apps*, if not). Click on *Document.*



h. Type a few words into the main section of the document.



i. Click on the title of the document in the top left and rename your file. We have called ours 'Test Doc'.



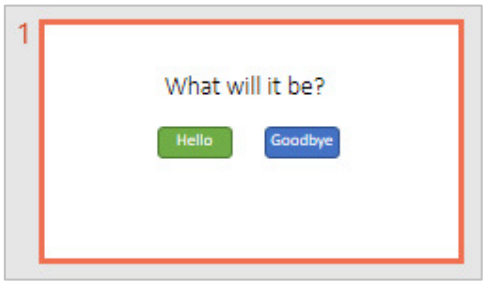
PowerPoint uses the programming language VBA (Visual Basic for Applications). This is similar to VB.NET, which you may have used before.

Aim: *To look at programming in PowerPoint.*

Note: *This project does not need to use programming and the tasks below don't teach you how to program. However, if someone in your group already has programming skills then it's not difficult to use these in PowerPoint. These tasks will show you how to access the programming tools.*

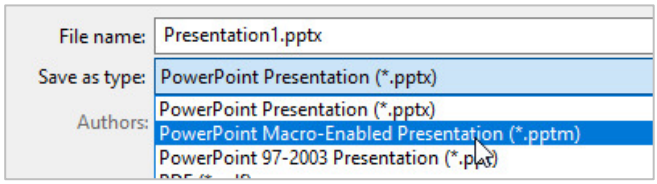
Task 1 – Changing Text in a Text Box

We'll start by using buttons to change the text in the title box.



a. Using the desktop version of PowerPoint, create a new presentation with a title and two buttons.

b. Save the file as a *Macro-Enabled Presentation* so that you can run the programs you create. To do this, click '**File / Save As / Browse**' and select *PowerPoint Macro-Enabled Presentation* from the list of file types.



Note: *Mac users might need to allow Macros in 'Preferences / Sharing and Privacy / Security'.*

c. You'll need to name the title box so that you can refer to it in your programming code. Select it and click '**Shape Format / Arrange / Selection Pane**'.

d. In the pane that opens on the right, change the name to 'Title'. You can change the names of the buttons as well if you like, but we won't be using these names in this code.

e. Select '**View / Macros / Macros**' and type the Macro name 'Hello_Click'. Click *Create*. The VB editor (actually an IDE) will open up.