Computing Department Knowledge Organiser: Year 9 Mobile App Development

What is an App?

‘App’ is an abbreviation for application.

An App is a computer program or piece of software designed with a purpose so that you can download on to your smartphone. E.g. WhatsApp, Tassomai

Task 1: Can you name 5 educational apps?
Task 2: Describe an app in your own words
Task 3: Describe an idea for an app that could be made that is linked to a hobby or interest that you have.
Task 4: What does debugging an app mean?
Task 5: What events can be used for user input?

Advantages of mobile phone apps

- Simplicity. Mobile apps generally need very little instruction on how to use them
- They help to engage pupils in education as well as providing them with greater access to educational materials
- They create more interactive ways for us to communicate with family and friends across the world
- They allow more opportunities for flexible working, such as working from home or outside normal office hours

Disadvantages of mobile phone apps

- Apps may have to be coded for two or more environments (e.g., iOS and Android).
- Mobile apps may require access to personal information on your phone. This may feel invasive and could be a potential security weakness
- An app may not contain all the information or functionality of the full website version e.g. the Facebook app has less features than the website version of Facebook
- In some cases, mobile apps may be more of a distraction from learning in educational settings. Some studies say using apps for too long can accelerate information overload so remember to take a break.

Computing Department Knowledge Organiser: Year 9 Mobile App Development

You are developing a **mobile app** in your Computing lessons using the https://code.org/educate/applab website.

Top Tip: You can use the **hour of code** website to learn how to code or create an app from home. https://hourofcode.com/uk/learn

COMPUTATIONAL THINKING

DECOMPOSITION
Breaking down a problem into smaller chunks. This makes it more manageable and easier to understand.
1

PATTERN RECOGNITION
Looking carefully in lines of code for patterns, similarities and trends.
2

ABSTRACTION
Filtering out and focusing on what is important. Ignoring what is not important.
3

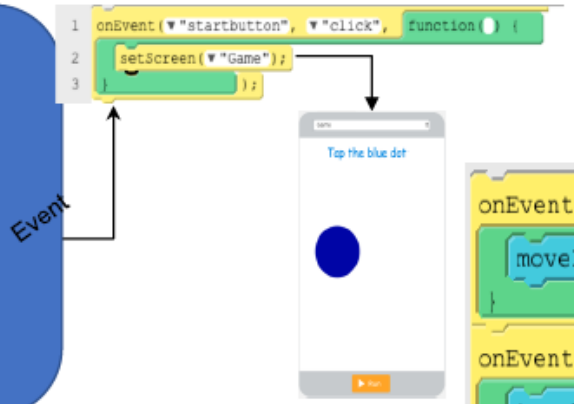
ALGORITHM DESIGN
A plan and step by step instructions on how to solve the problems.
4

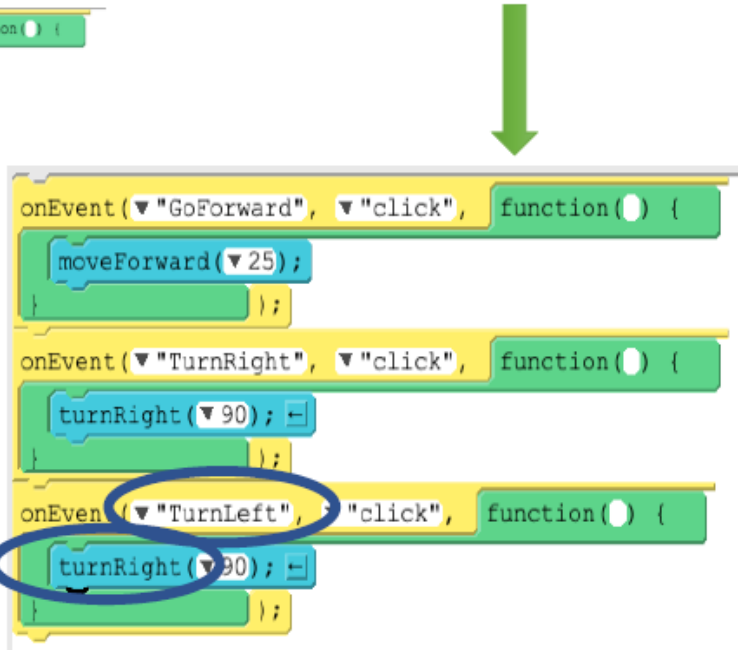
DEBUGGING
Looking through your program to find errors and then fixing them.
5

EVENT DRIVEN PROGRAMMING

User action such as:
- Mouse clicks
- Touchscreen
- Key presses
- Hovering over a picture
- Voice input ("OK Google", Siri, Alexa)

Events can also be triggered by:
- Sensors (e.g. if movement is sensed turn the light on)
- Messages from other programs





PAIR PROGRAMMING

The driver: To control the keyboard and mouse and place the code blocks into the correct places.

The navigator: To help support the driver by watching for any mistakes, reading instructions to the driver, and seeking support if needed.

Computing Department Knowledge Organiser: Year 9 Mobile App Development

USER INPUT

Text boxes – allowing the user to input a string.

Checkboxes - allowing for the user to indicate a yes or no response.

Button – linked to an event that will capture and process the data when it is clicked

GETTEXT

getText ("id") is a built-in subroutine that collects the text entered into a textbox; "id" is to be replaced with the name given to the text box.

```
var x = getText("id");
```

VARIABLE (VAR)

Sometimes we need computers to remember the information we give it and that it calculates during programs. A variable **can be thought of as a box that the computer can use to store a value.** The value held in that box can change or 'vary'.
A program can use as many variables as it needs it to.

A variable can store letters, integers (numbers) or text.

For example:

```
>>> money_in_bank = 20
>>> total_money = money_in_bank + 10
>>> print(total_money)  30
```

SELECTION – BOOLEAN LOGIC (IF/ELSE/ELIF)

Selection is the process of making a decision based on a condition. Selection allows you to add more avenues and routes to your coding.

```
if (score > 10) {
  setText("feedback_label", "Great Work");
} else if (score > 6) {
  setText("feedback_label", "Not Bad");
} else {
  setText("feedback_label", "Hard Luck");
}
```

EVENT HANDLER

You can use an event handler to determine when to collect the data and what to do with it once it has been collected and linked with a variable.

```
onEvent("login", "click", function() {
  var username = getText("username");
});
```

EVALUATION

Verb

"To judge or calculate the quality, importance, amount, or value of something"

GRAPHICAL USER INTERFACE (GUI)