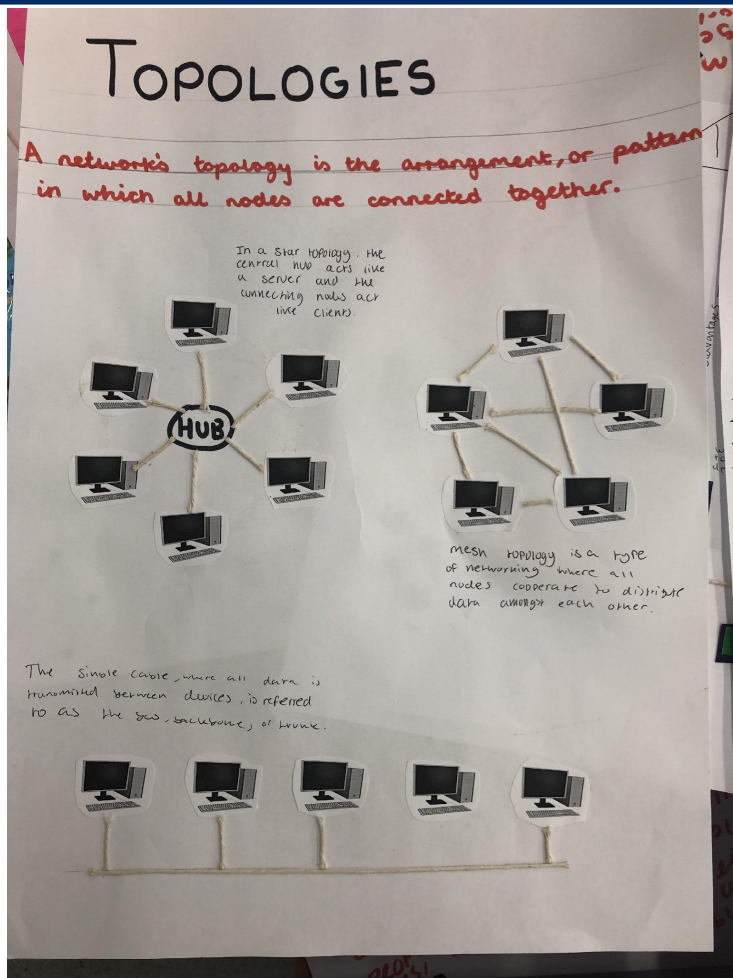


# Progression in Computer Science

[www.thehessleacademy.co.uk](http://www.thehessleacademy.co.uk)



I can  
identify and  
discuss  
different  
network  
topologies.



# Year 11



```
def retry():
    spaces=int(14)
    ticket_price=int(8)
    print("we have no change")
    print("welcome to the car park there are "+ str(spaces) +" spaces left")
    reg=input("enter the last 3 digits of your number plate").upper()
    if reg.isalpha():
        while len(reg)!=3:
            print("try again type retry() ")
        if len(reg)==3:
            print("thankyou you may carry on and find a space")
            cash=int(input("please pay £"+str(ticket_price)+" for your ticket"))
            remainder=8
            while cash<8 or remainder>0:
                remainder=remainder-cash
                print("you have paid £"+str(cash)+" currently")
                print("you need to pay £"+str(remainder)+" more")
                cash=int(input("pay more"))
            if cash==8:
                print("thanks have a nice day")
        else:
            print("try again type retry() ")
    try()
```

I can write programs that are robust and use validation to stop the program from crashing

# Year 12



Logic Gates

and

X	Y	$X \cdot Y$
0	0	0
0	1	0
1	0	0
1	1	1

or

X	Y	$X + Y$
0	0	0
0	1	1
1	0	1
1	1	1

not

X	$\bar{X}$
0	1
1	0

xor

X	Y	$X \oplus Y$
0	0	0
0	1	1
1	0	1
1	1	0

Boolean Algebra

Identity Laws

$$\begin{aligned} X \cdot 0 &= 0 \\ X \cdot 1 &= X \\ X \cdot X &= X \\ X \cdot \bar{X} &= 0 \\ X + 0 &= X \\ X + 1 &= 1 \\ X + X &= X \\ X + \bar{X} &= 1 \\ \bar{\bar{X}} &= X \end{aligned}$$

Commutative Laws

$$\begin{aligned} X \cdot Y &= Y \cdot X \\ X + Y &= Y + X \end{aligned}$$

Associative Laws

$$\begin{aligned} X \cdot (Y \cdot Z) &= (X \cdot Y) \cdot Z \\ X + (Y + Z) &= (X + Y) + Z \end{aligned}$$

Distributive Laws

$$\begin{aligned} X \cdot (Y + Z) &= X \cdot Y + X \cdot Z \\ (X + Y) \cdot (W + Z) &= X \cdot W + X \cdot Z + Y \cdot W + Y \cdot Z \end{aligned}$$

Absorption Laws

$$\begin{aligned} X + (X \cdot Y) &= X \\ X \cdot (X + Y) &= X \end{aligned}$$

De Morgan's Laws

$$\begin{aligned} \overline{X + Y} &= \bar{X} \cdot \bar{Y} \\ \overline{X \cdot Y} &= \bar{X} + \bar{Y} \end{aligned}$$

logic dog →

I can simplify  
Boolean  
Logic  
expressions.

# Year 13



10:26

## Hessle High School Navigator

Year Group?

Year Group

Floor?

☒ Ground ☐ First ☐ Second

Require Lift? ☐

Search for a Room...

- Toilets
- G01 - Technology
- G02 - Technology
- G03 - Technology
- G04 - Technology
- G05 - Technology

I can create project using complex industry standard algorithms

Second Floor

