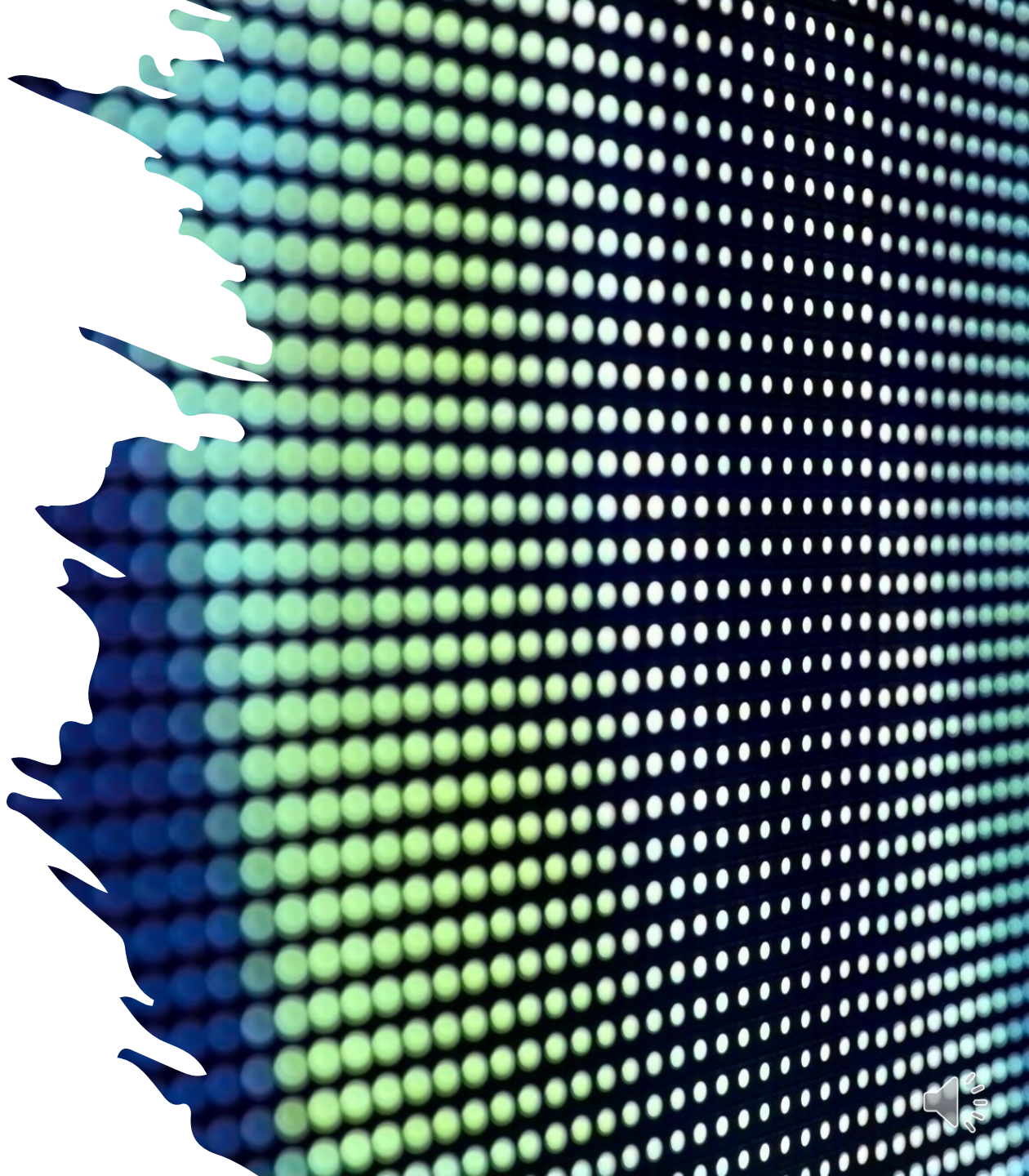
Computer Science
Digital Information & Technology
&
Business



GCSE (9–1)
Specification

OCR
Oxford Cambridge and RSA

Computer SCIENCE

The specification overview

Two papers

1

J277/01: Computer systems

Written paper: 1 hour and 30 minutes 50% of total GCSE 80 marks

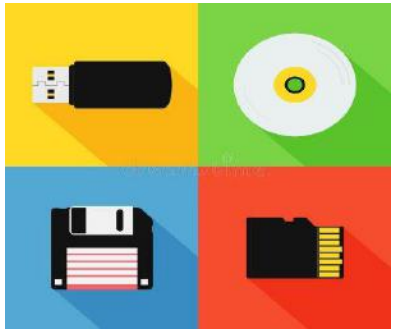
2

J277/02: Computational thinking, algorithms and programming

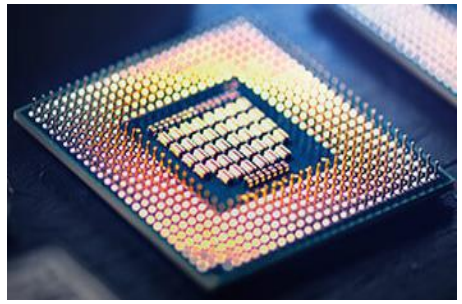
Written paper: 1 hour and 30 minutes 50% of total GCSE 80 marks

3

Practical Programming
All students must be given the opportunity to undertake a programming task(s), either to a specification or to solve a problem (or problems), during their course of study. Students may draw on some of the content in both components when engaged in Practical Programming.



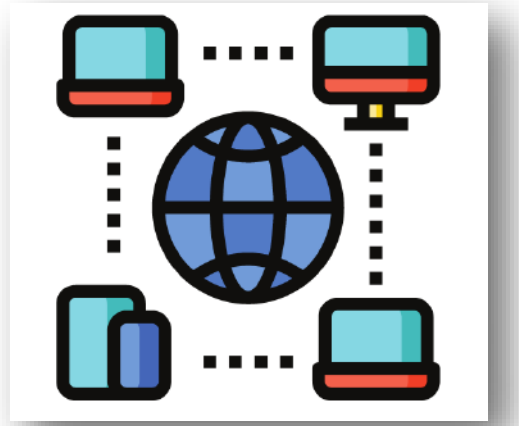
Content Overview



J277/01: Computer systems

This component will assess:

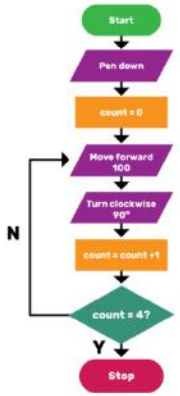
- 1.1 Systems architecture
- 1.2 Memory and storage
- 1.3 Computer networks, connections and protocols
- 1.4 Network security
- 1.5 Systems software
- 1.6 Ethical, legal, cultural and environmental impacts of digital technology



Content Overview

"Move forward 100 pixels, then turn clockwise 90 degrees. Do this a total of 4 times."

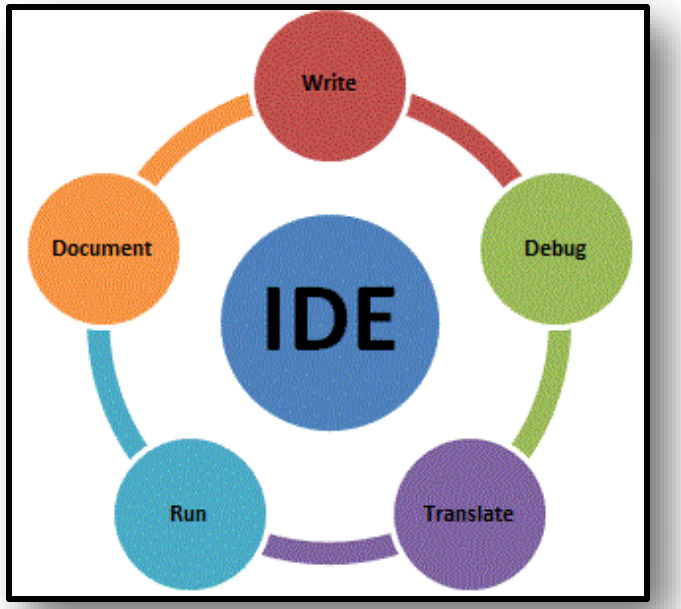
```
pen Down
count <- 0

repeat until count = 4
  forward 100
  clockwise 90°
  count = count +1
```



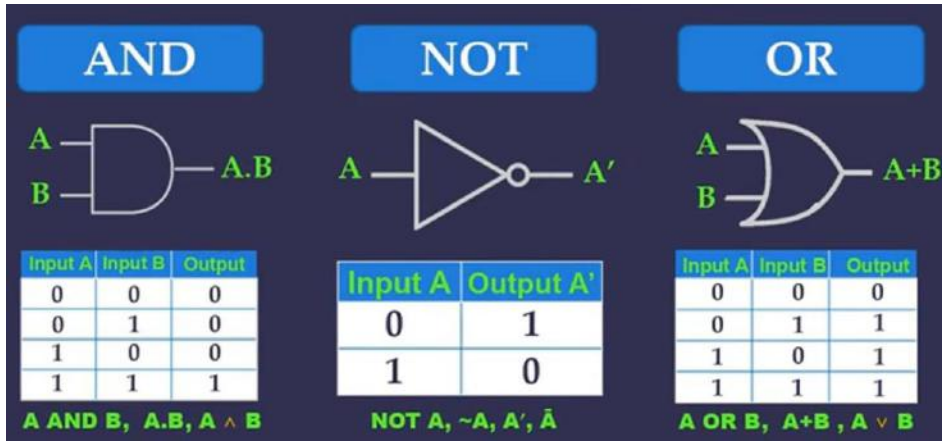
J277/02: Computational thinking, algorithms and programming

This component will assess:

- 2.1 Algorithms
- 2.2 Programming fundamentals
- 2.3 Producing robust programs
- 2.4 Boolean logic
- 2.5 Programming languages and Integrated Development Environments




```python
def send_email(email_address):
  try:
    #logic related to email delivery
    print(email_address)
  except Exception as e:
    logger.exception(f"Failed to deliver message to: {e}")
  else:
    logger.info("Delivered message successful")
def send_sms(phone_number):
  try:
    #logic related to sms delivery
    print(phone_number)
  except Exception as e:
    logger.exception(f"Failed to deliver message to: {e}")
  else:
    logger.info("Delivered message successful")
```



Academic subjects – such as A Levels

You can study computer science, computing, ICT, applied information and communication technology.

Related subjects include engineering, electronics, physics, pure maths, further maths, additional maths, computing and product design, communication studies.

Vocational Courses

There are a range of vocational qualifications (such as BTECs, NVQ/SVQs and Diplomas) linked to an interest in computer science including:

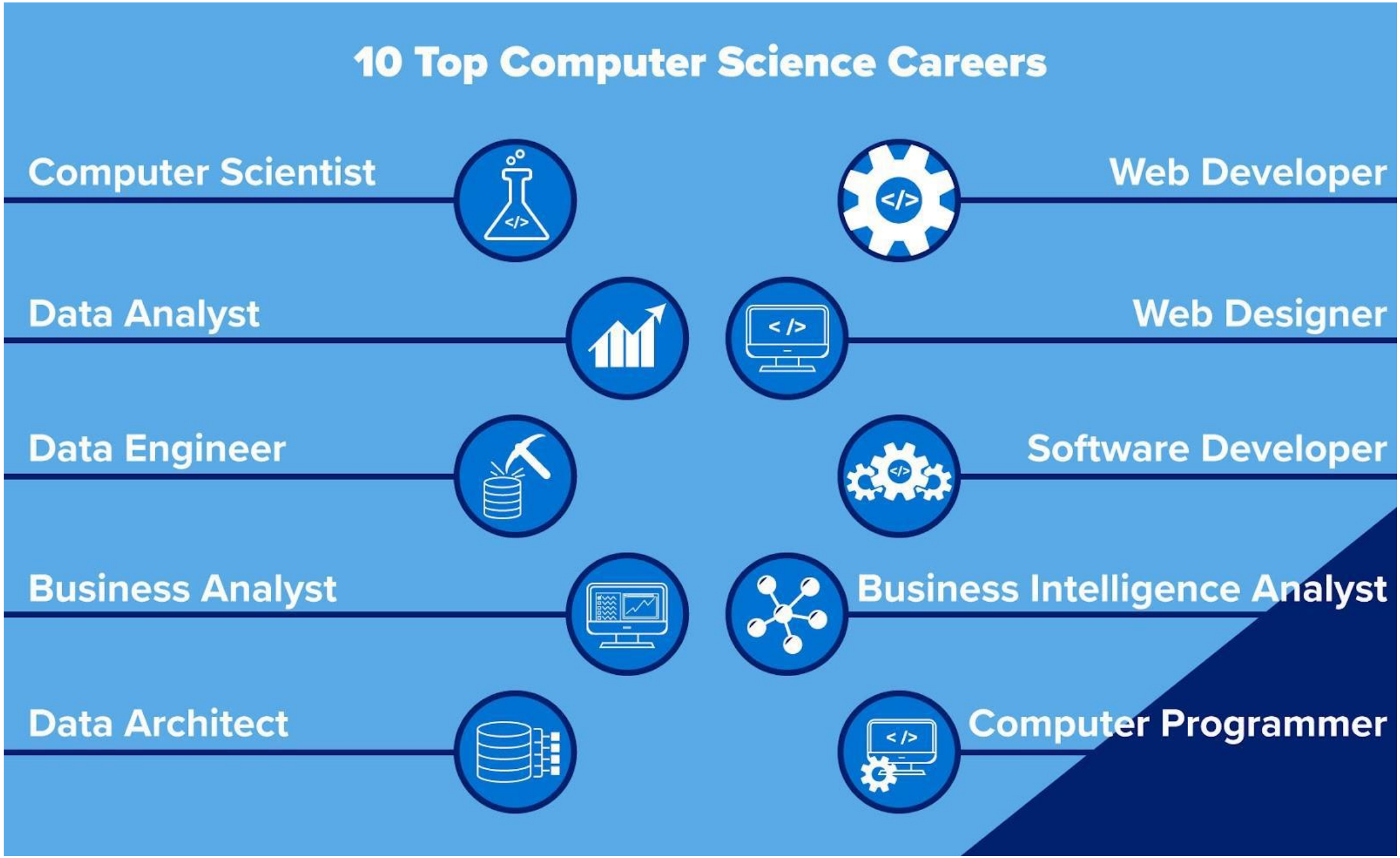
- Construction and The Built Environment
- Electrical Engineering
- Applied Science
- Computer Science
- Computer Programming
- Engineering
- information technology

Apprenticeships

Some apprenticeships are linked to computer science, such as:

- Civil Engineering Technician
- Installation Electrician
- Software Developer
- Network Engineer
- It Support
- It Technician
- It Analyst Programmer
- Web Developer
- Sound Technician

10 Top Computer Science Careers



Have you got what it takes?

- Problem Solver
- Good Mathematician
- Embodies Core Values
- Target Grade 6
- Achieving a Grade 6


Pearson
BTEC
Pearson BTEC
Tech Award Level 1/2 in
Digital Information Technology
First teaching from
September 2022

BTEC Tech Award in Digital IT

This is a vocational course for learners who want to acquire sector-specific applied knowledge and skills through vocational contexts

BTEC Level 1/Level 2 Tech Award in Digital Information Technology

Course Consists of 3 Units

Component 1: Exploring User Interface Design Principles and Project Planning Techniques

Component 2 : Collecting, Presenting and Interpreting Data

Component 3 : Effective Digital Working Practices

All units are assessed in exam conditions.

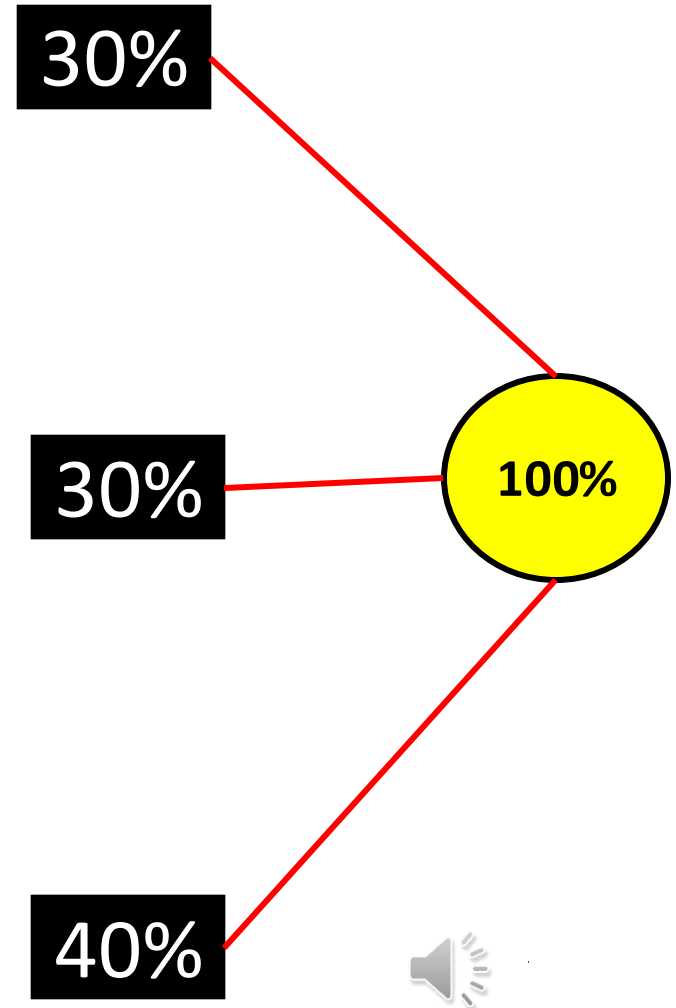
Pass, Merit, Distinction, Distinction *

Component	Description of Pearson-set Assignment
Component 1: Exploring User Interface Design Principles and Project Planning Techniques	Non-exam internal assessment set by Pearson, marked by the centre and moderated by Pearson. The Pearson-set Assignment will be completed in approximately 6 hours of supervised assessment. 60 marks.
Component 2: Collecting, Presenting and Interpreting Data	Non-exam internal assessment set by Pearson, marked by the centre and moderated by Pearson. The Pearson-set Assignment will be completed in approximately 6 hours of supervised assessment. 60 marks.
Component	**Description of external assessment**
Component 3: Effective Digital Working Practices	External assessment set and marked by Pearson, completed under supervised conditions. The assessment will be completed in 1 hour 30 minutes within the period timetabled by Pearson. 60 marks.

Internal assessment (PSA) 4 tasks Externally moderated

Internal assessment (PSA) 3 tasks Externally moderated

External synoptic exam Externally marked



Component 1: Exploring User Interface Design Principles and Project Planning Techniques

Learning Outcomes:

A Understand interface design for individuals and organisations

B Be able to use project planning techniques to plan, design and develop a user interface

C Be able to review a user interface.

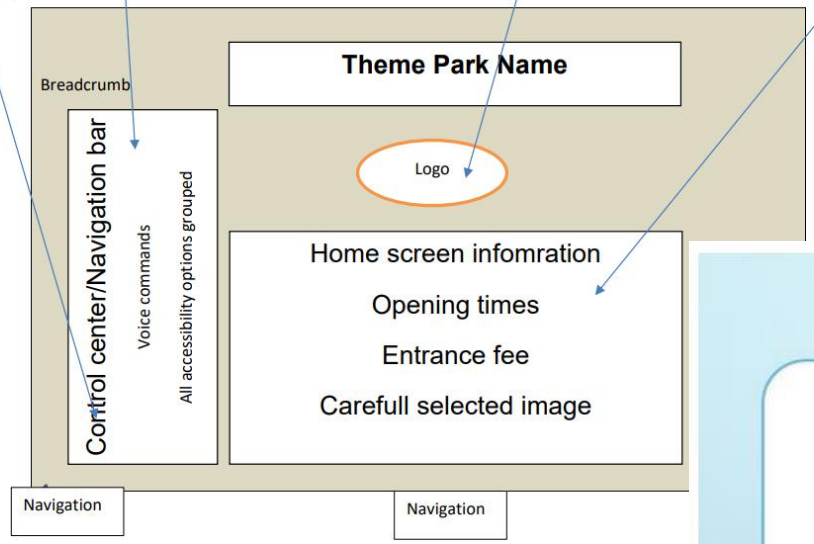
Screen 1 - home screen

Voice commands are used for people who are either blind and cant see which buttons to press or people who are unable to read.Screen navigation at the bottom of **each** screen

Black colour button icons will be used for all accessibility options so that they are easy to see and will be consistent on each slide

The Logo will be placed underneath the title so it can be differentiated and stand out. The logo will have bright colour contrast which will be consistent throughout the interface making it easy for users to remember. Logo to be cropped to fit screen.

The Theme park name will be placed at the top middle of the screen in bold and large font not only to facilitate users with seeing difficulty, but be eye catching to all the other users. The font will also be clear and easy to read . Black uppercase straight text no curly text which is unclar **ARIEL NOVA 28**



Component 2 : Collecting, Presenting and Interpreting Data

Learning Outcomes:

A Understand how data is collected and used by organisations and its impact on individuals

B Be able to create a dashboard using data manipulation tools

C Be able to draw conclusions and review data presentation methods

	A	B	C	D	E	F	G	H	I	J	K
1	Doctor Ratings over 3 Years										
2	Name of patient	Gender of patient	Doctor	Rating 2018	Rating 2019	Rating 2020	Would the patient recommend their doctor in 2018?	Would the patient recommend their doctor in 2020?	Check in method	Check in method score 2020	Check in method feedback
3	Deborah Beechcraft	F	Hughes	7	7	7	Yes	Yes	Digital	5	Excellent
4	Catie Morres	F	Hughes	8	8	8	Yes	Yes	Digital	5	Excellent
5	Ivanka Shulter	F	Hughes	10	8	10	Yes	No	Receptionist	4	Very Good
6	Galina Chenko	F	Hughes	10	9	11	Yes	Yes	Digital	5	Excellent
7	Bridie Foretti	F	Hughes	9	7	9	Yes	Yes	Receptionist	1	Poor
8	Sunita Mateja	F	Hughes	8	8	10	Yes	No	Receptionist	1	Poor
9	Teresa Humbatch	F	Hughes	8	6	8	Yes	Yes	Text message	4	Very Good
10	Ceri Vanyush	F	Hughes	8	8	8	Yes	Yes	Digital	1	Poor
11	Andrew Mitchley	M	Hughes	8	6	8	Yes	Yes	Digital	2	Average
12	Celia Wegener	F	Hughes	7	7	7	Yes	Yes	Digital	5	Excellent
13	Joanna Richmond	F	Hughes	9	7	9	Yes	Yes	Receptionist	5	Excellent
14	Kevin Whitehorn	M	Hughes	10	10	10	Yes	No	Text message	2	Average
15	Karen Ward	F	Hughe								
16	Yvon Pirot	F	Hughe								

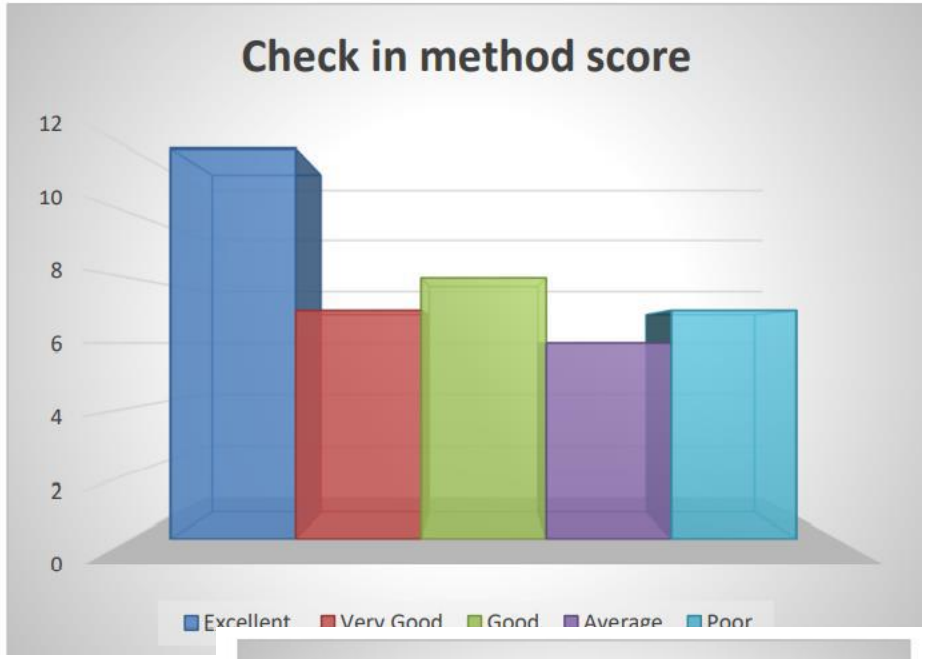
Imported Dataset | Analysis

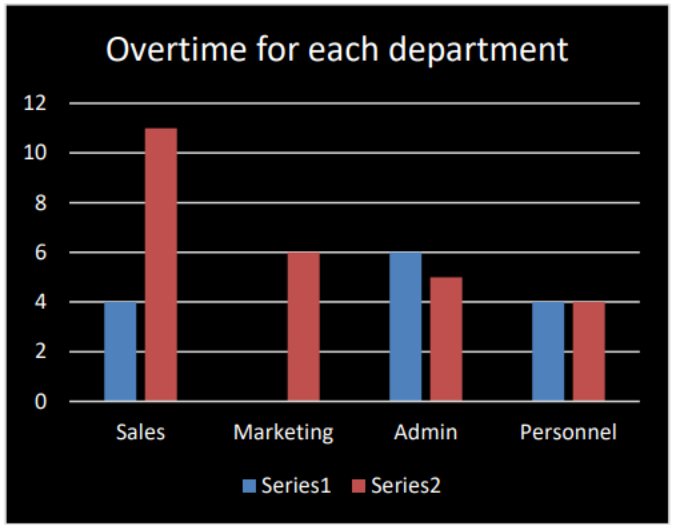
Number of scores	Percentage of number of scores
11	28%
8	20%
8	20%
6	15%
7	18%

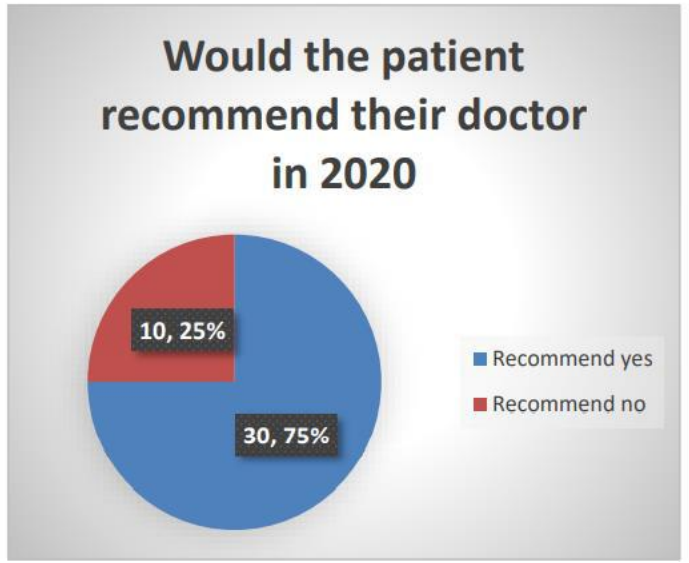
This shows the use of percentages as a **data summary**.

Patient gender	
Male	13
Female	26

Showing the use of count as a **data summary**.







Component 3 : Effective Digital Working Practices

Learning Outcomes:

A Modern Technologies

B Cyber security

C Implications of digital systems

D Planning and communication

A Modern Technologies

- Topic 1 - Communication technologies
- Topic 2 - Cloud storage and computing
- Topic 3 - Using cloud technologies
- Topic 4 - Modern team working
- Topic 5 - Inclusivity and accessibility
- Topic 6 - Impacts of modern technologies

B Cyber security

- Topic 1 - System attacks and external threats
- Topic 2 - Internal threats and impact of breaches
- Topic 3 - User restrictions and finding weaknesses
- Topic 4 - Data level protection
- Topic 5 - Policy, backups and data recovery

C Implications of digital systems

- Topic 1 - Shared data
- Topic 2 - Environmental issues
- Topic 3 - Equal access
- Topic 4 - Use policies
- Topic 5 - Data protection
- Topic 6 - Criminal use

D Planning and communication

- Topic 1 Data flow diagrams
- Topic 2 Flowcharts
- Topic 3 System diagrams
- Topic 4 Tables

What can the qualification lead to?

Progression to:

- A Levels as preparation for entry to higher education in a range of subjects
- study of a vocational qualification at Level 3, such as a BTEC National in IT, study of IT Support or Digital Technology through a Technical Certificate.

Here are some of the highest paying IT jobs:

- Data Scientist.
- Internet of Things (IoT) Solutions Architect.
- Big Data Engineer.
- Software Architect.
- Blockchain Engineer.
- DevOps Engineer.
- Cloud Architect.
- Full-Stack Developer.

edexcel

GCSE (9-1) Business

Theme 1: Investigating small business (*Paper code: 1BS0/01)

Written examination: 1 hour and 30 minutes

50% of the qualification

90 marks

Content overview

- Topic 1.1 Enterprise and entrepreneurship
- Topic 1.2 Spotting a business opportunity
- Topic 1.3 Putting a business idea into practice
- Topic 1.4 Making the business effective
- Topic 1.5 Understanding external influences on business

Theme 2: Building a business (Paper code: 1BS0/02)

Written examination: 1 hour and 30 minutes

50% of the qualification

90 marks

Content overview

- Topic 2.1 Growing the business
- Topic 2.2 Making marketing decisions
- Topic 2.3 Making operational decisions
- Topic 2.4 Making financial decisions
- Topic 2.5 Making human resource decisions

Links to further studies/careers

A Levels/ Level 3 BTEC

Remains an extremely popular option at KS5. Students can continue their studies through both the GCSE and A Level courses provided in the sixth-form.

Apprenticeships in business

Apprenticeships mean you can earn a salary and gain a qualification at the same time. There are over 280 types of apprenticeship and over 1,500 job roles.

Business at University

Many students after sixth-form study business into higher education. Business management remains a popular choice.

Careers in business

Excellent interpersonal skills developed. This course develops skills required for the key functions of business: finance, HR, marketing and operations.

Top Jobs for Business Majors

1. Accountant.
2. Business Reporter. ...
3. Business Teacher/Lecturer. ...
4. Corporate Attorney. ...
5. Financial Analyst. ...
6. Management Consultant.

It is time to think…

- *These are professional qualifications*
- *You need to spend time on the complex topics*
- *It won't be easy*
- *You need to have passion for these subjects, otherwise they can be extremely boring.*

These subjects hold a great value for your future


Thank you for listening