

OCR GCSE (J277) – SLR 1.1 SYSTEMS ARCHITECTURE

All files needed for this topic are in this folder.

It covers: 1.1.1 – 1.1.3 from the specification

This folder contains the following files:



Lesson overview PowerPoints

One for each lesson to be displayed at the front of the classroom to provide structure to the lesson.



End of topic test

Written using exam style questions.

All tests are out of 20 so easy comparisons can be made between different topics.

Full answers provided.



Student workbook

This is the main file students complete as they progress through a topic. Includes an opportunity for assessment and feedback. Includes a RAG rating self-assessment page.



Student workbook (answers)

A grade 9 model answer version of the blank student workbook.

Doubles up as an excellent knowledge organiser to hand out to students when needed.

If you wish to follow our dedicated scheme of learning and delivery calendars these can be downloaded separately from your premium resources login by selecting the following tile:

- Other GCSE Resources

For guidance on how to formally assess your students at the end of this topic and to get the most out of our “Student workbooks” please check out the following video on our YouTube channel:



 [Assessment with Craig'n'Dave – \(GCSE\)](#)



README – Getting the most out of our resources

Theory coverage

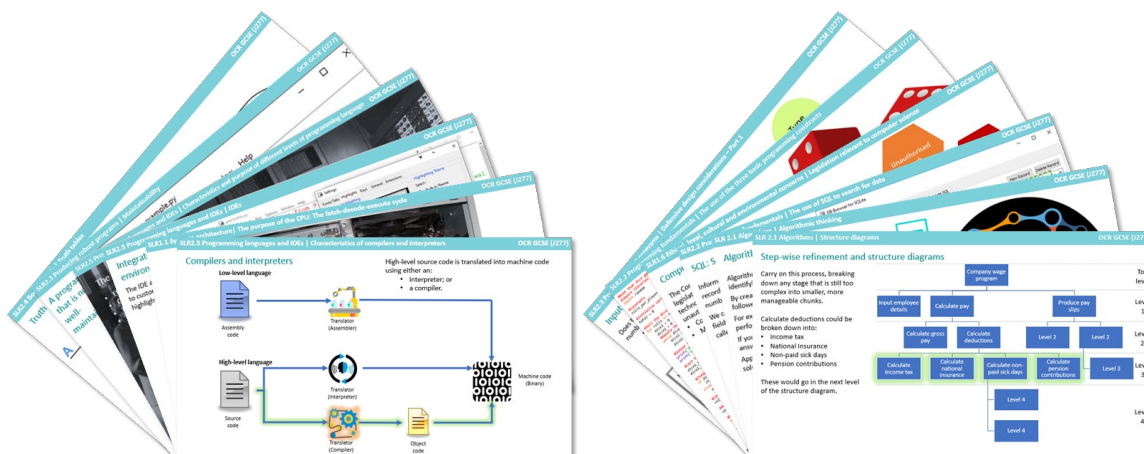
With Craig 'n' Dave resources, you do not need to teach the content of the course from the front of the class. Instead, you set students a video to watch ahead of the lesson from our student page:

student.craigndave.org

Advise them to pause the video when they see the notes icon and record the key theory in an exercise book that they will then bring to the lesson to help them complete the activities. The entire specification is covered point by point in these videos.



If you wish to deliver our theory videos in a more traditional approach however we also provide them as PowerPoints file. These can be downloaded from your premium resources login.



README – Getting the most out of our resources

Additional resources

Don't forget, your subscription comes with full access to all our additional resources. These can all be downloaded from your premium resource's login. These include:

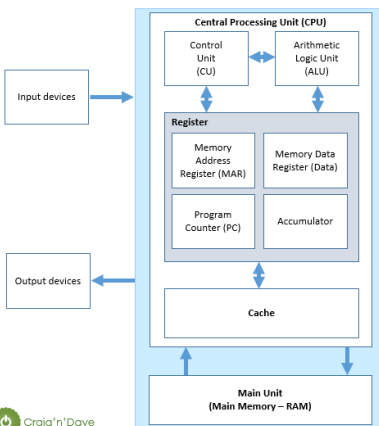
- Programming resources (Python, C#, T.I.M.E, Defold games development)
- Delivery guides/calendars
- Key terminology databases
- Student revision checklists
- "Those little extras" pack
- PDF copy of our "Essential algorithms and data structures" book from Amazon
- Paper 2 exam revision unit
- Pseudocode cheat sheet
- Text-based adventure game (Telium)

GCSE COMPUTER SCIENCE CALENDAR 2016-17				
YEAR 10				
Week	Date	Lessons		
1	05/09/2016	Introduction lesson	1.1 Lesson 1	1.1 Lesson 2
2	12/09/2016	1.1 Lesson 3	1.1 Lesson 4	1.1 Lesson 5
3	19/09/2016	Programming	Programming	Programming
4	26/09/2016	1.1 Test	1.1 Action	1.2 Lesson 1
5	03/10/2016	1.2 Lesson 2	1.2 Lesson 3	1.2 Lesson 4
6	10/10/2016	1.2 Test	1.2 Action	1.3 Lesson 1
7	17/10/2016	1.3 Lesson 2	1.3 Lesson 3	1.3 Lesson 4
Half Term				
1	24/10/2016	1.3 Test	1.3 Action	Programming
2	07/11/2016	1.4 Lesson 1	1.4 Lesson 2	1.4 Lesson 3
3	14/11/2016	1.4 Lesson 4	1.4 Lesson 5	1.4 Lesson 6
4	21/11/2016	1.4 Lesson 7	Programming	Programming
5	28/11/2016	1.4 Test	1.4 Action	Programming
6	05/12/2016	Programming	Programming	Programming
7	12/12/2016	Programming	Programming	Programming
Christmas				
1	02/01/2017			1.5 Lesson 1
2	09/01/2017	1.5 Lesson 2	1.5 Lesson 3	1.5 Lesson 4
3	16/01/2017	1.5 Lesson 6	1.5 Lesson 7	Programming
4	23/01/2017	Programming	Programming	Programming
5	30/01/2017	1.5 Test	1.5 Action	Programming
6	06/02/2017	Programming	Programming	Programming
Half Term				
1	20/02/2017	1.6 Lesson 1	1.6 Lesson 2	1.6 Lesson 3
2	27/02/2017	1.6 Lesson 4	1.6 Lesson 5	1.6 Lesson 6
3	06/03/2017	1.6 Lesson 7	1.6 Lesson 8	1.6 Lesson 9
4	13/03/2017	1.6 Test	1.6 Action	Programming
5	20/03/2017	1.7 Lesson 1	1.7 Lesson 2	1.7 Lesson 3
6	27/03/2017	1.7 Lesson 4	Programming	Programming
7	03/04/2017	SLK 1.7 Test	Programming	SLK 1.7 Act
Easter				
1	24/04/2017	1.8 Lesson 1	1.8 Lesson 2	1.8 Lesson 3
2	01/05/2017		1.8 Lesson 4	1.8 Lesson 5
3	08/05/2017	1.8 Lesson 6	1.8 Lesson 7	1.8 Lesson 8
4	15/05/2017	Programming	Programming	Programming
5	22/05/2017	SLK 1.8 Test	Programming	SLK 1.8 Act
Half Term				

GCSE Unit 1.1 | Systems architecture

OCR GCSE
[1277]

The Von Neumann architecture (an abstracted view)



An explanation of the Von Neumann architecture:

- The Von Neumann architecture consists of a:
 - Control Unit (CU)
 - Arithmetic and Logic Unit (ALU)
 - Memory Unit (typically RAM)
 - Inputs and Outputs
- It is based on the concept of the stored-program concept.
- Both instruction data AND program data are stored in the same memory in binary form.
- There is no way to know if the pure binary held in memory is representing instructions or data simply by looking at it.

systems architecture

STARTER

The toy railway

It is quicker to get

The processor core, cache

The starter cards include:

- RAM**: Random Access Memory
- ROM**: Read Only Memory
- PC**: Program Counter
- Accumulator**: A register that holds the result of an arithmetic operation
- Cache**: A small, fast memory that stores data from RAM
- Cache-based**: A system that uses a cache to store data
- Cache size**: The amount of data that can be stored in the cache
- Cache hit**: When the data requested is found in the cache
- Cache miss**: When the data requested is not found in the cache
- Cache coherence**: A state where all caches have a consistent view of the data
- Cache consistency**: A state where all caches have the same data
- Cache invalidation**: The process of removing data from the cache
- Cache replacement**: The process of replacing data in the cache
- Cache write-back**: A policy where data is written back to RAM when the cache is full
- Cache write-through**: A policy where data is written to both the cache and RAM
- Cache write-combining**: A policy where multiple writes are combined into a single write
- Cache write-allocate**: A policy where data is allocated to the cache when it is written
- Cache write-no-allocate**: A policy where data is not allocated to the cache when it is written
- Cache write-miss**: A cache miss that occurs when data is written
- Cache write-hit**: A cache hit that occurs when data is written
- Cache write-error**: An error that occurs when data is written
- Cache write-failure**: A failure that occurs when data is written
- Cache write-timeout**: A timeout that occurs when data is written
- Cache write-retry**: A retry that occurs when data is written
- Cache write-abort**: An abort that occurs when data is written
- Cache write-rollback**: A rollback that occurs when data is written
- Cache write-recovery**: A recovery that occurs when data is written
- Cache write-restore**: A restore that occurs when data is written
- Cache write-save**: A save that occurs when data is written
- Cache write-load**: A load that occurs when data is written
- Cache write-store**: A store that occurs when data is written
- Cache write-fetch**: A fetch that occurs when data is written
- Cache write-execute**: An execute that occurs when data is written
- Cache write-terminate**: A terminate that occurs when data is written
- Cache write-halt**: A halt that occurs when data is written
- Cache write-stop**: A stop that occurs when data is written
- Cache write-end**: An end that occurs when data is written



README – Getting the most out of our resources

Our pedagogy

Read more about our pedagogy here:



craigndave.org/our-pedagogy

We have additional videos which you might find useful which explain the Flipped Classroom method of teaching on our YouTube channel:



youtube.com/watch?v=ErJIJ5xhW-M&list=PLCiOXwirraUBEEFcJfSQgE2P-pcor9b9c

More reasons to teach with Craig 'n' Dave

Find out more about why we think our resources are the best available for delivering GCSE Computer Science here:

craigndave.org/why-teach-with-craigndave-resources

If you have issues opening any of the files or experience any other problems, or you just want to ask us a question / provide feedback feel free to email us:



admin@craigndave.co.uk

