GMIT
INSTITIÚID TEICNEOLAÍOCHTA NA GAILLIMHE-MAIGH EO
GALWAY-MAYO INSTITUTE OF TECHNOLOGY

COMP07085
Data Representation

Full Title	Data Representation

Status	Uploaded to Banner	**Start Term**	2017
NFQ Level	07	**ECTS Credits**	05
Module Code	COMP07085	**Duration**	Semester - (13 Weeks)
Grading Mode		**Department**	Comp Science & Applied Physics
Module Author	Ian McLoughlin		

Module Description

A module in which students will investigate and operate the protocols, standards and architectures used in representing data, with a focus on interacting with data services across the internet. Students will also gain practical experience in developing applications that interact with such data.

	Learning Outcomes ***On completion of this module the learner will/should be able to:***
1.	Compare data models and architectures used in applications.
2.	Write software applications that adhere to common standards and protocols.
3.	Explain the basic mechanisms by which application data is transmitted across the internet.
4.	Design and utilise application programming interfaces for interacting with data sources.

Indicative Syllabus

Fundamentals

- HyperText Transfer Protocol (HTTP)
- Uniform Resource Locator (URL) encoding
- REpresentational State Transfer (REST)

Data models

- JavaScript Object Notation (JSON)
- eXtensible Markup Language (XML)
- Document Object Model (DOM)
- Document-oriented storage

Architectures

- Client-Server
- Request-Response
- Asynchronous Javascript And Xml (AJAX)
- Sessions

Teaching and Learning Strategy

A combination of theory lecture and practicals will be given. The lectures will cover the theoretical basis of the various topics, whereas in the practicals a demonstration of the practical aspects of the topics will be given, and students will be encouraged to follow along.

Assessment Strategy

Students will complete a programming project during the module, with an emphasis on adding the project to the student's online portfolio of work. Some lectures will be dedicated to topics related directly to the project, so that the student can grasp the essence of the project quickly.

A final exam will test the student's understanding of the topics as presented in class. This will be based on the materials covered in class, such as lecture slides and problem sheets.

Repeat Assessment Strategies

A repeat exam will be provided, similar in structure to the final exam for the module. The student's continuous assessment mark will be considered in determining the repeat mark.

Indicative Coursework and Continuous Assessment:		**100 %**		
Form	***Title***	***Percent***	***Week (Indicative)***	***Learning Outcomes***
Project	Project	60 %	OnGoing	3,4
Assessment	Problem sets	40 %	OnGoing	1,2,3,4

Full Time Delivery Mode Average Weekly Workload:			**4.00 Hours**		
Type	***Description***	***Location***	***Hours***	***Frequency***	***Weekly Avg***
Lecture	Lecture	Lecture Theatre	2	Weekly	2.00
Practical	Practical	Computer Laboratory	2	Weekly	2.00

Online Learning Delivery Mode Average Weekly Workload:			**4.00 Hours**		
Type	***Description***	***Location***	***Hours***	***Frequency***	***Weekly Avg***
Online Learning	Online (Asynchronous)	Not Specified	3	Weekly	3.00
Online Learning	Online (Synchronous)	Not Specified	1	Weekly	1.00

Recommended Reading Book List

Belshe, M., Peon, R., Thomson, M., , ., (2015). *Hypertext Transfer Protocol Version 2 (HTTP/2)*. Internet Engineering Task Force (IETF) .

Online Resources

- http://www.w3.org
- https://developer.mozilla.org
- http://www.ecma-international.org
- https://developers.google.com/

Programme Membership

GA_KDATG_L08 201700 Higher Diploma in Science in Data Analytics