MODULE INTRODUCTION

CMM007/CMM503

MODULE INTRODUCTION	1
HTML	2
CSS	3
HOW BROWSERS WORK	4
USING PHP IN WEB APPLICATIONS	5
DEALING WITH LARGE SCALE DATA	6
MVC AND ITS USE IN WEB	7
SECURE WEB PRACTICES	8
	9
TRADITIONAL AND MODERN WEB STACKS	10
CLOUD DEPLOYMENT METHODS	11
REVISION	12

	Module Title **Intranet Systems Development** ***Keywords*** Internet, Intranet, Extranet, World Wide Web, Web Programming, HTML, Style Sheets, PHP, http, Apache	Reference CMM007 SCQF Level SCQF 11 SCQF Points 15 ECTS Points 7.5 Created May 2002 Approved April 2005 Amended April 2016 Revision No. 5

Prerequisites for Module

None.

Corequisite Modules

None.

Precluded Modules

None.

Aims of Module

To introduce and explore the key concepts of intranet systems development. To develop the student's skill in the practical design, development and management of Intranet systems.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

1. Design and implement dynamic WWW pages appropriate to a given objective.
2. Manage the development and maintenance of intranet systems.
3. Develop server−side applications.
4. Demonstrate familiarity with the main Internet application types.

Indicative Module Content

HTML, CSS, PHP, mySQLdatabases

Indicative Student Workload

Contact Hours	Full Time
Laboratories	24
Lectures	24
Directed Study	
Assessment	3
Coursework Preparation	15
Directed Reading	40
Private Study	
Private Study	44

Mode of Delivery

Key concepts are introduced and illustrated through the medium of lectures. Laboratory sessions provide a series of exercises designed to develop proficiency in techniques essential to the development of intranet systems.

Assessment Plan

	Learning Outcomes Assessed
Component 1	2,4
Component 2	1,3

Component 1 – This is a closed book examination worth 50% of the total module assessment.

Component 2 – The coursework assignment is worth 50% of the total module assessment.

Indicative Bibliography

1. DUCKETT,J.2011. HTML and CSS: Design and Build Websites. John Wiley & Sons.
2. DUCKETT, J. 2014. JavaScript and JQuery: Interactive Front−End Web Development. Wiley Publishing. Chicago.

Additional Notes

World Wide Web Consortium, Web Design and Applications, http://www.w3.org/standards/webdesign/ , accessed 11/04/2012
MySQL, www.mysql.com, accessed 11/04/2012

CMM007

	Module Title **Web System Development** ***Keywords*** Web applications, internet security, web applications attacks and defences	Reference CMM503 SCQF Level SCQF 11 SCQF Points 15 ECTS Points 7.5 Created August 2002 Approved April 2005 Amended April 2016 Revision No. 6

Prerequisites for Module

None.

Corequisite Modules

None.

Precluded Modules

None.

Aims of Module

To explore the key concepts in web−based development.
To gain an understanding of the main security threats to web?based systems.
To develop the students' skill in the main technologies that underpin web−based systems.
To provide the student with practical experience in applying these technologies to produce simple web−based systems.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

1. Design and Implement simple web−based systems appropriate to a given objective.
2. Identify, analyse and describe key issues and problems in the development of web−based systems.
3. Identify and describe recent trends and development in web technologies.
4. Critically appraise security techniques for the design of web−based systems.

Indicative Module Content

Internet infrastructure, client?server architectures, Hypertext Mark?up Language (HTML), Cascading Style Sheet (CSS), client?side script (JavaScript), server?side script (PHP), JavaScript Object Notation (JSON), Ajax, Web services.

Web−based attacks and defences: HTTP vulnerabilities, HTTP response splitting, cache poisoning, cross−site scripting (XSS), set−cookie attacks, cross−site request forgery (CSRF), clickjacking, web defacement, countermeasures and defences, web application firewalls.

Indicative Student Workload

Contact Hours	Full Time
Laboratories	36
Lectures	12
Directed Study	
Assessment	3
Coursework Preparation	15
Directed Reading	36
Private Study	
Private Study	48

Mode of Delivery

Key concepts are introduced and illustrated through the medium of lectures. Laboratory sessions provide a series of exercises designed to develop proficiency in techniques essential to the development of web−based systems.

Assessment Plan

	Learning Outcomes Assessed
Component 1	3,4
Component 2	1,2

Component 1 – This is a closed book examination.(50%)

Component 2 – The coursework will design and develop a web−based system.(50%)

Indicative Bibliography

1. POWERS, D., 2014, PHP solutions: dynamic web design made easy, Apress
2. SHEMA, M., 2012, Hacking web apps: detecting and preventing web application security problems, Syngress
3. HAVERBEKE, M., 2014, Eloquent JavaScript: A Modern Introduction to Programming, No Starch Press.

CMM503

Indicative Student Workload

Contact Hours	Full Time
Laboratories	24
Lectures	24
Directed Study	
Assessment	3
Coursework Preparation	15
Directed Reading	40
Private Study	
Private Study	44

CMM007

Indicative Student Workload

Contact Hours	Full Time
Laboratories	36
Lectures	12
Directed Study	
Assessment	3
Coursework Preparation	15
Directed Reading	36
Private Study	
Private Study	48

CMM503

CONTACT TIME

1 x 3 hour Lecture/Lab Session Per Week
1 x 1 hour (Optional) Lab Session Per Week

Find a time that suits you!
I can normally be found in the UX Lab (N526)

CASC

Dr Michael Crabb - Tuesday 10am - noon
Dr Stewart Massie - tbc

EXAM

1 x 3 hour Exam at End of Semester

COURSEWORK & REVISION

99 Hours over Semester

LECTURE / LAB SESSIONS

Will normally start with a short(ish) lecture explaining some concepts that are important to web development.

Lab afterwards on a number of different topics.

Multiple lab activities are available every week - its up to you to decide which one(s) you want to attempt.

Lab activities may take longer than the lab itself…you will want to continue working on these in your own time.

Labs are categorised according to their difficulty. You should always attempt to challenge yourself…but don't attempt labs unless you are comfortable in all prerequisite labs.

BEGINNER	Everyone should manage these labs with no difficulty
EASY	These labs may pose some challenge but should still be manageable
NORMAL	These labs will pose some difficulty but can be completed with some effort
HARD	These labs will have some challenging aspects
CHALLENGING	These labs are very difficult. You will be challenged through these sessions.

MATRIX OF KNOWLEDGE

You should be here AFTER completing a lab	I know what I know	I know what I don't know
This square creates a lot of risk!	I don't know what I know	I don't know what I don't know

You should be here BEFORE completing a lab

Ask for help if here...

EXAMPLE...

Making a CSS Webpage

Using CSS Bootstrap

Using SASS

COURSEWORK

Individual coursework (no working in groups)
Create a web application

3 submissions throughout the semester

Similar project specification for both CMM007 and CMM503 but with slight differences

HAND IN 1

Requirements list, project constraints, and application description

HAND IN 2

Completed web application
Web application testing
Description of security features (CMM503)

HAND IN 3

Development of API for web application (CMM007)

Penetration testing of 2 classmates applications and associated documentation (CMM503)

WEB APPLICATION CONSTRAINTS

- Your completed web application must be hosted on the Microsoft Azure platform

- Your web application must contain both front end (client side) and back end (server side) code

- The created web application must contain the following features
  - A login system
  - Some type of file upload system
  - A system for users to input data that stored and then recalled from a database

PROJECT EXAMPLES

- Some example project ideas that you are free to use are online
- You can (if you want) come up with your own idea but you have to run it by me first.

WE DON'T WANT YOU TO BE A
"GOOD WEB DEVELOPER"

WE WANT YOU TO BE AN

Awesome Web Jedi!

gitHub

Lets you keep all of your code in a single place

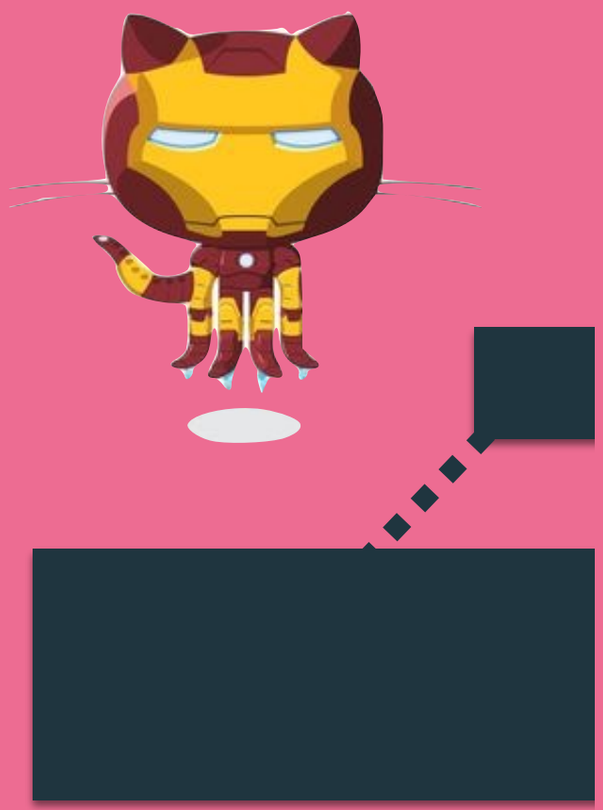
Allows people work on the same project at the same time

Keeps a track of all changes that are made to your code

You are expected to use gitHub in this module

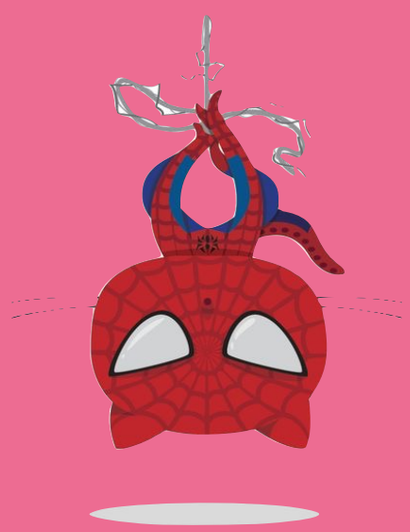
gitHub

gitHub

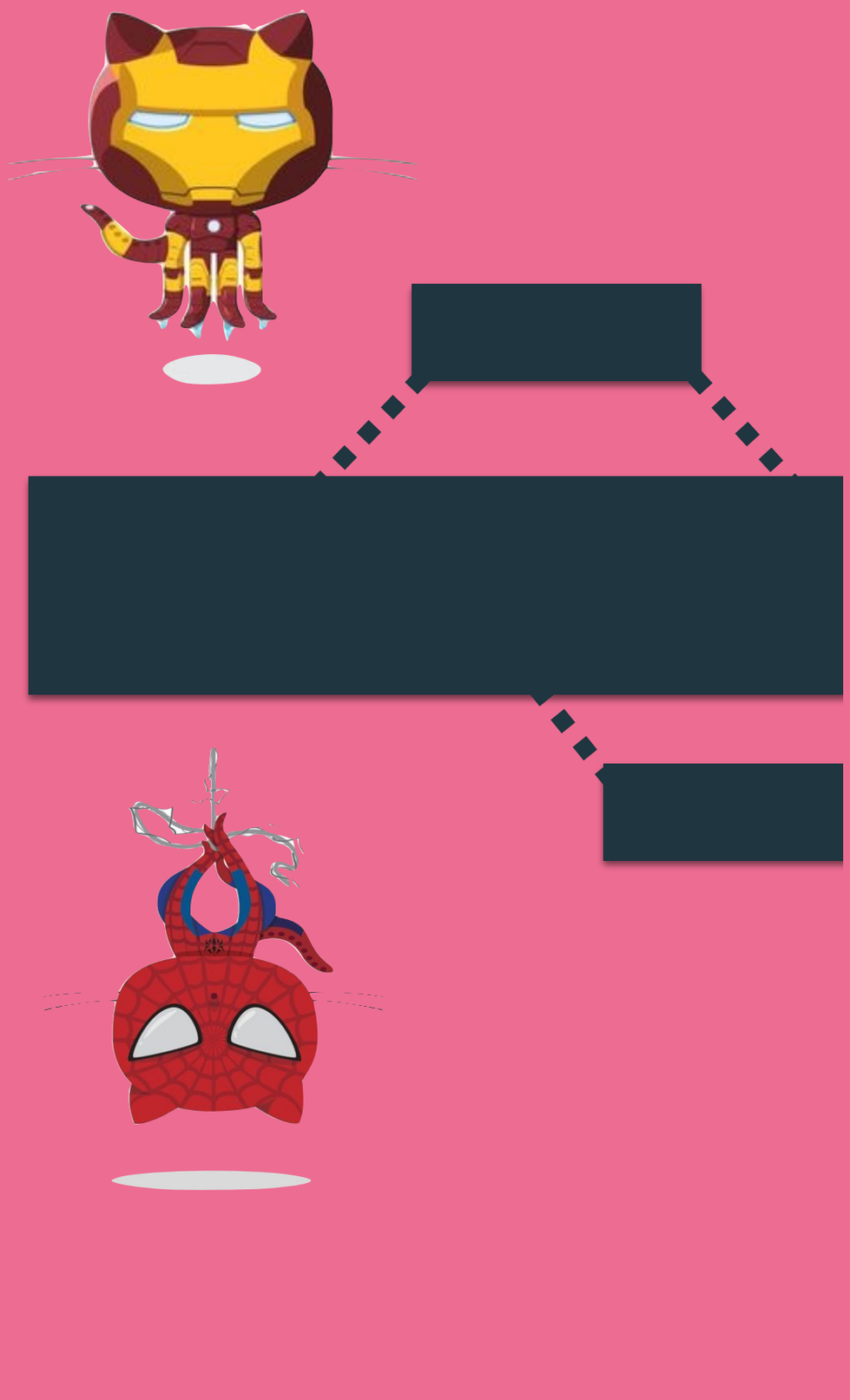


gitHub

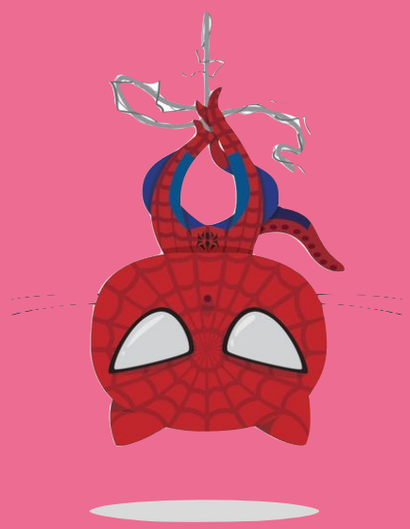
gitHub



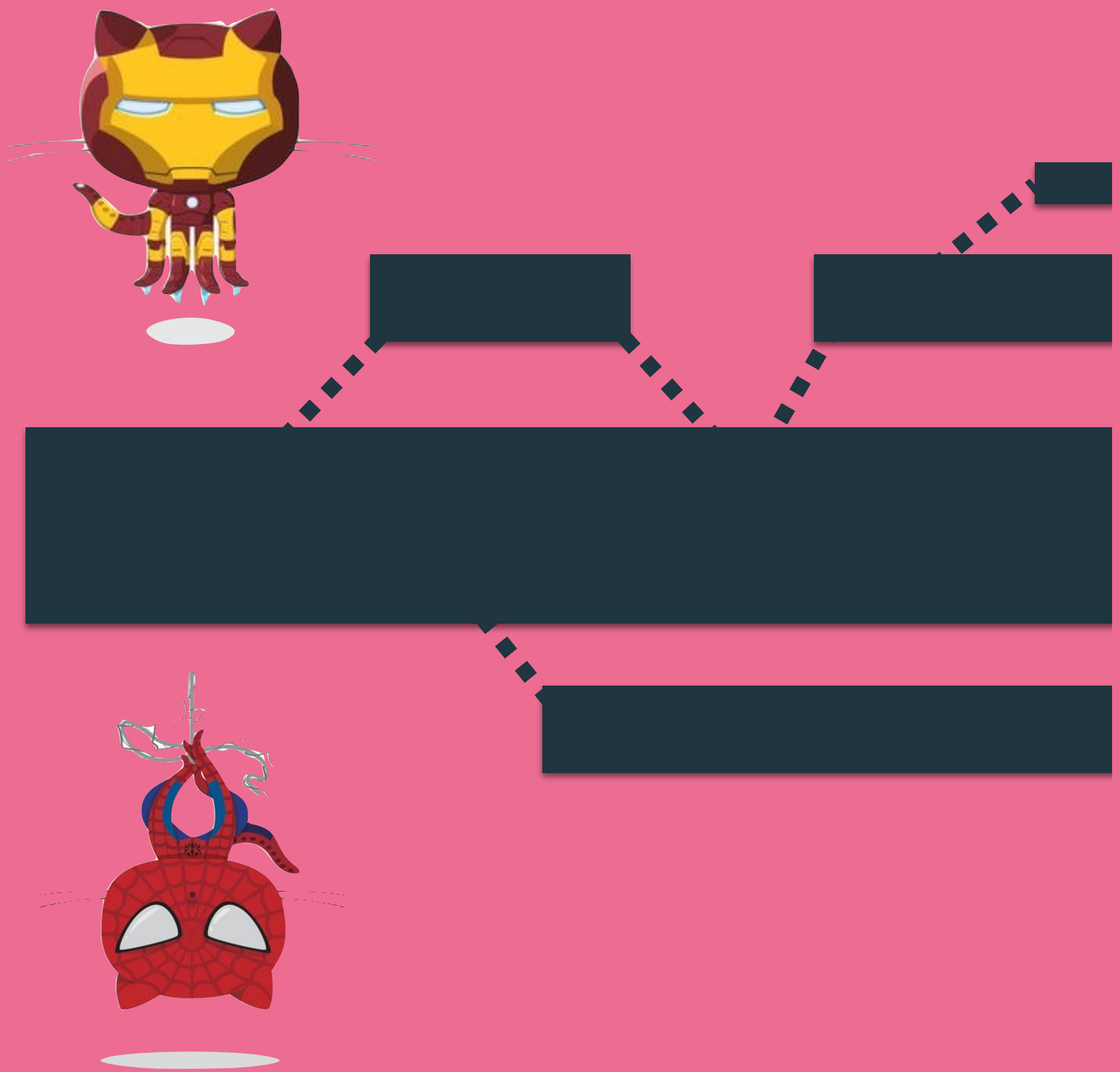
gitHub



gitHub

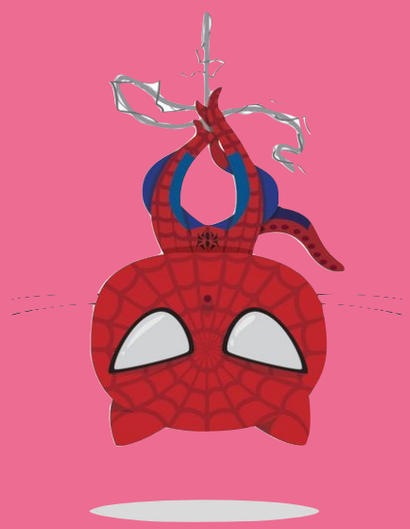


gitHub

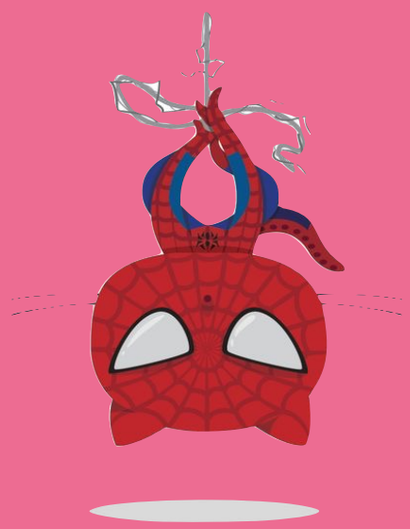


gitHub

gitHub



gitHub



gitHub

LAB ACTIVITIES

COURSEWORK

gitHub

Code Store

gitHub

phpStorm

Development Environment

Code Store

Microsoft Azure

Hosting Platform


PS


Microsoft
Azure


PS


Microsoft
Azure


PS

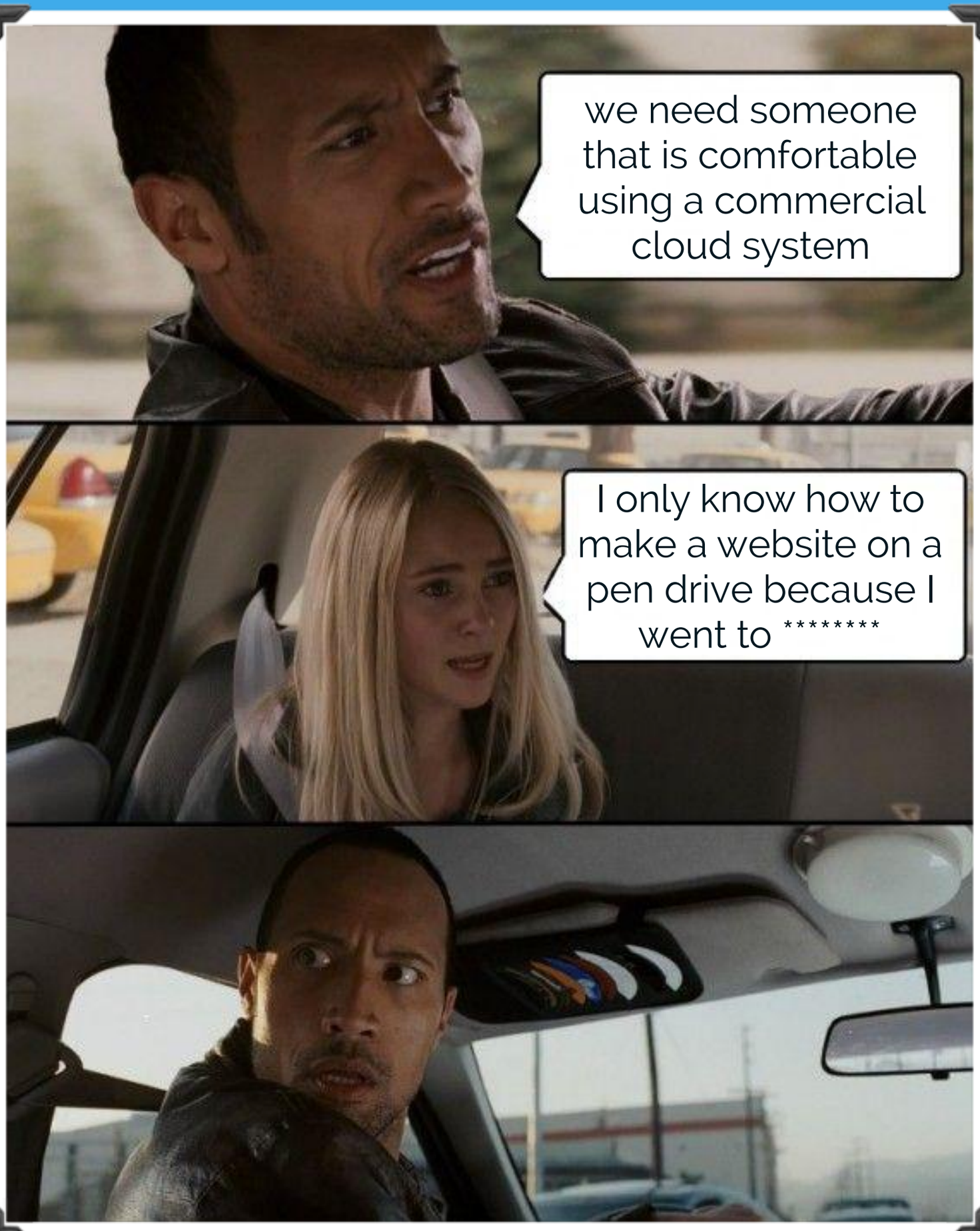

Microsoft
Azure


PS


Microsoft
Azure

Microsoft Azure

(Some of you will have used this before)



*other memes are available

[LETS GET STARTED]