



# Systems Development

CMP-4013A

Lecture 1 Introduction.

# Meet the teaching team.



Pam Mayhew



Dan Smith



Dave Cutting

# More of us...



Adam Ziolkowski



Ellie Leist



James Mapp



Stephen Jones

# Even more of us...



Nikolas Charalambous



Nessa Nguyen



Francesca Burns



Chris Powell



# Even more of us...



Matthew Wilson



Connie Hodges



Paul Erasmus

# Semester 1 - Mondays

- Lecture 9.00



- Lecture 11.00



- Seminar 12/13



- Lab session 14/16



Attendance!



# Module Aims

- Complexity and outcomes
- Development approaches
- Range of actors involved
- Generic development activities
- Modelling techniques
- Professional issues
- IS security risks
- Transferable skills practise



# Indicative weekly topics.

- Introduction, systems failures
- Development models and methodologies
- Systems development activities and roles
- Requirements and use cases
- Systems design, usability
- Privacy and security
- Development approaches, outsourcing
- Project management, testing and QA
- Professional, ethics and legal issues
- Process evaluation and improvement.





# Teaching method

- Lectures / guest speakers
  - Topic introduction
- Seminars
  - Discussion and practise
- Lab session
  - Application in group setting



# Assessment

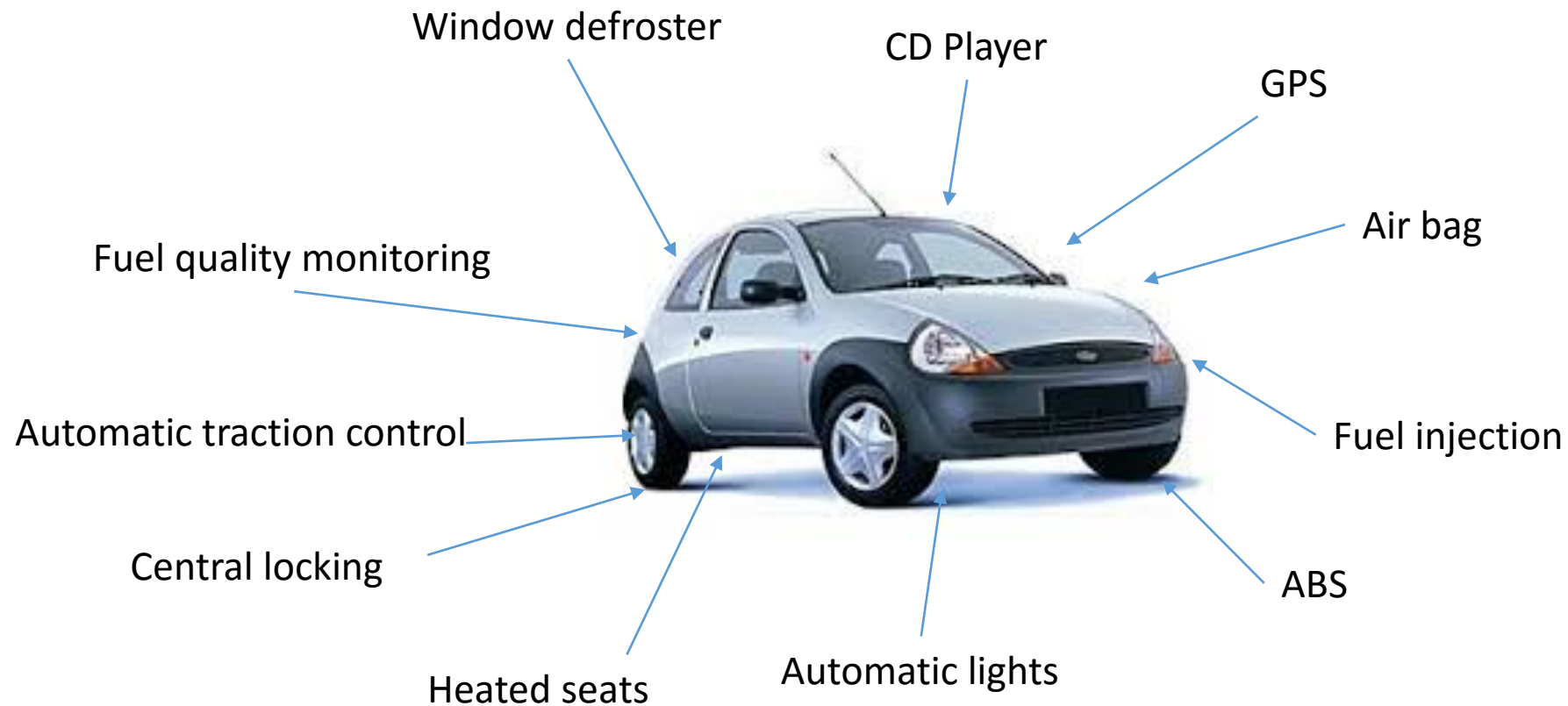
- Formative assessment:
  - Weekly feedback
  - Group progress Week 7
- Summative assessment:
  - Group report (40%) and presentation (10%) Week 12
  - Examination (50%) summer exam period.



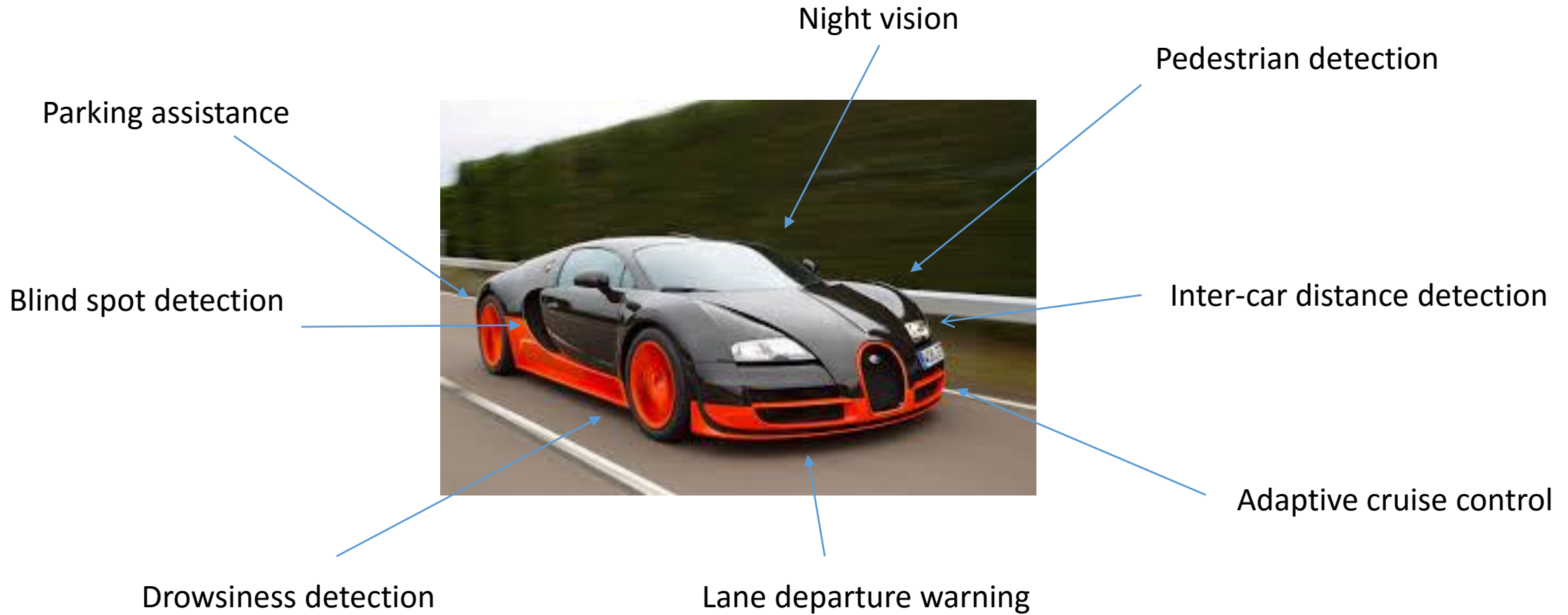
# Computing systems are everywhere



# Systems and subsystems.



# More sophisticated...





# Soup Maker?



Success?

# What does success look like?

Depends on many factors, for example:

- Does it work?
- Does it keep working?
- Is it efficient?
- Does it meet requirements?
- Is it of sufficient quality?
- Is it on time and on budget?
- Does it please its stakeholders?



# Make a successful cake?

- Making it for myself?



- Know what I want
- See the ingredients
- Experienced
- Familiar kit
- Aware of constraints

? Different ingredients

? Different cake

? New oven/tins

?? Power cut

?? Son falls down stairs

# More cakes?

- Making it for a friend's child?



- Wants a fun cake
- Know date of birthday
- Rough budget
- Buy the ingredients
- Some experience
- Some familiar kit
- Some experimentation

? Can't find blue icing  
? Shaped tins stick  
? New icing techniques  
? More time and money

?? Break an arm

!! Terrified of dinosaurs

# More cakes...

- Making it for a relative's party



- Chocolate/vanilla muffins
- Know date
- Rough budget
- Buy ingredients
- Experienced
- Familiar kit (not enough)

? Relative visits – argh!

? Rings back later – argh!

? Lots of waste

? Lots of frustration



# More cakes...

- Making it for a wedding



- Friend's clear diagram
- Fruit cake recipe
- Limited experience
- Hire tins
- Buy ingredients
- Know dates/budget

- ? Fruit cakes are different
- ? Drying time
- ? Icing is difficult!
- ? Have to rush it
- ? They don't want it!
- ? Buy replacement at vast expense

# More cakes...

- Outsource it?



- Experts
- See the options
- Know what's possible
- Price agreed
- Delivery date agreed
- Confidence
- Get on with other stuff

? Clear agreement  
? Decorations unavailable  
? Change your mind

?? Reputable provider  
?? Delivery van crashes  
?? Groom doesn't turn up

# Successful projects

- User involvement
- Top management support
- Clear requirements
- Proper planning
- Realistic expectations

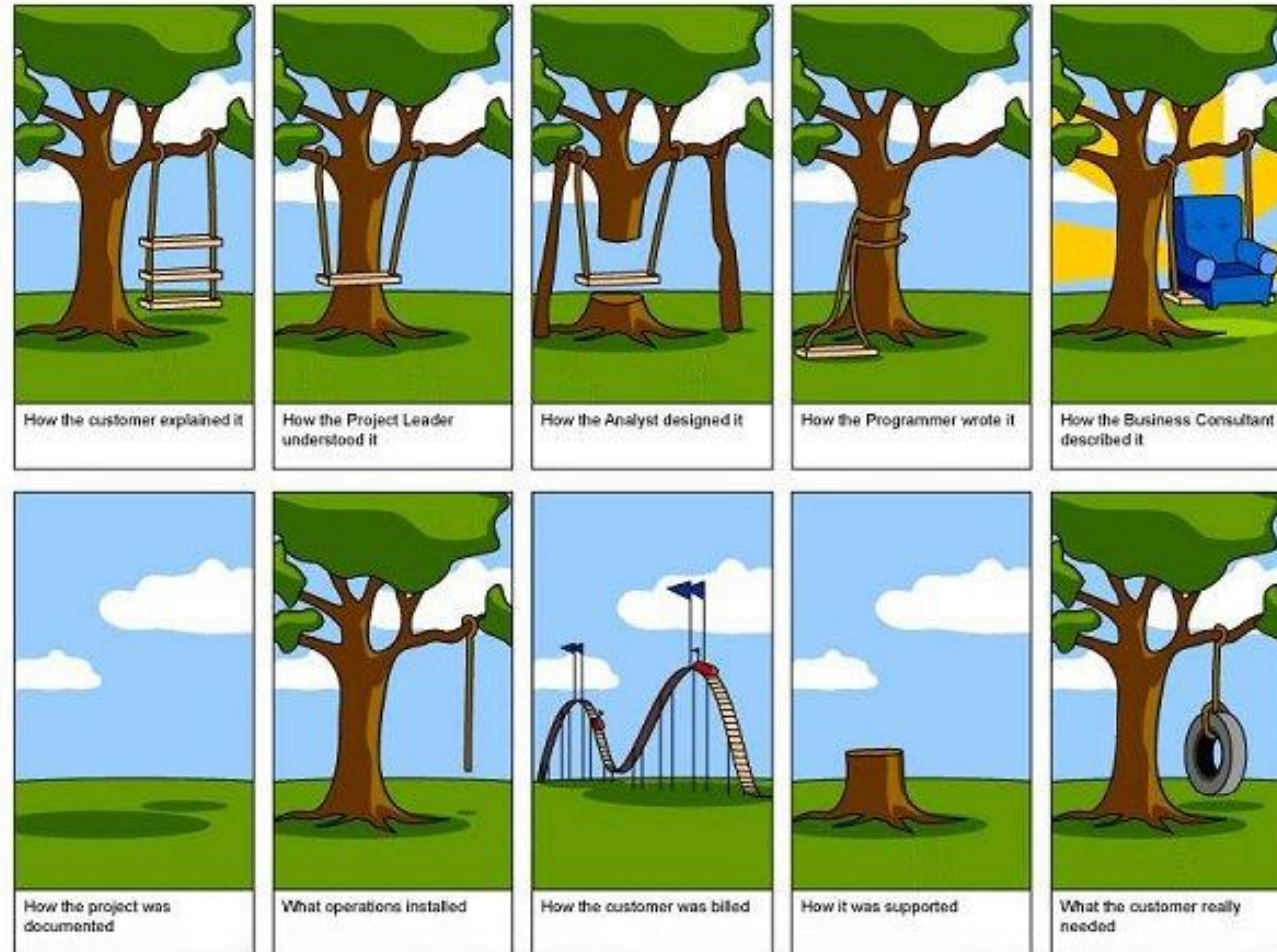


# Failed projects

- Unclear requirements
- Lack of user involvement
- Unrealistic expectations
- Changing requirements
- Lack of executive support
- Inexperienced personnel
- Over ambitious budget and/or schedule
- Unfamiliar new technology
- Didn't want it anymore



# Unclear requirements





# The Standish Group – Chaos Reports

Year	Successful (%)	Challenged (%)	Failed (%)
1994	16	53	31
1996	27	33	40
1998	26	46	28
2000	28	49	23
2004	29	53	18
2006	35	46	19
2009	32	44	24

# Standish Group Definitions

- Successful – delivered, fully functional, on time, on budget
- Challenged – delivered but does not meet all the above criteria
- Failed – did not deliver anything

Lots of criticism of the Chaos Reports



# London Olympics 2012 - Challenged?



2005 Bidding £2bn  
2007 Budget £9.29bn  
2012 Actual £8.77bn

# The Standish Group – Chaos Reports

	2011	2012	2013	2014	2015
SUCCESSFUL	29%	27%	31%	28%	29%
CHALLENGED	49%	56%	50%	55%	52%
FAILED	22%	17%	19%	17%	19%

# Summary

- Introduction to the SD module
- Computing systems are everywhere
- Complexity
- Failure is obvious
- Success is harder to determine
- Lots of projects still fail



A hand-drawn scroll with a textured, slightly irregular border. The scroll is unrolled, showing a central rectangular area with text. The ends of the scroll are rolled up, showing the inner layers. The text is written in a bold, italicized, sans-serif font.

***Andy Gatford***

***IBM Design Manager***

***11.00 today in LT2***