# Enterprise Computing:
# Software Development

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# Smashed it!

- I have had a quick look at the submissions for the hackathon.
- Every submission for the hackathon contains wonderful work.
- You should be thoroughly proud of yourselves.

# Why did we have a hackathon?

- Software development work would be much, much easier than it is if it were not for the ever-present need to complete your work *to a tight deadline* (such as a release date).
- Never in human history has a client said *"No rush. Take as much time as you need."* It's always *"I need this yesterday."*
- There is a financial imperative as well. *Time-to-market* is a significant factor in a successful product. It's good if you get your app to market first. Six months late? You're toast.
- For these reasons, we did our hackathon in 45 minutes, rather than 45 hours. It was a *sprint*, rather than a *marathon*.
  - The 45 minutes kind: *"I found it slightly daunting, but it was ultimately enjoyable and useful."* — Lucy, Team Transporter.
  - The 45 hours kind: *"This is boring. I'm cold. When is the pizza guy going to get here?"* — Random sad developer.

# Why did you play that video?

- In a perfect world, you would be able to do all of your work in *optimal working conditions*, with perfectly-controlled light, comfort, heat, and sound.
- Regrettably, it seems that this is not a perfect world.
- Sometimes, while you are concentrating, and you are trying to get something done to a very tight deadline, your working conditions will be very sub-optimal, with noise, or some other discomfort, breaking your concentration. (*"Dude, what the Hell? You have to start drilling now?"*)
- The programmer and author Joel Spolsky, the author of *Joel on Software* (http://www.joelonsoftware.com/), recommends a quiet working environment, supportive of thoughtful, careful, creative thought. Hence, *Library mode.*

# Why did you play *that* video?

- The video features a team of five talented young people who are smiling, and confident, and having fun.
- It looks very much like they are friends who are supporting each other and making sure that they all succeed together.
- They have a meeting with a more senior group and talk to them confidently while seated around a table.
- They compete against another team of five talented people.
- A fat older man with a beard conducts an examination.
- Although one team wins, the losing team is still smiling at the end, and they have a playful comic punch-up.
- Plus, it's an awesome rock song with terrific, positive lyrics such as *"When we was young, oh man, did we have fun!"*
- `https://www.youtube.com/watch?v=knU9gRUWCno`

## Our next hackathon

- We are going to have a second hackathon, in the second part of the course, after Innovative Learning Week.
- It is very rare indeed, when playing a game, to play your absolutely best ever game the very first time you play it.
- The second time that you play a game you are at least more familiar with the rules, and more aware what to look out for.
- Plus, it looks better on your CV if you write *"While at the University of Edinburgh I participated in <u>two</u> lightning hackathons."*
- The second hackathon will be very similar to the first, producing a responsive design website from text and photographs as before, but it will also involve music files.
- You should reflect on what you would do differently next time.

# The problem of incomplete information

- In enterprise computing, when developing software for other people, most of whom have little or no technical knowledge about computing, you will always face the problem of *incomplete information*. You should be aware of it.

- The client has an enormous amount of *domain knowledge* in their head about their enterprise (building, medicine, charitable work, classical music, . . . ).

- You don't share it any more than they share yours.

- You often have to *infer* what the client wants. They will rarely explicitly state it fully. Things like non-functional requirements emerge over time, and some things go unsaid.

- You might say *"Oh no, how unfair!"* and *"Why don't people just say clearly exactly their priorities and what they want?"*

- Hello. Have you met humans?

## Three common reasonable priorities

**1** Most clients want the work which they have requested *delivered on time*. That's reasonable: people don't like waiting for things.

**2** Most clients want their email and face-to-face interactions with you to be *pleasant and polite*. That's reasonable: people don't value rudeness. Short emails come across as rude.

**3** Most clients want you to *make technical decisions on their behalf*. That's reasonable: they're not technically proficient enough to prioritise in a meaningful way.

- Hopefully, these do not come as a shocking surprise.
- But what would these three common, reasonable priorities mean in practice, in the context of our hackathon?

# 1. Delivering the work on time

- In the context of our hackathon, *on time* means 09:50.
- We were working in *lightning time* at the timescale of minutes so, technically, 09:51 is late.
- There were some subtle indications that time was important in the context of the hackathon. Did you pick up on any of them?

## Pro tip about deadlines

- It can be useful to subtract a small amount from the deadline for any project.
- If you plan to finish early and you encounter delays you can still finish on-time.
- If you plan to finish on-time and you encounter delays you will likely finish late.
- You always encounter delays.

## 2. Pleasant and polite interactions

- Unfortunately, when you are working under severe time pressure, as you were, it is tempting to cut back on the pleasantries.
- When people say "email me that" it is nice to add a few words in the email, to give the context.
- It's good to get into the habit of being polite via email, so that you still remember to do it when you are very short of time.
- You will be very short of time.

### Some people are already very good at this

"We thought this was a great idea!" — Rikki, Team Chekov

## And the winner is . . .

- Only one team delivered their website on time, and added some nice words of context around the message.

# Winning with style

## Email received at 09:50

Dear Prof. Gilmore,

I have attached the Team Phaser hackathon website.

Kind Regards,
Mantas.

- Congratulations, Team Phaser! You have earned the title of *Enterprise Computing Best Lightning Hack Team.* Please call on me for a reference any time, if it is any value to you.
- No-one lost the hackathon, but you won it harder than everyone else.

## 3. Making technical decisions on behalf of the client

- Often the client will give you content, such as a photograph, and say *"Put this on the website."*

- You look at it and think *"There's no way this pixelated piece of junk is going on the website!"*

- I recommend that you stall until the client forgets about it.

- There is no requirement to use all of the content that you are given: use your technical knowledge, aesthetic skill and judgement to try to decide which content to use, and how, and where.

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**Some people are already very good at this**

"The only nice bit of this picture is *this bit*." — Ayrton, Team Sulu

# Pleas for our next hackathon

- Some teams continued to work on the website for quite a long time after the deadline. Thank you for doing this.
  - I understand why you did it, and no work is ever wasted, but please next time just take your hands off the keyboard after 45 minutes is up.
- Some teams weren't represented fully. Please encourage your teammates to attend the next hackathon. *Big up the first one.*
  - We had 44 people at the first hackathon. Let's see how near we can get to 64 people participating in the next hackathon.
- Smash it even harder next time. You've got it in you.

# Innovative Learning Week

- Yet again, my Innovative Learning Week course proposal *Practical algorithms for making soup*, has been turned down as being "too innovative." Apparently, you must just be "slightly innovative."

- Nonetheless, I am not discouraged, and I have suggestions for other activities for you to do in Innovative Learning Week. I would like you to complete a *team bonding* exercise.

- At present, because they are the only team to have completed *any* team bonding exercise at all, Team Sulu are going to take *Best Team* by default.

- They may actually be the best team, but team pride means that you should make them prove it, rather than just hand it to them. Plus, it won't be a real victory for them if you don't challenge them.

## Insurance policy

Perhaps you are worried that you will get in trouble if you do
something a bit naughty like eat a takeaway pizza in an illicit
location in the university's estate. If so, this is your insurance
policy (below).

### This is what you say

*"Our professor made us do this! He's always asking us to do
bizarre things that are nothing to do with computing. He's clearly
going through some sort of mid-life crisis."*

# An *innovative* team bonding exercise (1/2)

- Sometimes, in order to promote a software product, you may need to create a short promotional video to advertise your product.
- You might think that in such a circumstance your organisation would hire a professional video company to create the video but such work is expensive.
- Few organisations have a lot of money that they don't know what to do with. (Charities don't, hospitals don't, start-ups don't, SMEs don't, . . . )
- It can be useful to know how to download existing video content, film video content, edit content, add a music soundtrack, and upload the result to YouTube.
- It's good to have a *second instrument* that you can play.

# An *innovative* team bonding exercise (2/2)

- If you complete this task, I will accept it as an *innovative* team bonding exercise.

- It is *innovative* in the sense that it is a team bonding exercise which could actually be completed by only a single member of the team. However, it does help the whole team.

- Your team will then be eligible to win *Best Team* (subject to scoring highest in the assessed Part 2 of the coursework).

- I will play your YouTube video in the first lecture after Innovative Learning Week.

- Furthermore, I will *fist-bump* you in the lecture theatre while your video plays, in order to celebrate your artistry and innovation. *Remember to explode it.*

# Specification of the video footage

- Your video should contain clip content from the classic original 1960s *Star Trek* television series. You should not include any *Star Trek* content from more recent movies.

- The video clips should be appropriate to *your team name*, featuring that Star Trek icon prominently.

- The video clips should be intercut with original video of the university's Central Area, the Appleton Tower, and the Informatics Forum. Phone camera footage is fine.

- Optionally, you may, if you wish to, include footage of your team members smiling and looking happy and confident. (Like *The Strokes*.)

## Specification of the soundtrack

- Your video soundtrack should contain no spoken words.
- We should not be able to hear you talking, or hear the folks from *Star Trek* talking.
- Your video soundtrack should be, in its entirety, the incredible song *Get it on my mind* by the musical genius DJ Zebra.
- This song has been created by taking the songs *Let's get it on* by Marvin Gaye and *Where is my mind?* by the Pixies, and putting them through the audio equivalent of a stick blender for soup.
- It's unbelievable. That's your soundtrack.

# Twin-team team bonding

- This team bonding exercise is for pairs of teams, as long as each team contains at least one female team member, and neither team has already completed a team bonding exercise.
- In this exercise you are to simulate *a pleasant interaction with people whom you do not know very well.*
- This is an important transferrable social skill which you will need to call on in a number of professional contexts.
- A typical scenario: you work for a start-up and have a lunch appointment with a big potential customer to meet the CEO.
- Unexpectedly, the CEO is late. (The CEO is always late.)
- You can't start the meeting without the CEO so you need to fill the time with light, pleasant conversation.
- Trust me, you aren't naturally good at this. You need practice.

# The rules of conversation

- You are to engage in pleasant light conversation about nothing in particular. Try to keep the conversation flowing naturally throughout lunch.
- Don't monopolise the conversation, but don't sit mute either.
- You are not to approach subjects such as religion or politics.
- Try to say things which might make other people smile, but not laugh uproariously. You are not going to make people at other tables complain about you.
- You must not say anything that could be interpreted as flirtatious. This is not a date.
- Don't say anything that could be interpreted as offensive.
- Listen to what other people are saying and look at them when they are speaking.

# The rules of behaviour

- Choose your words and conduct yourself as though your mother and father were standing behind your chair.
- Be pleasant, courteous, and kind. Listen supportively. Smile.
- Sit up straight in your chair and eat your lunch with your feet on the floor and your knees under your plate.
- Wait until everyone has received their food before starting eating.
- Put your napkin on your lap and eat using your cutlery, not your hands.
- Close your mouth when you chew.

# The venue



- You are to enjoy your lunch at Nawroz, a local independent restaurant located at 30 Potterrow, across the street from the Informatics Forum.
- There isn't much need to book. They are usually not full and will be glad to receive a walk-in party of eight or ten.
- They serve delicious food. A two-course lunch is £7.

# The rules of food and drink

- Order whatever you want from the menu, according to taste.
- I highly recommend the lentil soup, but then I would.
- You will not drink any alcohol at all. (You're not *actually* The Strokes.)
- You will not drink any soft drinks, only water.

# The photographic evidence

- When the main course arrives, ask the waiter to take a photograph of you before you start to eat.
- Say *"Would you mind taking a photograph? It's my birthday."*
- Email me a photograph of ten (or eight) happy young people just about to eat a delicious meal.
- On receipt of this, both teams depicted will be judged to have completed a team bonding exercise and will then be eligible to win best team.

# The rules of payment

- At the end of the meal, the men split the bill roughly equally.
- Women do not pay. They don't even offer to pay.
- This is done as a token apology for failing to achieve equal pay for women despite passing laws which were intended to ensure this.

## Photographs from the hackathon

- Photographs from the hackathon are available on the web at
    - `http://www.inf.ed.ac.uk/teaching/courses/`
      `ec/hack/      /photos/`

  where the redacted part is the obvious string of three letters and two digits.

- Look through these to find the best photograph of yourself.

- Email that photograph to your mother with the text *"We had a test in class on Monday and at the end the professor had us all line up for a photograph"*. (No email? Grab a print.)

- This sentence, and the photograph, will please your mother because she will see that you finished a test with a big smile on your face, and that you are in a good place, surrounded by good people. (It's not complicated: your mother loves you.)

- See you on the other side of Innovative Learning Week.