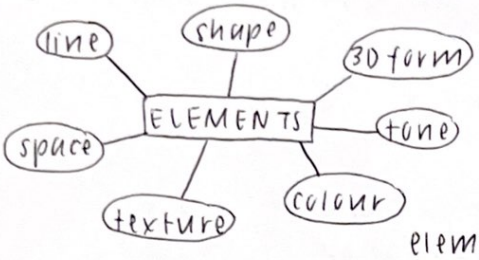
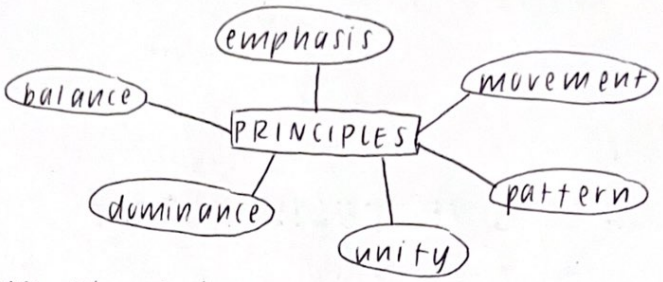
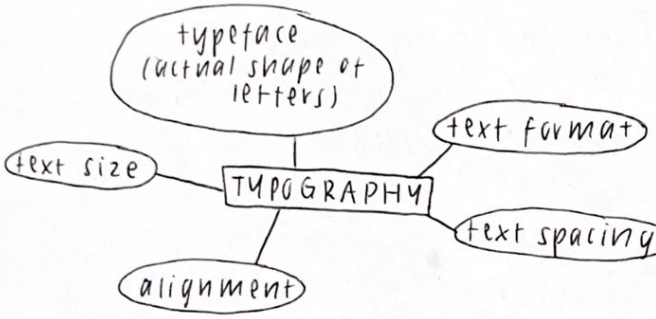
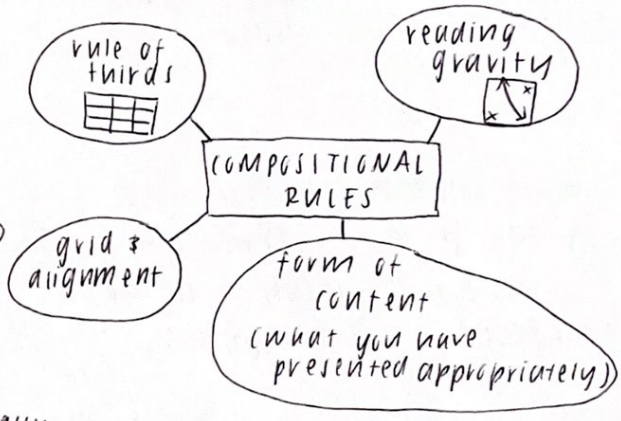
DESIGN CONCEPTS (TI WK 1)





elements construct principles





features of a UI
- organisation of content — arrange logically
- GUI — menus, mouse/touch control, scrollbars, windows

help features of a GUI
- tooltips
- rollover icon changes
- help menuing systems
- virtual tutorials

USABILITY
- effective, efficient, satisfying
- UX design
- do not disproportionately impact disabilities
- difficulty in using UI

ACCESSIBILITY
- available to disability
- visual/hearing impaired

INCLUSIVITY
- available to multiple disparate groups
- abilities, cultures, economic situations, locations
- response to digital divide

HARDWARE (TI WKs 3-4)

CPU, primary memory, secondary memory

design specs —should match→ it's task
- too much = wasted resources
- too little = ↓ efficiency

video editing - large files = ↑RAM & storage (memory)
3D rendering - calculations = ↑CPU & RAM

---

calculations - ↑processor (computation power)
big files - ↑primary memory
storage - ↑secondary memory

development trends — screen resolution
- CPU power
- device size
- memory (p + s)

no need for ↑ CPU on mobile (using mostly primary memory)

IMPACTS OF TECHNOLOGY (TI WK 4)

IP = property of mind
- new idea you create
- any original idea in any form

IP legislation - protect originator from exploitation

legal protections related:
- copyright
- trademarks
- patents

online defamation = false info spread to harm reputation
↳ hard to find culprit in the online world (anonymous)

← in AUS not specifically legislated
↳ civil court
- if info is found to be false then $$ can be paid

FOI = access info held in gov. docs
- about yourself
- government policies
- programs
- decision making processes

swap titles

VIRTUAL COLLABORATION

advantages:
- reliable
- ✕ misunderstanding

disadvantages:
- $$$ (travel)
- impact other aspects of work

PHYSICAL COLLABORATION

advantages:
- cheap
- ✕ travel needed
- workflow remains

disadvantages:
- affected by network connection
- cultural differences = misunderstanding (insufficient info)
- need ICT infrastructure

convergence = multiple abilities in one product

impacts:
- $ ↑ (more features in 1)
- complexity ↑
- internet is needed

PROJECT MANAGEMENT (TI WK 5)

PROTOTYPE

- semi-functional sample
- common in: research / development workshops

advantages:
- ✕ constraints by time, $$
- out of the box thinking
- created quickly for client
- more efficient use of human resources
- workers = more engaged & excited by work

disadvantages:
- costly in $ & resources
- frustrated after seeing virtually complete (client)
- too much energy focused on a component
- lose track of original intent

STRUCTURED

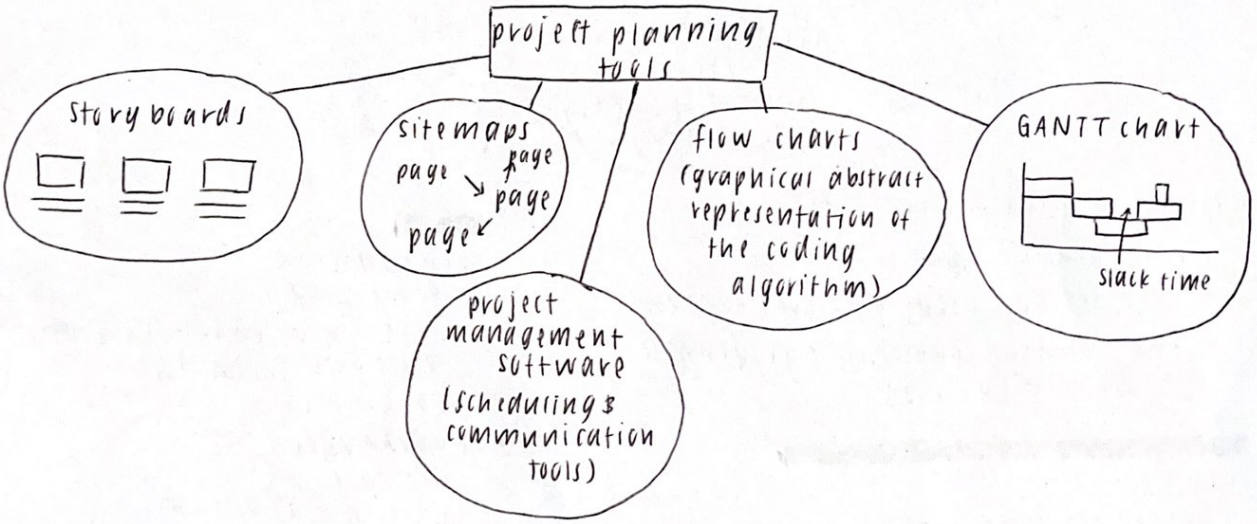
- highly ordered / organised

steps:
1. investigation / conceptualisation
2. specification
3. design
4. construction
5. evaluation / review

- common to: conservative design companies
- evaluate product after design phase (go back to investigation)
- ensures clients pay for services rendered
- managers get a ↑ level of control
- construction timeframes identifiable

R&D companies

- avoid structured because
  - ↳ less responsive in rapidly changing environments
  - ↳ don't utilise ideas of all the team
  - ↳ controlling by managers = bad



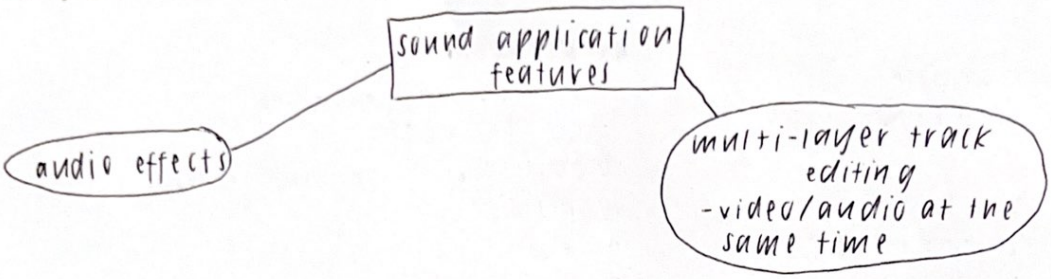
structure = very important
- ↳ site / network map is often used
- intuitive flow of info (efficient)

also consider usability, accessibility

UI = items user interacts with
- ↳ menus, buttons, display screens

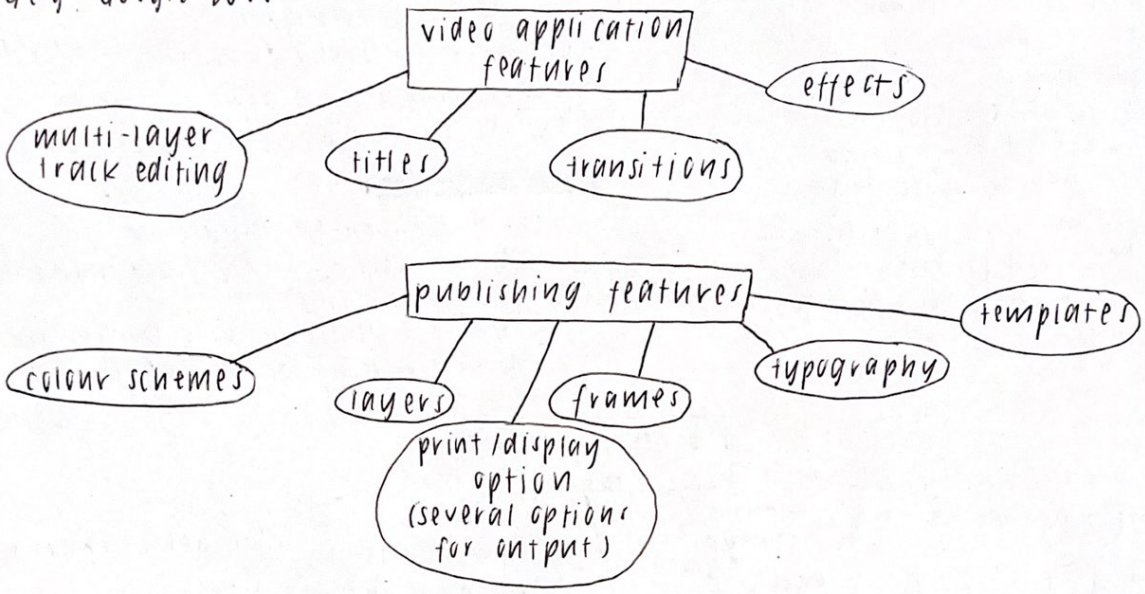
UX = user experience
- = overall experience of a user
- takes into account UI, structure & elements / principles
- "friendly" "aggressive" ← abstract terms
- made up of a range of considerations

APPLICATION SKILLS (TI WK 6)



APPLICATION SKILLS (TI WK's 7-8)

online software tools = "web apps"
e.g: Google DOCS



types of digital publications:
- PDF (branded by Adobe)
- software app used to deliver content
- ePub (used by publishing programs for mobile devices)

PDF (portable document format)
advantages:
- opened by most computers
- control over layout & fonts
- made by different softwares
- free to read (Adobe reader)
- easy to email/upload to websites

disadvantages:
- sometimes don't display right (small screens)
- not free to edit
- not easy to edit

ePub
advantages:
- one zipped file
- easy layout on small screens
- very user friendly
- large market

disadvantages
- not easy
- publishing is difficult

INDD (indesign document)
advantages:
- easy to export to multiple formats
- modify image sizes in InDesign

disadvantages:
- expensive
- difficult to learn

MANAGING DATA (T2 WK1)

usergenerated content = users provide info for webpages

advantages:
- more info available
- reviews
- get public involved
- keeps up-to-date
- free content

disadvantages:
- negative feedback
- obscene or rude
- flaming

WEB 1.0
- need backend web designer to go into the backend & change the site

WEB 2.0
- framework sites like wix
- users fill w/ own content

HTML
hypertext markup language
- uses tags < > — <a> = links, <img> = image

CSS
- style & layout

W3C
- worldwide web consortium
  - implements standards companies abide by w/ devices / resources

purpose:
- set web standards
- web standards
- desktop, mobile devices, cars etc. (standards for)
- promote clear understandings of these features:
  - HTML
  - CSS
  - images, video, audio.
  - web apps, web scripting
  - privacy & security guidelines

(standards for)

different audiences have different needs & expectations

internationalization:
- access to the web for all

mobile web:
- "one web" available on many devices
- help authors create content for all devices, contexts & locations

VALIDATION TECHNIQUES
- ensure user input = clean, correct & useful
  - all required fields?
  - valid date?
  - text in numeric field?
- input masks (xx/xx/xxxx)
- data types (age field = only numeric)
- validation lists (compare to a list of valid inputs)

VERIFIABILITY
- accurate, current, reasonable
- consistent w/ other sources

ACCURACY
- ensures errors aren't made
  - cross checking
  - sources are valid in the info
  - being aware of bias

CURRENCY
- data = time critical & the time hasn't expired to indicate a change

MANAGING DATA (T2 WKS 10-11)

SECURITY TECHNIQUES FOR THE MANAGEMENT OF DATA

DISASTER RECOVERY PLAN
- plan on how to protect & recover from catastrophic ICT failures
- identify preventative measures
- undertaken regularly
  - ↳ backup
  - ↳ restore
  - ↳ security
  - ↳ preventing malicious activity
  - ↳ recovering from malicious activity

AUDIT TRAIL
- verifies that all preventative actions have occurred to manage disaster recovery
- technicians sign + date actions

TYPES OF BACKUP TECHNIQUES AND ARCHIVING OF DATA

FULL
- backs up everything that is stored in selected directories at one time

DIFFERENTIAL
- backs up only the files that have been changed since the last full backup
- saves significant disk space
- most common type

DAILY
- usually automated

INCREMENTAL
- backs up a portion of the selected files at a time

- businesses will choose a cycle for each backup
  - ↳ monthly full backups
  - ↳ differential backup every Monday
  - ↳ incremental backup daily

ONLINE DATA STORAGE METHODS

DATA WAREHOUSES
- large collection of data from a wide range of sources within a company
- used to drive company decisions
- contains everything the company knows about each customer
  - ↳ helps to improve customer service

DATA MARTS
- contains data specific to a certain department within the company
- used to make business decisions for that department (not the whole company)

DATA IN THE CLOUD
- most databases in the cloud

advantages
- access from everywhere
- cost savings
- multi-user capability

disadvantages
- data security
- need for fast internet

DATA MINING
- used to extract useful info from large, multivariate data sets
- to determine patterns in a set of data
  - ↳ used to learn new things about the subjects of the data
- used when patterns are unknown, if the data is being processed to test or prove a hypothesis = data analysis

PROCESSING OF DATA CONSIDERING SECURITY OF DATA THROUGH THE USE OF:

PASSWORDS
- without strong passwords, it is easy for unauthorised users to gain access to data and systems that they aren't permitted to use

BIOMETRICS
- using human features to replace passwords
- reduces the ability to share use of that system

ANTI-VIRUS SOFTWARE
- processes all the files on a system
- compares to 'virus signatures'

DIGITAL CERTIFICATES
- encoded data strings, verified by a certifying agency
- most commonly used to verify that a doc or app is genuine
- common for apps (mobile)
  - prove the Appstore has verified

FIREWALLS
- software that limits access from the outside network to a computer or a subnetwork
- work by either:
  - blocking ports (networking/TCP/IP)
  - packet inspection
- firewall will only pass data through if it meets specified rules set up by system administrators
- can refuse entry from specific locations, information etc.

DIGITAL SIGNATURES
- an encrypted file that is intended to be used by one person, department or entity
- contain an encoded data string that is verified
- designed to be only generated by the certified owner ∴ seen as a way of proving identity

ENCRYPTION
- security via cryptography
- reversible method

e.g. caesar cipher (very weak)

CONCEPT OF WEB 2.0 + WEB 3.0

WEB 2.0
- user generated content
  - e.g. YouTube

WEB 3.0
- use of massively connected data on the internet to solve bigger, more complex & abstract problems
- rooted in AI & fuzzy logic
- draw info. from disparate sources to undertake complex, abstract tasks in real time
  - e.g. Google Maps

PURPOSE AND FEATURES OF CONTENT MANAGEMENT SYSTEMS (CMS)

- online system used to create, process & publish content for a user who isn't necessarily skilful enough to do the task independently
- a product of web 2.0 tech
  - used to make websites

examples of CMS:
- wordpress
- PHPBB
- Joomla
- Shopify

NETWORKS (T3 WKS 1-4)

communication protocol:
- established set of rules that determine how data is transmitted between devices in the same network

TYPES + CHARACTERISTICS OF COMMUNICATION PROTOCOLS

HTTP
- hypertext transfer protocol
- protocol used to transmit website data across the internet
- shift data from the server to the client

HTTPS
- hypertext transfer protocol over secure socket layer
- extension of HTTP protocol
- adds a layer of encryption ∴ not recoverable in transit

TRANSMISSION CONTROL PROTOCOL/ INTERNET PROTOCOL (TCP/IP)
- controls transmission of data across networks (e.g. the internet)
- consists of many protocols

WAP
- wireless application protocol
- standard for accessing information over a mobile wireless network
- WAP browser: web brower for mobile devices that use the protocol
- outdated

TYPES + CHARACTERISTICS OF COMMUNICATION STANDARDS

802.3 (ETHERNET)
- contains specifications for optic fibre, coaxial cable and other physical media
- relates to physical media used to transmit messages

802.11X (WIRELESS)
- describes wireless networked communication
- wifi
- X = multiple versions (e.g. A, B, G, N, AC, AX)
- ↑ bandwidth, ↓ reliability or range

TYPES OF NETWORK SECURITY SYSTEMS

PHYSICAL SECURITY
- restricting access to hardware

FIREWALLS
- limits access from the outside network to a computer or a subnetwork
- work by blocking ports or packet inspection
- can refuse data from specific locations etc.

PASSWORDS
- not short, numbers needed etc.

NETWORK COMPONENTS (LAST YEAR CONTENT)

MODEM
- connects a single computer to a network

ROUTER
- connects several devices together
- routing table
= shows most efficient pathway of routing

NIC
- allows a computer to physically connect to a network

SERVER
- provide networked services
- perform a task for multiple devices
- significant primary & secondary memory

IMPACTS OF TECHNOLOGY (T3 WKs 5-6)

PURPOSE OF A CODE OF CONDUCT
- define acceptable standards of behaviour for employees

ELEMENTS OF A CODE OF CONDUCT

WORK HOURS
- code of conduct will add further details when employee hours are flexible

EMPLOYEE PRIVACY
- an employer can mandate the right to publish the employee's name on the company website
- equal opportunity act protects your right to keep info private
- defines responsibility to protect other's privacy

EMPLOYEE EMAIL USE
- very common in code of conduct
- usually restrictions on the use of company email services for:
  - ↳ personal use
  - ↳ offensive content
  - ↳ non-business related purposes

EMPLOYEE INTERNET USE
- common to add
- ensures the $ spent on internet is used correctly
- restricts:
  - ↳ online shopping
  - ↳ social media
  - ↳ offensive actions
  - ↳ accessing objectionable content
  - ↳ taking actions to bring disrepute

MONITORING OF WORK EMAILS, INTERNET ACCESS & COMPUTER USE
- clarifies an employee's right to monitor internet & email usage
- the employer "owns" the bandwidth

ONLINE CENSORSHIP OF INFO IN A GLOBAL CONTEXT
- access to offensive content is a problem
  - ↳ torrents / pirated software

ISSUES W/ THE USE OF CLOUD COMPUTING

CONFIDENTIALITY OF DATA/SENSITIVITY OF DOCS
- service could have access to your data without your knowledge / permission

LEVEL OF ACCESSIBILITY
- need fast + reliable internet connection
- lose access = cannot access to data in cloud

AVAILABILITY OF ONLINE APPLICATIONS
- data is available 24/7/365
- accessed from an internet browser anywhere, anytime

IMPACTS OF DIGITAL TECH + GLOBAL MARKETS

PRODUCTIVITY
- more work can be done now vs with traditional methods
- access to labour resources far more cheaply now

ACCESS TO KNOWLEDGE OR RESOURCES
- easy & cheap access to knowledge, skills unheard of 10 years ago
- china produces hardware easier & cheaper

impacts on receiving company:
- more work - more money
- specialisation - unique resources

OUTSOURCING
- use employers outside of the company
- need experience that isn't present in the company

impacts on issuing company:
- reduces costs
- unique skills gained
- short term
- can introduce confusion
- info security access

APPLICATION SKILLS + PROJECT MANAGEMENT (T3 WKs 7-8)

SERVICE LEVEL AGREEMENTS

- contract between service provider & client
- protect service providers by ensuring they don't provide unexpected / unreasonable services
- protect clients by ensuring they don't pay more than they need to for services that don't apply to them

FEATURES OF SLA's

AVAILABILITY OF SERVICES
- the amount of time that a service can be accessed

TYPES OF SERVICES
- direct telephone support
- online helpdesk
- physical maintenance etc.