**Question 1: Functional and Non Functional Requirements**

**Functional Requirements**

* **Visual** - The system shall allow Adjusting of the brightness/contrast of the screen. May be required in areas of direct sunlight, or where it is dark.
* **Audio** - The system should read on screen text for users with reading difficulties using the tablets OS Tools.
* **Language** – The system shall support multiple languages and allow for languages to be changed.
* **Navigation** – The navigation should be hierarchical to ensure users can navigate through the system by going forward and backwards.
* **Buttons** – The system shall return to the home screen of the application if the home key is pressed.
* **Social Network** – Users shall be able to click on content a friend has posted to their wall and select “Viewed” to add this content to their consumption list.
* **3 Clicks to get to any content** – Main Menu – Sub Menu - Content

**Non Functional Requirements**

* **Audio** - shall be enabled by default and store the setting during the initial launch of the pap.
* **Visual** – The screen should be set to a minimum brightness value of 50% whenever the application loads for the first time and save the brightness value set during the initial launch.
* **Social Network** – Authorisation will be required for the application to access friends basic personal information to determine what content they have viewed.
* **Internet Connectin** – If a internet connetion is not present then use the last downloaded version of content and display a message prompt to the user.

**1. Response times - refresh**

### 2. Processing times – spinning icon

### 3. Query and Reporting times – time to query database

### 4. Throughput – Information being processed

### 5. Storage – Space needed

### Question 1 (b)

### Simple menu interface – Fittz Law

### Adding a show

### Watching TV - > Start App -> Select Add Show - > Add Name of Show - > Select Show -> Select Episode - > Updates - > Post to Social Network

### Searching for a show via TV Guide

### Using App - > Select Search - > Select Search by whats on - > Search by Genre - > Select Show - > tune into Show and adds to activity / Live discussion with others.

### Link to Friends Activity

### Using social networking - > View friends activity as watching a show/ Select watch also - > Adds content and live discussion to app - > Tune into show

### Question 1 ( C )

**Target Users**

**Cognitive Issues**: Memory, Visual, and Auditory abilities, attention capacity

**Population issues**: decision making capabilities, language comprehension disabilities

**Technology issues:** computer graphics capabilities, connection speed, compatibility of systems

**Economic / logistic realities**: What is the cost of the use of the system. Benefits outweight costs.

Geographical

Demographical/socioeconomic

Psychographic – attirutes values, lifestyles

behavioral

Target audience will consist of everyone within the geographical area of the UK. However audiences with memory or attention capacity impairments are not expected to use this application as after the initial set up and tutorial the set up will simply allow users to use the application however this could be changed to better focus on needs of other individuals.

Visual and auditory impairments.

Disability Discrimination Act 1992 – ensuring they have the same rights to access information

Making use of features of the tablet such as screen readers, high contrast settings, font sizes, etc

**Question 2**

**Identify issues** with user experience

Look at Existing applications - Identify users, tasks, environments

Determine who will be using the application as this could influence what drives it forwards

**Evaluate** user experience

Evaluate current user experience

Evaluate to determine how best to go forwards with the design

**Specify** Requirements

User Requirements to drive design

Produce a set of requirements that need to be met with the prototype to improve the user experience

**Prototype**

Design **satisfies** requirements

Produce design solutions and prototype

Design and prototype the solutions

**Evaluate Again**

Evaluate user experience to check if it satisfies requirements by using user cantered evaluations

User centered evaluations – User Testing to check if design is correct

Modify design to take this into account

Modify design if required

**Question 2 ( B)**

Evalaluation plan

Usability and accessibility

Methods

Scheduling of each method

Rationale

Heuristics – Walk through an interface to find potential problems.

Questionaire – large data set – dispersered

Interviews – possibly a small group of individuals to gain more rich precise data

Observation – Natural- Potentially rich and judgement to intervene when something interest happens.

Usability Evaulation- Formal observation – Time taken, mistakes, etc

**Heuristic evaluation**

·         **‘Rules of thumb’** of a ‘good’ interface

·         Heuristics to **walk through** an interface, noting potential problems

·         Multiple evaluators independently evaluate, then compare results

·         Needs appropriate heuristics - Android/iOS interface design docs

·         Results comparison and agreeing output may take time

**Multiple method use allows for triangulation of data**

**Questionnaires**

·         **Fixed** **questions** Set

·         **Widely distributed**; *some control over audience*

·         Fairly straightforward **Analysis**

·         Requires **careful design**

·         **Lacks flexibility** to gather explanations for answers

·         Could be **misunderstood** or unanswered

**Interviews**

·         Fixed or **semi-structured** set of **questions**

·         More **flexible** than questionnaires

·         **One-to-one -** Rich data - *intimidating for participant*

·         Requires **time and effort**

·         **Complex** data **analysis**

**Usability evaluation**

·         Formal **observation** of **users** carrying out **pre-defined tasks**

·         **Measurements** - *time taken, errors made, requests for help*.

·         **User opinion** after use (perhaps before as well)

·         **Controlled data** on areas of concern/interest

·         How realistic is user performance? (Hawthorne effect)

**Observation**

·         **Watching** people OR asking **people** to **record usage** ( diary, logbook)  OR **logging  use** ( *system logs, analytics*)

·         **Naturalistic** – *no control over participant*

·         Potentially **rich, realistic data** -  *Lots of data*

·         Judgement to intervene when something interesting happens

Rationale : Usability Evaluation may be subject to the Hawthorne effect – Pre defined tasks

Observation allows free roaming and unexpected results.

**Question 3 ( A)**

User Modelling

**Merits**

* No need to get humans to come do it
* Lower costs.

**Limitations**

* **Harder to model user diversity**
* **Human behaviour -** Really hard to model what a human will do

**Static user models**

Once the main data is gathered they are normally not changed again, they are static. Shifts in users' preferences are not registered and no learning algorithms are used to alter the model.

**Dynamic user models**

Dynamic user models allow a more up to date representation of users. The models can thus be updated and take the current needs and goals of the users into account.

**Stereotype based user models**

Stereotype based user models are based on [demographic statistics](http://en.wikipedia.org/wiki/Demographics). The application therefore can make assumptions about a user even though there might be no data about that specific area, because demographic studies have shown that other users in this stereotype have the same characteristics. Thus, stereotype based user models mainly rely on statistics and do not take into account that personal attributes might not match the stereotype. However, they allow predictions about a user even if there is rather little information about him or her.

**Highly adaptive user models**

Highly adaptive user models try to represent one particular user and therefore allow a very high adaptivity of the system. In contrast to stereotype based user models they do not rely on demographic statistics but aim to find a specific solution for each user. Although users can take great benefit from this high adaptivity, this kind of model needs to gather a lot of information first.

**Question 3 ( b)**

**The process of user centered technology design**

**Furthering of knowledge in the field of HCI**

**Question 3 ( a ) 2011**

**Ethnography – Study of a culture of people**

You must be reflexive – Take into account personal attributes about yourself such as do you influence the findings.

Focus Group – Free flowing conversation however it can be dominated by a single individual

Questinaries – large data but can not reach target audience, not be answered correctly, time consuming to set up

Survey – Time consuming, hard to get a wide geographic location

Prototyping – Requires other work to be completed first otherwise prototyping features could be simply unwanted.

Question 3 ( B)

Observation

Naturalistic inviroment, chance to jump in and ask questions if something interesting happenings

Usability Evaluation

Formal obersation

Focus Groups

Areas of agreement and disagreement between users and developers

Interviews

Interviewer can guide interviewee if needed. Contact between developer sand users.

Questin 3 (c )

Provides feedback upon the systems of what works and what doesn’t

Can identify areas of improvement and areas that may have been overlooked entirely

Helps determine if quirements have been met or if it needs to be reiterated.