MSc Practicum: Team Software Project
Purple Team
Final Presentation

Purpose of System

Problem: Contextualise news articles through tweets and youtube videos for a particular location.

<u>Core Technical Challenges:</u>

1. Finding a common way to extract news from the newspaper
2. Relevancy of youtube videos
3. Retrieval of tweets based on location
4. How to represent categories of articles
5. Conversion of languages to English
6. Choosing appropriate interface to select location

Who Cares?

Tourists: This application will give tourists a clear picture about the country that they are visiting (i.e. local affairs). Also provides weather forecast data

Research students: Platform acts as an alternative to traditional search methods for e-news e.g. Google search

SYSTEM DEMO

WWW.PURPLENEWS.EU

What does our system do?

Main function: Retrieves and displays contextual information associated with selected articles from a specific country.

More specific functions:

1. A sophisticated UI that will display contextual information in a user-friendly manner.

2. Retrieve weather information based on country location.

3. Retrieve trending tweets from twitter API based on hashtags derived from news article's heading/sub-heading/main-body.

4. Retrieve relevant youtube videos related to selected articles

5. Display additional information based on the articles category e.g. sports, entertainment, politics. Such information will include e.g. betting odds (sport), local temperatures (weather), voting stats (politics) etc.
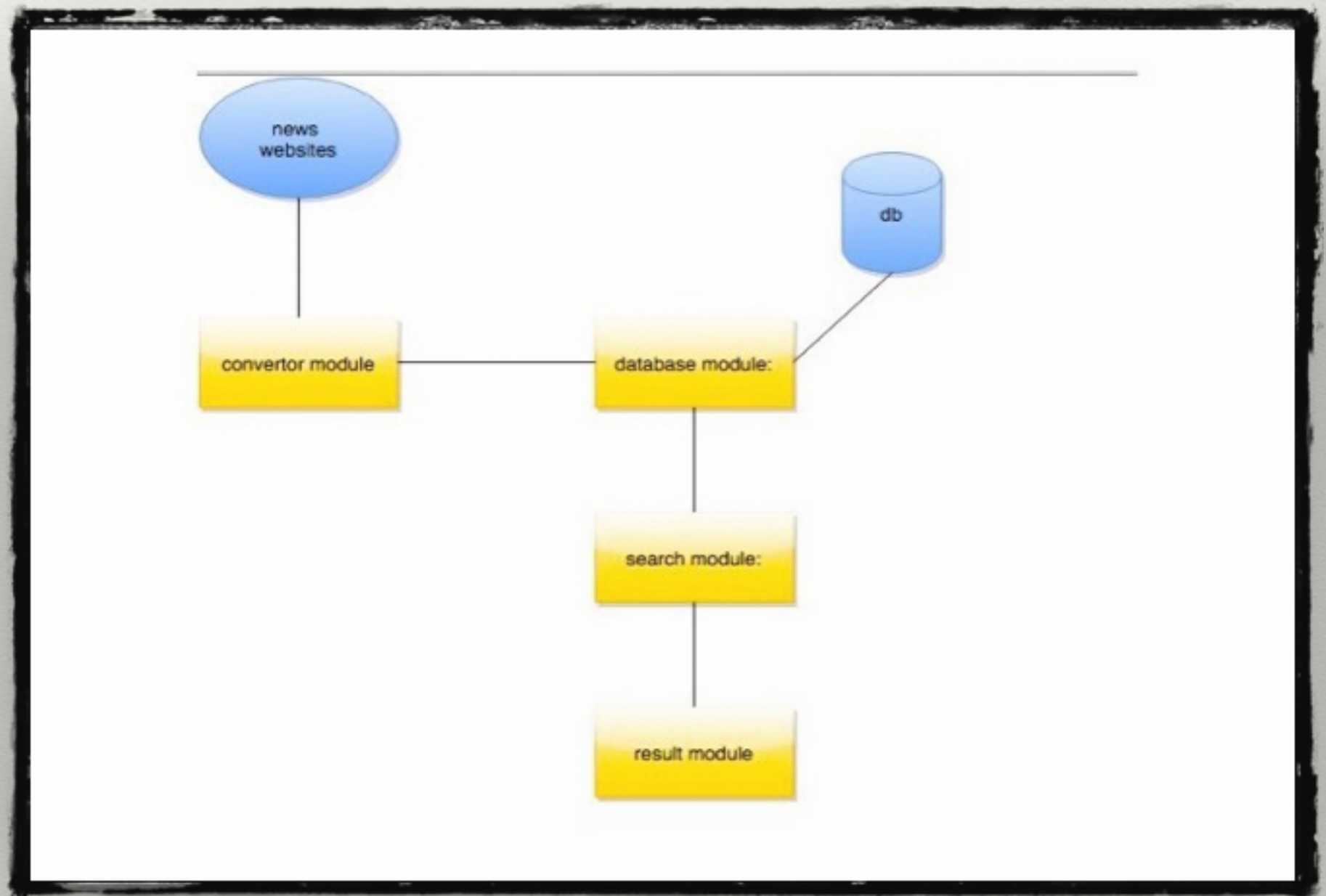
System Architecture Design

Front end
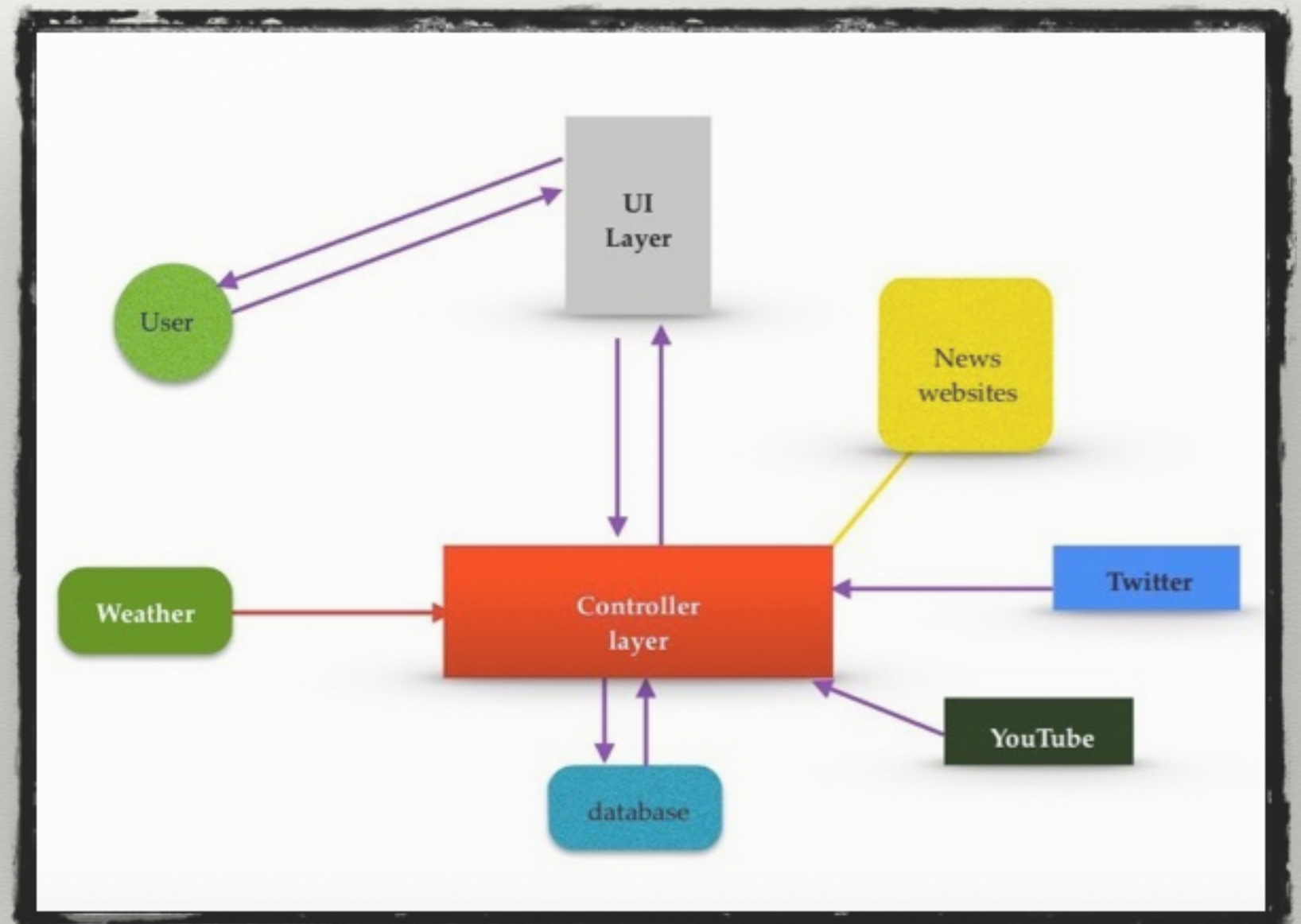
System Architecture Design

Back end

How does the system work?

Key technical aspects:

1. **Processing newspaper articles:** Converter module retrieves news page source through python url lib library (high level interface for fetching data) e.g. url lib.request.urlopen(url)

2. Analyse retrieved news source to obtain article information e.g. title, summary, image. Carried out primarily through regular expression e.g. Beautiful Soup and Newspaper library

3. Database module: Store newspaper and article information into database e.g. associated country, category

4. Retrieve data from database and display contextual information for selected article. Twitter and youtube data retrieved based on keywords associated with article (keywords obtained from article title/body text)

Key decisions

1. **Google Maps:** We wanted to provide a 2D geographic map to the user so that the user could click on a specific country rather than entering the name of the country.

2. Weather: Once the user clicks on the country, we provide him/her with an option to view the weather of that country or go to the relevant news articles. **Forecast.io** was used for this since it exactly matched our need i.e. it took in the latitude and longitude of the required country and displayed the weather information.

3. **Categorising the news:** We did not want to dump all the articles onto the user without categorising it. Rather we decided to put the articles under various headings for two reasons:
   1. User could directly go to the interested category.
   2. It looked neat.

4. **Summary:** We wanted to provide a unique summary of the news article i.e. a short paragraph on the entire news article posted on the news site.
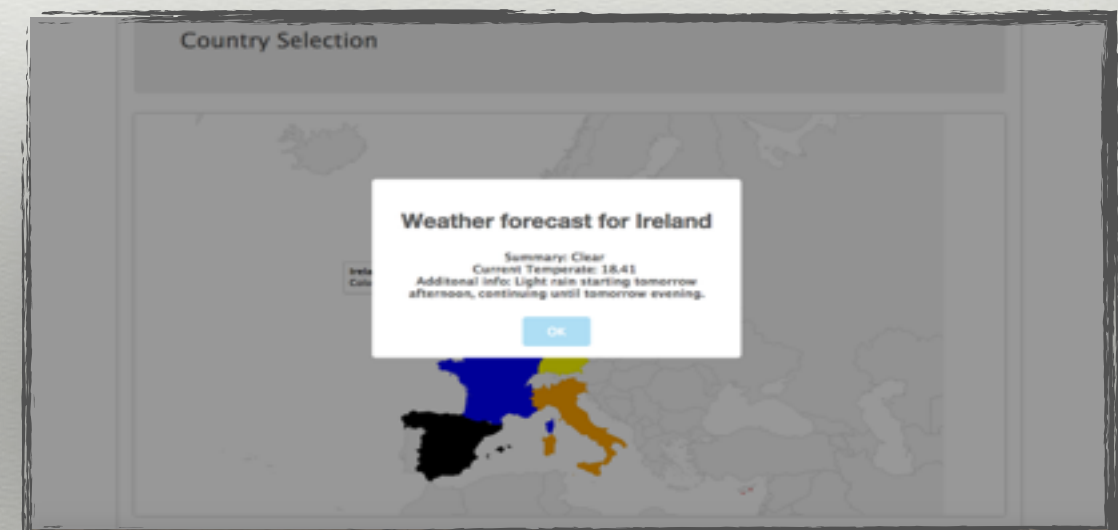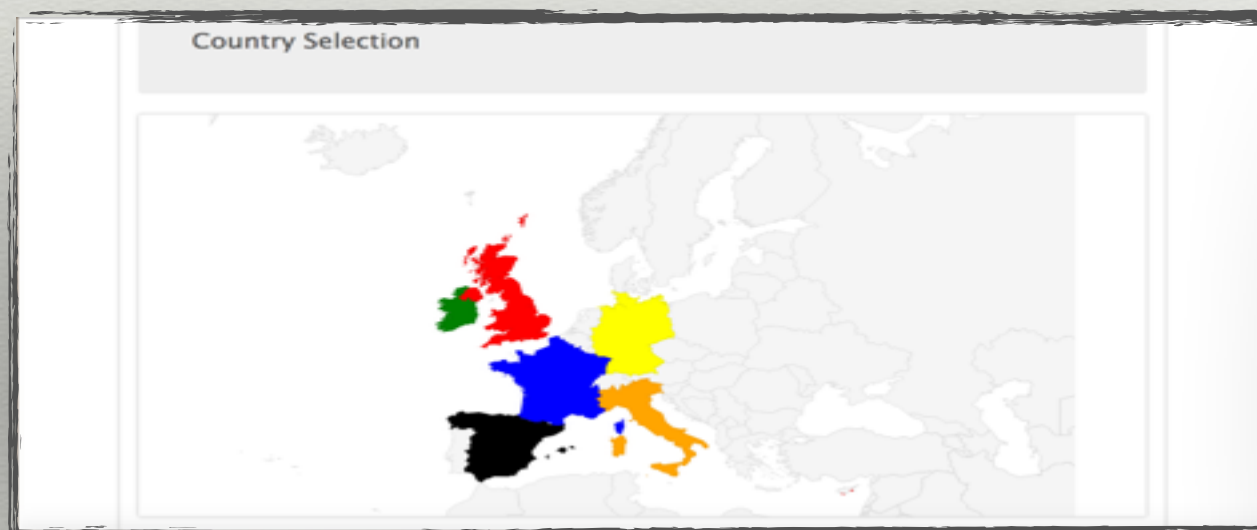
Design

First phase

1. Retrieving news articles from only two countries (Ireland & UK)

2. Passing article headings to Tweepy and Youtube to obtain relevant videos (Poor relevancy)

Design

Second phase

3.   Introduction of 2D map

4.   Selecting a country retrieved relevant articles + weather information

5.   Refine search method for Youtube videos
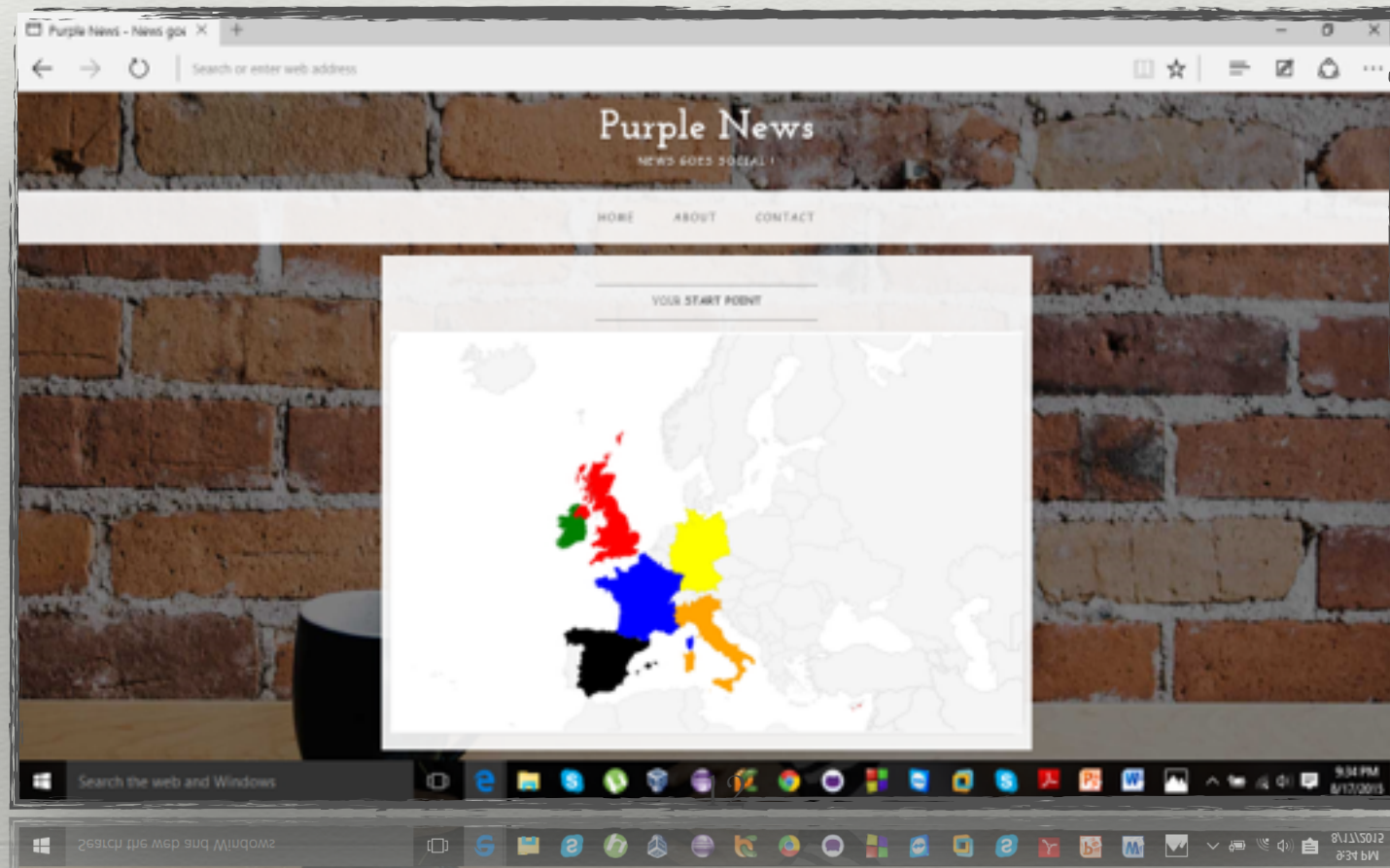
Design

Third phase

6. Develop user interface for improved user experience

7.   Template creation

8.   Advanced filtering of Youtube videos

Customer Value Proposition

Customers: Advertisers and News sites

Value to customer/satisfy needs:

1. Display advertisements on various pages of the side

2. Embed advertisements onto the YouTube video before displaying the actual content through Adsense.

3. We would add the images of the news publishers so that the user can get a full report on the story by visiting the publicised news site thereby increasing the traffic link to their site.

Customer Value Proposition

Revenue: The majority of the revenue is generated through advertisements

Cost structure:

1. Server maintenance
2. Developer Cost
3. Marketing/Promotion
4. R & D

Profit creation:

- Advertisements on pages and also through videos

- Gold : Default Location of the user is stored and any updated news for that region would be notified to the user. User has the option to disable the ads before the video is shown

- Silver : Default Location of the user is stored and any updated news for that region would be notified to the user but would be done with a certain delay.

- Tourists who have subscribed to our website would get travel discounts from our travel partners.

Reviews

Functionality Testing: Verified that there was no dead end pages

Usability Testing: Verified application ease of use (We also asked users by providing a feedback to our application)

Does the system address the problem?: We set out to provide the user location based trending news along with the related tweets and YouTube videos and to a certain extent we are successful

Outstanding problems: The relevance of YouTube videos is the only concern of PurpleNews

Reviews

Future work (Improvements to system):

1. Ask the user to provide the feedback about the relevance of the video and try to filter out the irrelevant one's

2. We are continuously improving the user interface and the user experience.

3. Explore into many more countries and add multiple newspapers to get an all-round perspective on the story.

Reflections

Most successful features:

- Contextualisation of news
- Retrieving relevant tweets
- Good quality user interface

Least successful:

- Obtaining the relevancy of Youtube videos

Biggest challenges:

- Integrating multiple API's (News, Twitter, Youtube)
- Building the bridge between the front end and back end

Lessons Learnt:

- The entire process of how a software product is built, tested, deployed and maintained
- The business aspect as to how a product is marketed, the costs incurred, the profits made and how customer relationships are managed