Rpubs: <https://rpubs.com/vivianchua/xxxxxx> [ Kindly update the latest link]  
Shiny app : <https://xxxxxxxxxxxxxxxxx.shinyapps.io/xxxxxxxxx> [ Kindly update the latest link]  
Github repository : <https://github.com/amandaheng/dengueshinyproject> [I’ll move all the source files from google drive to github once Vivian has completed Tab 5 Scatterplot & Tab 6 Documentation]

**Project title : Malaysia Dengue Outbreak Analyzer and Healthcare locator ( any better idea?)**

**Introduction :**

Dengue fever is an infectious tropical disease caused by the dengue virus and transmitted by Aedes mosquitoes. The dengue fever brought by Aedes mosquitoes is listed as the most prevalent disease in the country with a ratio of 328.3 cases per 100,000 population.[to be edited/ added by Aishah & Vivian]

**Finding and Getting Data**  
The 10 [ + datasets from trends visualization -refer to Aishah ] datasets are downloaded from http://www.data.gov.my. These datasets are tabulation of Dengue Outbreak in Malaysia recorded between 2010 to 2015 ,4 healthcare centres datasets and [datasets from trends visualization] .

The data is provided by the Ministry of Health Malaysia.

**Data Cleaning and Processing**-Rename columns into a meaningful names

-Select distinct areas from a combined dataset (dengue2010\_2015)

#select distinct areas from dataset

location <- dengue2010\_2015%>% select("area") %>% distinct

location$area <- str\_trim(location$area)

-Fetching location coordinates from Google API (Geocoding.R)

-Fixing inaccurate data (mismatch between some states and areas) by perform system testing

-Clean NAs as well as white spaces

**Problem Definition Framework (Requested by Dr. Salimah during Machine Learning class.]**

**What is the problem?**Where are the hotspots of dengue outbreak in Malaysia & the healthcare centres (Hospital, Clinic 1M, Clinic Desa, Clinic Government) near them?

[to be edited/ added by Aishah & Vivian]

**Why does the problem need to be solved.**Dengue fever, which is transmitted by the bite of Aedes mosquitoes, is listed as the most prevalent disease in Malaysia with a ratio of 328.3 cases per 100,000 population. A modern & effective strategy to address this pressing issue is crucial.

One of the few reasons for rise in dengue cases according to Dr Rose Nani Mudin - the head of Disease Control Division in the Health Ministry is due to poor hygiene environment, so there is a need to create an awareness among Malaysians about dengue. [<https://www.fundsupermart.com.my/insurance/article/dengue---an-endemic-disease-every-malaysian-should-know-38>]

[to be edited/ added by Aishah & Vivian]

**How would I solve the problem?**

* **Interactive Map**- Create an interactive map to locate the hotspots of dengue outbreaks & healthcare centres near them. The best way to survive dengue fever is to seek medical help promptly.
* **Dengue Outbreak Analysis**-It shows

-Total dengue cases by year

-Total dengue cases by state

-Comparisons of total dengue cases for all chosen states from year 2010 to 2015

The government can focus more on high risk states & areas and put more effort into educating the residents. The best way to prevent infection is to protect against the bites of mosquitoes that transmit the virus and to minimize sites where mosquitoes breed.

* **Trend Visualization -**  by aishah
* **Scatterplot** - by vivian
* [to be edited/ added by Aishah & Vivian]

**Data cleaning\*\*\* and preparation for 10 datasets**

|  |  |  |
| --- | --- | --- |
| **Raw datasets** | **Assigned to** | **Progress / Output** |
| These 6 datasets are downloaded from http://www.data.gov.my. These datasets are tabulation of Dengue Outbreak in Malaysia recorded between 2010 to 2015. The data is provided by the Ministry of Health Malaysia.  •List of Dengue Epidemic Hotspot in Malaysia 2010,2011,2012,2013,2014,2015  lokalitihotspot2010.xlsx  lokalitihotspot2011.xlsx  lokalitihotspot2012.xlsx  lokalitihotspot2013.xlsx  lokalitihotspot2014.xlsx  lokalitihotspot2015.xlsx | •Data cleaning and integration by Amanda  •Select distinct areas from a combined dataset (dengue2010\_2015)  •Fetching location coordinates from Google API (Geocoding.R),  • Fixed mismatch between states and areas (incorrect data on raw datasets) | dengue2010\_2015.csv  location.csv |
| The 4 healthcare datasets are downloaded from http://www.data.gov.my.  hospital.csv clinicgov.csv clinicdesa.csv clinic1m.csv | •Data cleaning by Amanda  •clinic1m.csv latitude longitude coordinates by Aishah | hospital.csv clinicgov.csv clinicdesa.csv clinic1m.csv |
| Uploaded Malaysia GeoSpatial Data Frame at district, state, and country level respectively:   * MYS\_adm2.rds * MYS\_adm1.rds * MYS\_adm0.rds | * MYS\_adm3.rds is used to build polygon in leaflet by Aishah | * MYS\_adm2.rds * MYS\_adm1.rds * MYS\_adm0.rds |

**Dengue Shiny App**

|  |  |  |
| --- | --- | --- |
| **Task** | **Assigned to** | **Progress** |
| **User Interface** The layout & appearance of app | Amanda | Done |
| **Interactive map**  It shows the total dengue cases in each area/zone and the locations of clinics and hospitals based on the chosen states, from year, from week, to year, to week | Amanda  Aishah (enhanced map results by adding district level polygon to enhance Malaysia) | Done |
| **Data Explorer**  It shows the data in table form based on the chosen year | Amanda | Done |
| **Outbreak Analysis**  It shows   1. Total dengue cases by year 2. Total dengue cases by state 3. Comparisons of total dengue cases for all chosen states from year 2010 to 2015 | Amanda | Done |
| Other feature/analysis/ predictive model . Anything that you'd like to add in to this Shiny App | Aishah | Code for rpivotTable uploaded to Google Drive on 29 April 2018 |
| Other feature or analysis or predictive model | Vivian | Done (Descriptive) |
| About  Documentation about this Shiny App | Vivian |  |

**Pitchbook**

|  |  |  |
| --- | --- | --- |
| Pitchbook - 5 slides The pitchbook is to be created using Slidify or Rstudio with a html5 slide deck. Then it has to be published on Rpubs. | Vivian | Done |

**Presentation on Week14 - 15 May**

|  |  |
| --- | --- |
| Introduction and Pitchbook | Vivian |

**Shiny App Demo**

|  |  |
| --- | --- |
| Interactive map | Amanda |
| Data Explorer | Amanda |
| Outbreak analysis by year, state | Amanda |
| ...... other features on shiny app | Aishah |
| Conclusion | Aishah |