

# Assignment 6

*Senhao Li*

Bude is a small seaside resort town in north Cornwall, England, UK, in the civil parish of Bude-Stratton and at the mouth of the River Neet (also known locally as the River Strat). It is sometimes formerly known as Bude Haven. It lies southwest of Stratton, south of Flexbury and Poughill, and north of Widemouth Bay and is located along the A3073 road off the A39. Bude is twinned with Ergué-Gabéric in Brittany, France. Bude's coast faces Bude Bay in the Celtic Sea, part of the Atlantic Ocean.

```
library(ggmap)

## Loading required package: ggplot2
bude <- geocode("Bude, UK")

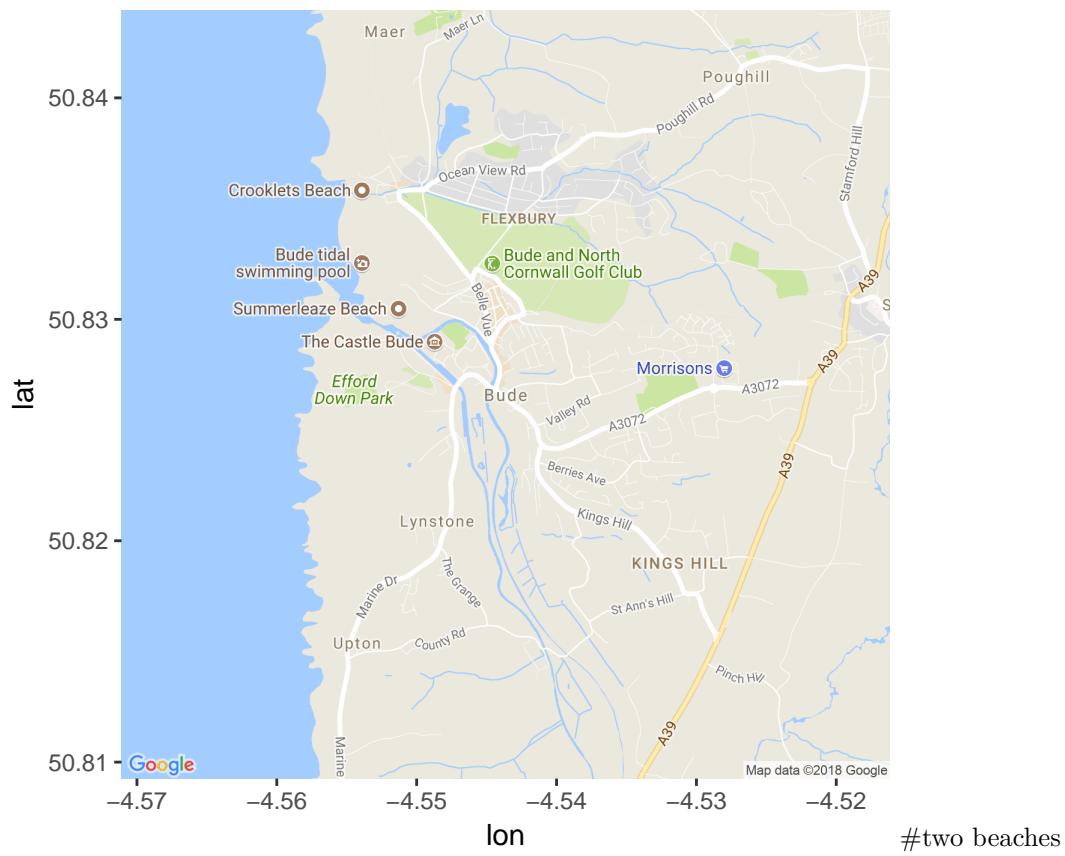
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Bude,%20UK&sensor=false
beach <- geocode(c("Summerleaze Beach Bude UK", "Crooklets Beach Bude UK"))

## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Summerleaze%20Beach%20Bude%20UK
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Crooklets%20Beach%20Bude%20UK
```

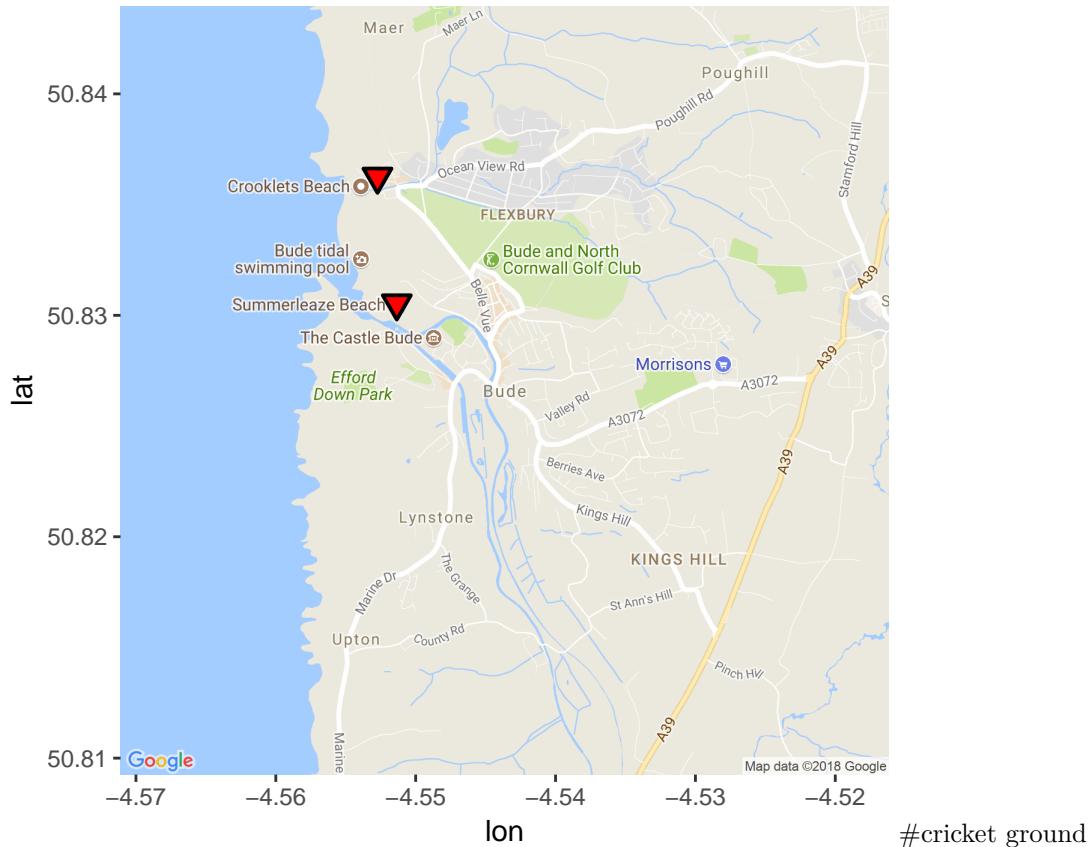
## roadmap

```
budemap <- get_map(bude, zoom=14, maptype="roadmap")

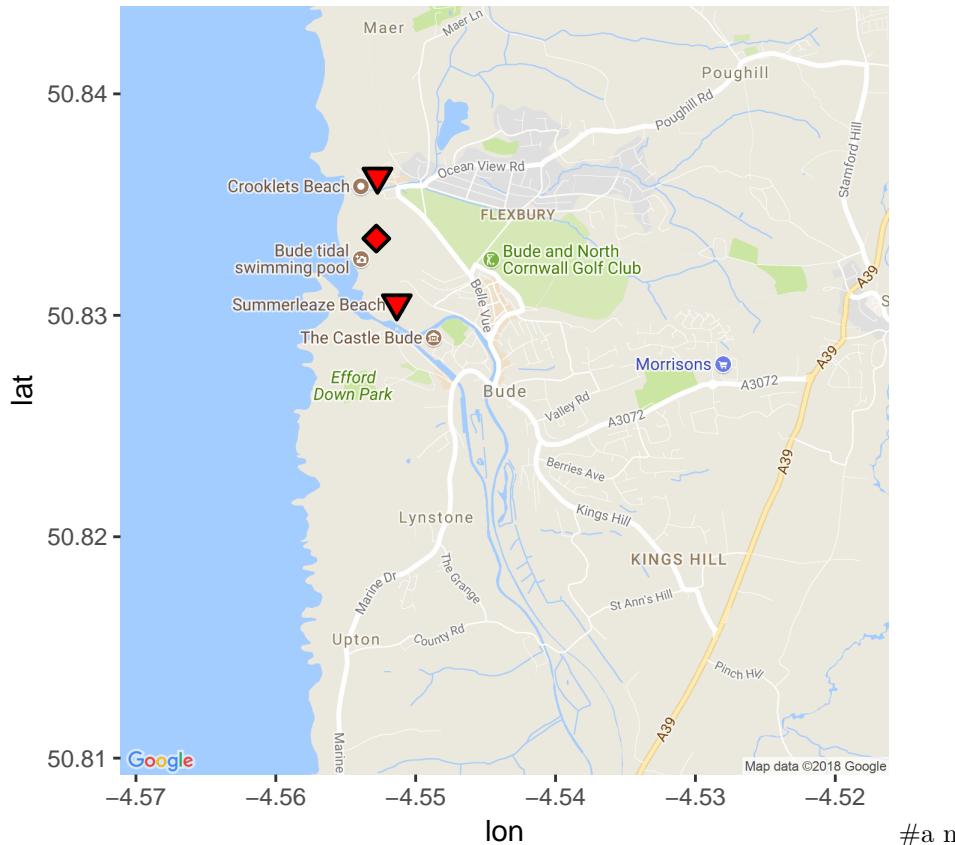
## Map from URL : http://maps.googleapis.com/maps/api/staticmap?center=50.826636,-4.543678&zoom=14&sizeratio=1|1
ggmap(budemap)
```



```
ggmap(budemap)+geom_point(  
  aes(x=lon,y=lat),data=beach,fill="red",size=3,shape=25,stroke=1)
```



```
cricket <- geocode("Cricket Club Bude, UK")  
  
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Cricket%20Club%20Bude  
ggmap(budemap)+geom_point(  
  aes(x=lon,y=lat),data=beach,fill="red",size=25,stroke=1)+geom_point(  
  aes(x=lon,y=lat),data=cricket,fill="red",size=3,stroke=1)
```



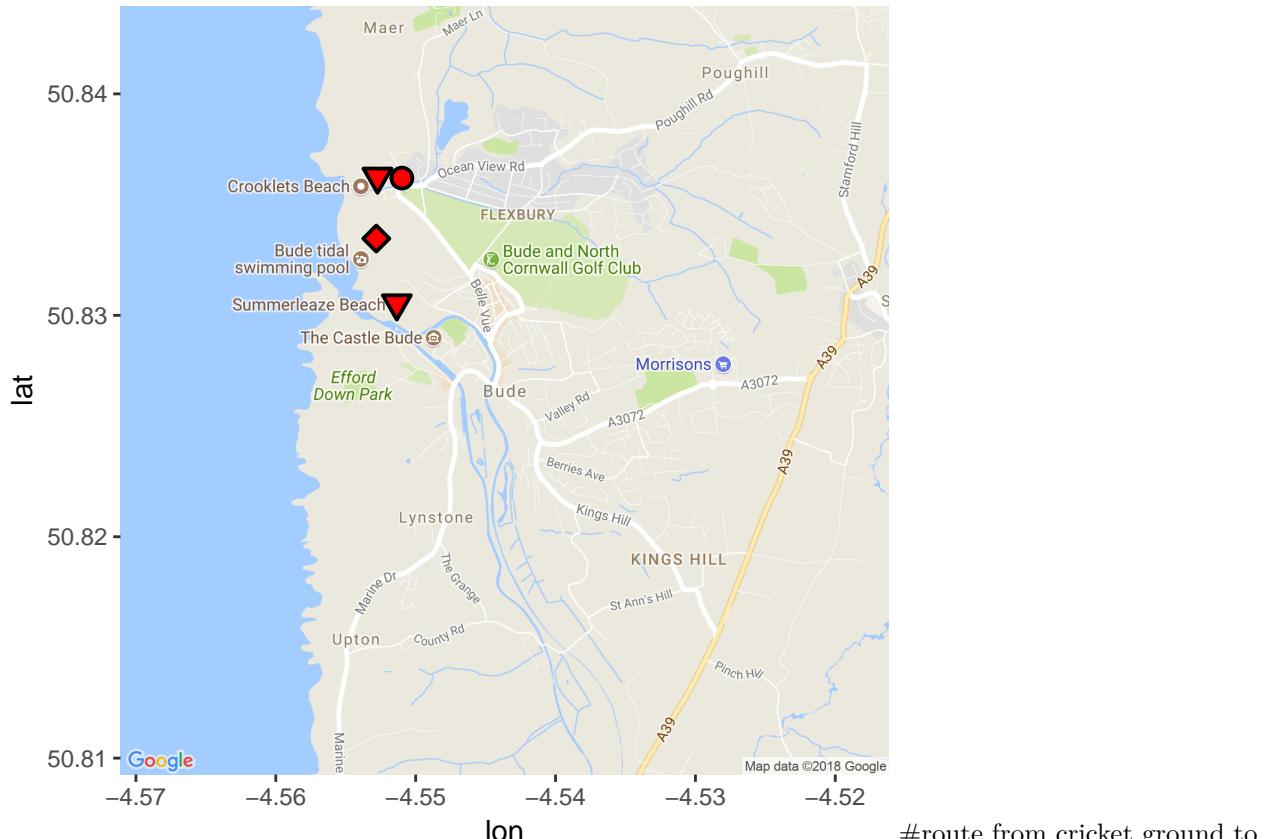
```

# a nearby pub

pub <- geocode("Crooklets Inn Bude ,UK")

## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Crooklets%20Inn%20Bude
ggmap(budemap)+geom_point(
  aes(x=lon,y=lat),data=beach,fill="red",size=25,stroke=1)+geom_point(
    aes(x=lon,y=lat),data=cricket,fill="red",size=3,stroke=1)+geom_point(
      aes(x=lon,y=lat),data=pub,fill="red",size=3,stroke=1)

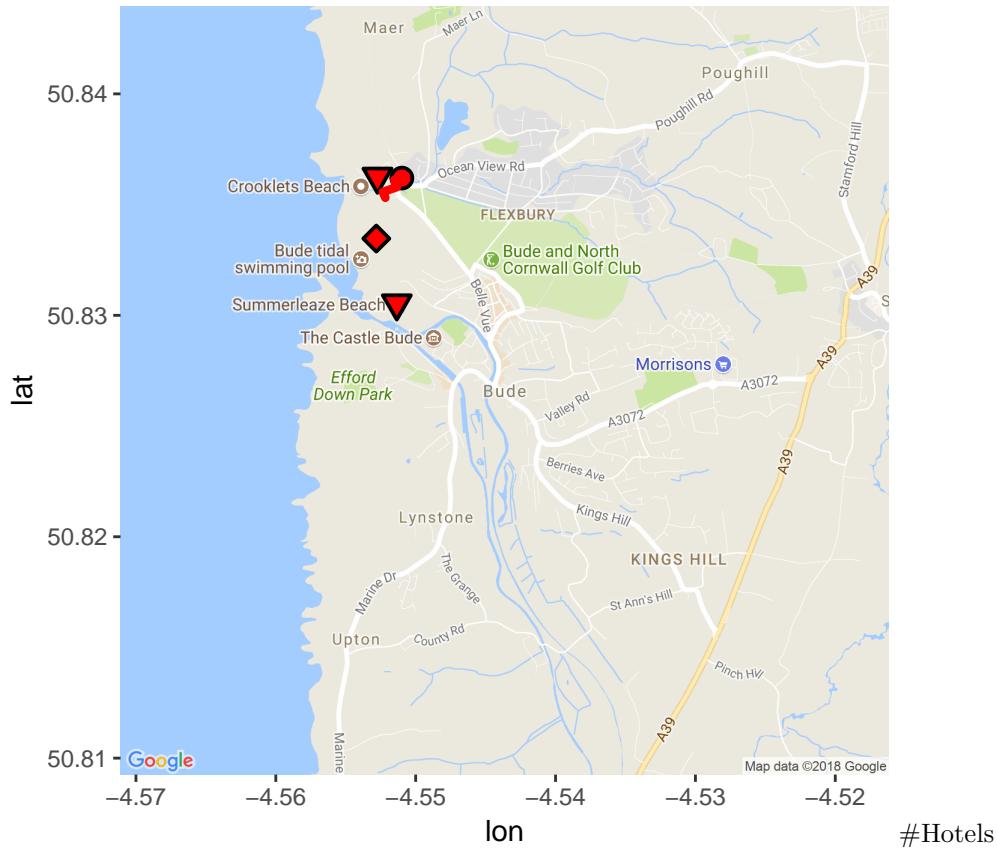
```



#route from cricket ground to the pub

```
from <- "Cricket Club Bude, UK"
to <- "Crooklets Inn Bude, UK"
route <- route(from,to,structure="route")
```

```
## Information from URL : http://maps.googleapis.com/maps/api/directions/json?origin=Cricket+Club+Bude,
ggmap(budemap)+geom_point(
  aes(x=lon,y=lat),data=beach,fill="red",size=3,shape=25,stroke=1)+geom_point(
    aes(x=lon,y=lat),data=cricket,fill="red",size=3,shape=23,stroke=1)+geom_point(
      aes(x=lon,y=lat),data=pub,fill="red",size=3,stroke=1)+geom_path(
        aes(x = lon, y = lat), colour = "red", size = 1.5,
        data = route, lineend = "round"
)
```

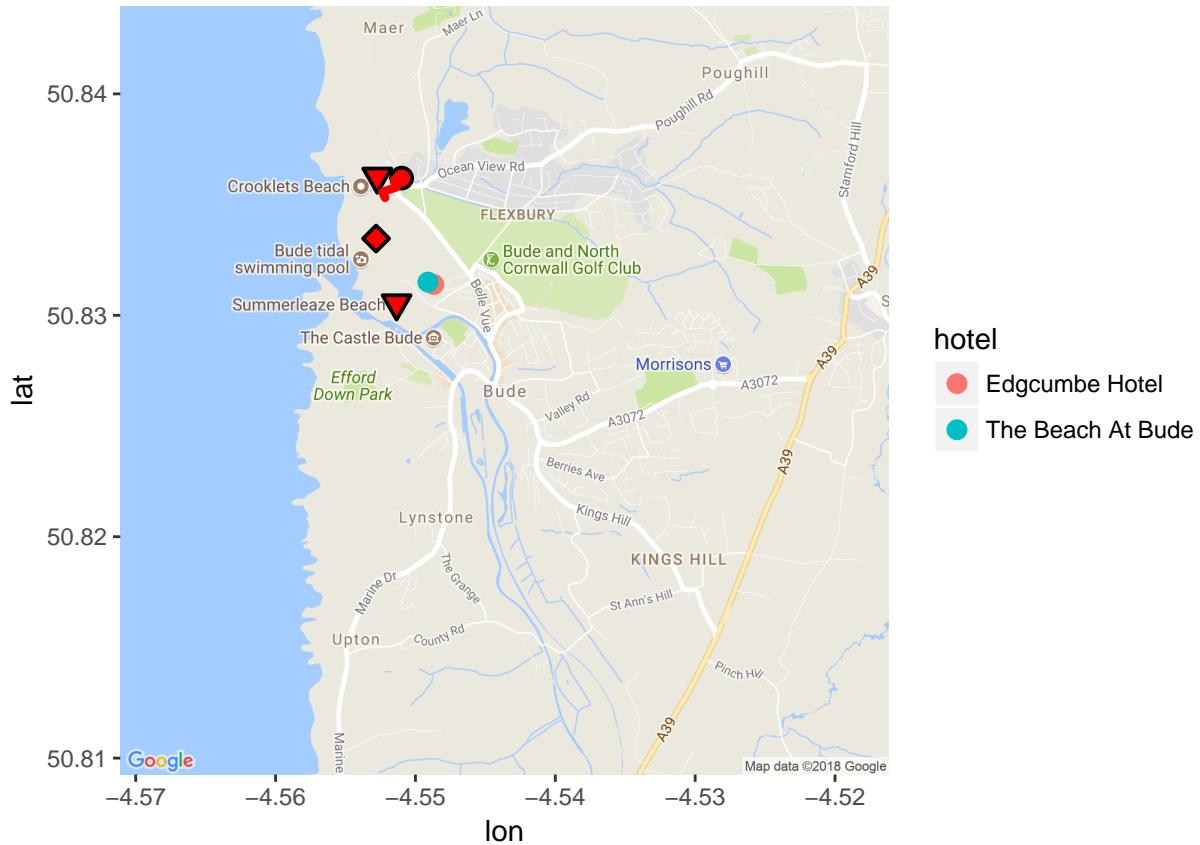


```

hotel.d <- data.frame(lat=c(50.831393,50.831501),
                       lon=c(-4.548689,-4.549108),
                       hotel=c("Edgcumbe Hotel","The Beach At Bude"))

ggmap(budemap)+geom_point(
  aes(x=lon,y=lat),data=beach,fill="red",size=3,shape=25,stroke=1)+geom_point(
  aes(x=lon,y=lat),data=cricket,fill="red",size=3,shape=23,stroke=1)+geom_point(
  aes(x=lon,y=lat),data=pub,fill="red",size=3,shape=21,stroke=1)+geom_path(
  aes(x = lon, y = lat), colour = "red", size = 1.5,
  data = route, lineend = "round")
)+ geom_point(dat = hotel.d, aes(x=lon, y=lat, color = hotel),size = 3)

```



## watercolor

```

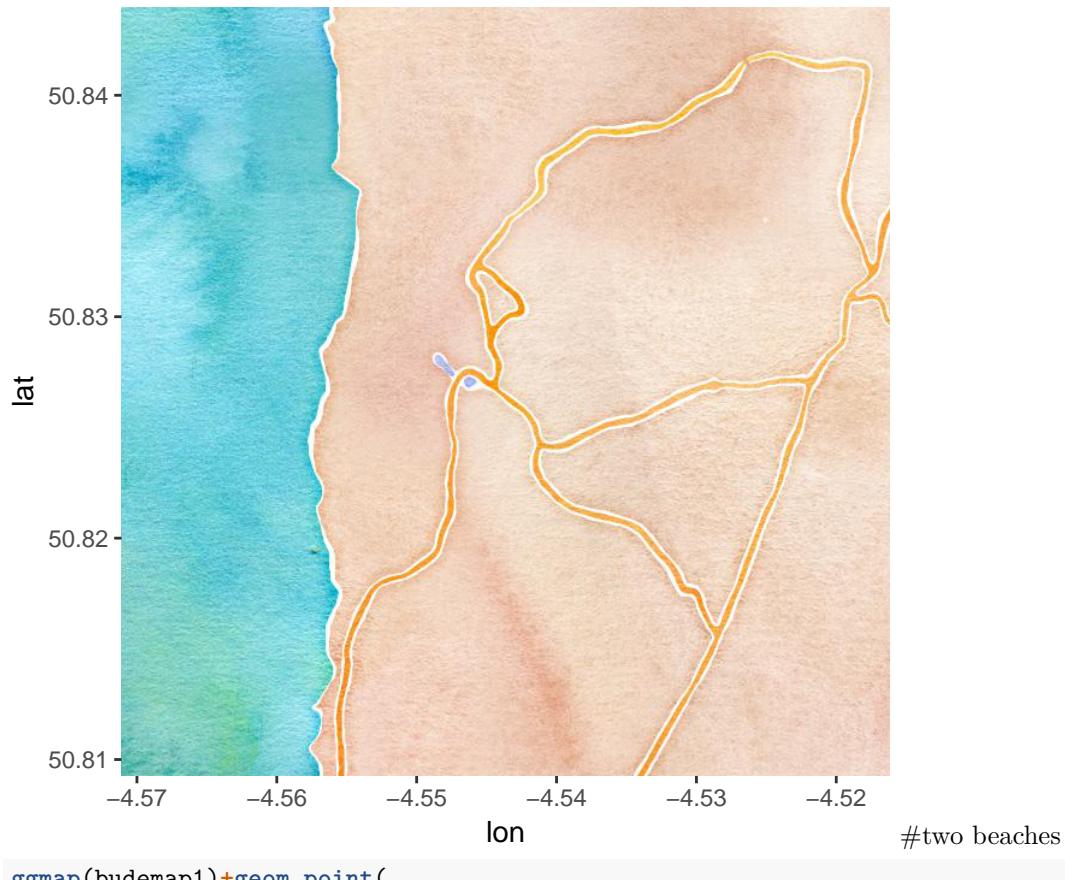
budemap1 <- get_map(bude, zoom=14, maptype="watercolor")

## maptype = "watercolor" is only available with source = "stamen".
## resetting to source = "stamen"...

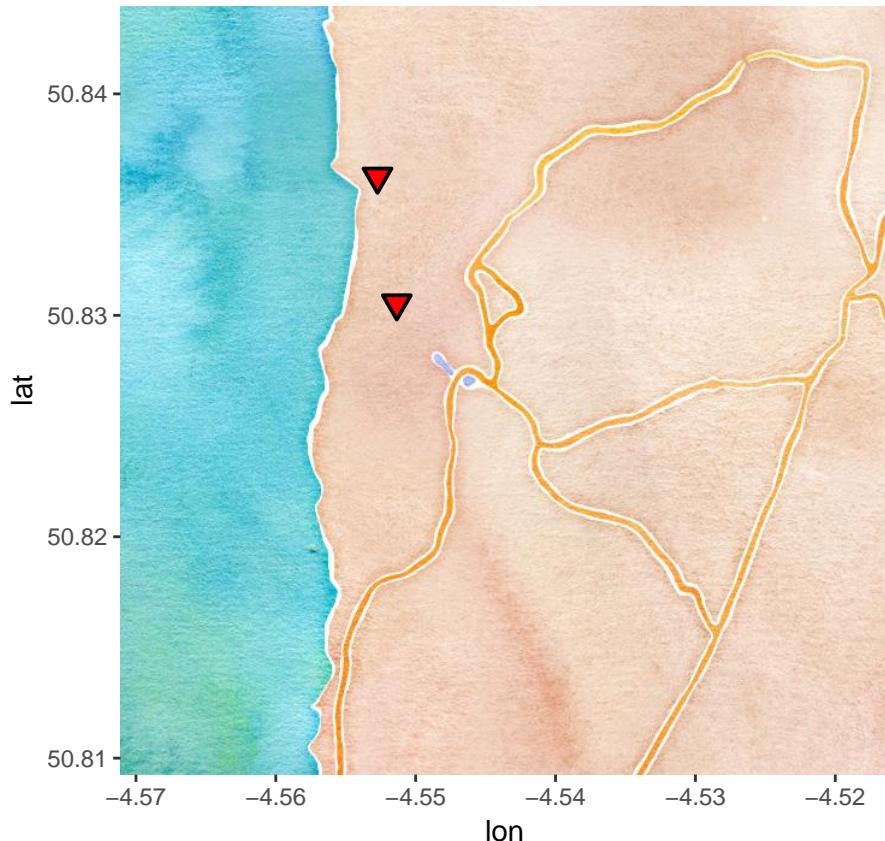
## Map from URL : http://maps.googleapis.com/maps/api/staticmap?center=50.826636,-4.543678&zoom=14&size=650x400&maptype=watercolor&key=AIzaSyCQYyfJLWzXGKUOOGvDwIjPmBzgkV0oIw
## Map from URL : http://tile.stamen.com/watercolor/14/7983/5496.jpg
## Map from URL : http://tile.stamen.com/watercolor/14/7984/5496.jpg
## Map from URL : http://tile.stamen.com/watercolor/14/7985/5496.jpg
## Map from URL : http://tile.stamen.com/watercolor/14/7986/5496.jpg
## Map from URL : http://tile.stamen.com/watercolor/14/7983/5497.jpg
## Map from URL : http://tile.stamen.com/watercolor/14/7984/5497.jpg
## Map from URL : http://tile.stamen.com/watercolor/14/7985/5497.jpg
## Map from URL : http://tile.stamen.com/watercolor/14/7986/5497.jpg
## Map from URL : http://tile.stamen.com/watercolor/14/7983/5498.jpg
## Map from URL : http://tile.stamen.com/watercolor/14/7984/5498.jpg
## Map from URL : http://tile.stamen.com/watercolor/14/7985/5498.jpg

```

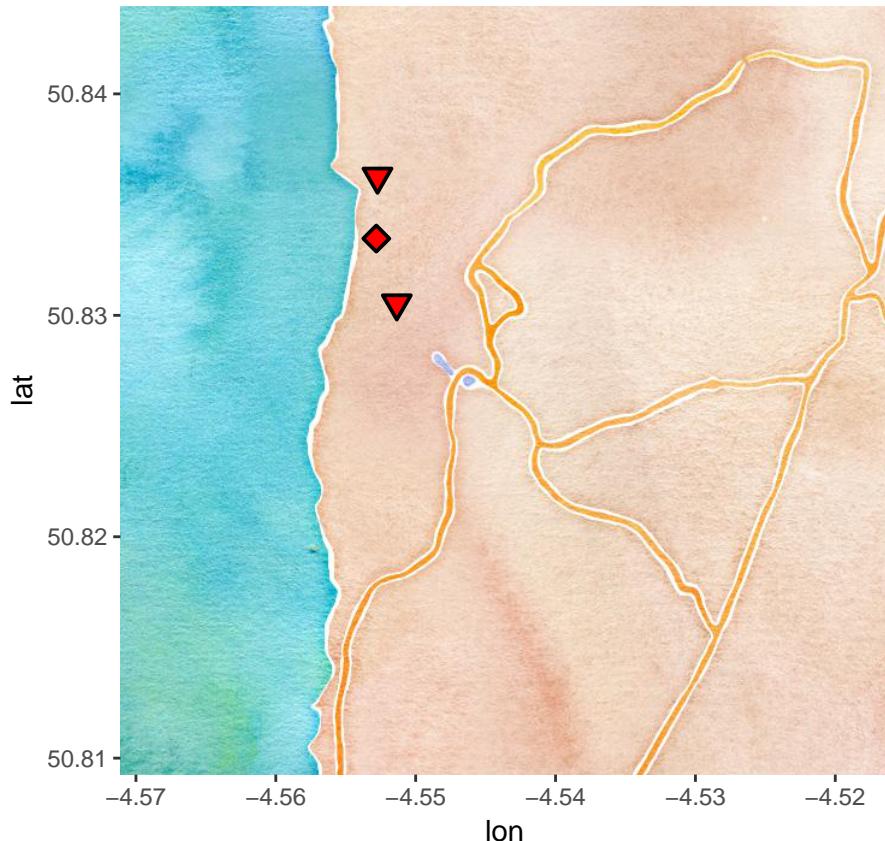
```
## Map from URL : http://tile.stamen.com/watercolor/14/7986/5498.jpg  
ggmap(budemap1)
```



```
ggmap(budemap1)+geom_point(  
  aes(x=lon,y=lat),data=beach,fill="red",size=3,stroke=1)
```



```
cricket <- geocode("Cricket Club Bude UK")  
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Cricket%20Club%20Bude  
ggmap(budemap1)+geom_point(  
  aes(x=lon,y=lat),data=beach,fill="red",size=25,stroke=1)+geom_point(  
  aes(x=lon,y=lat),data=cricket,fill="red",size=3,stroke=1)
```

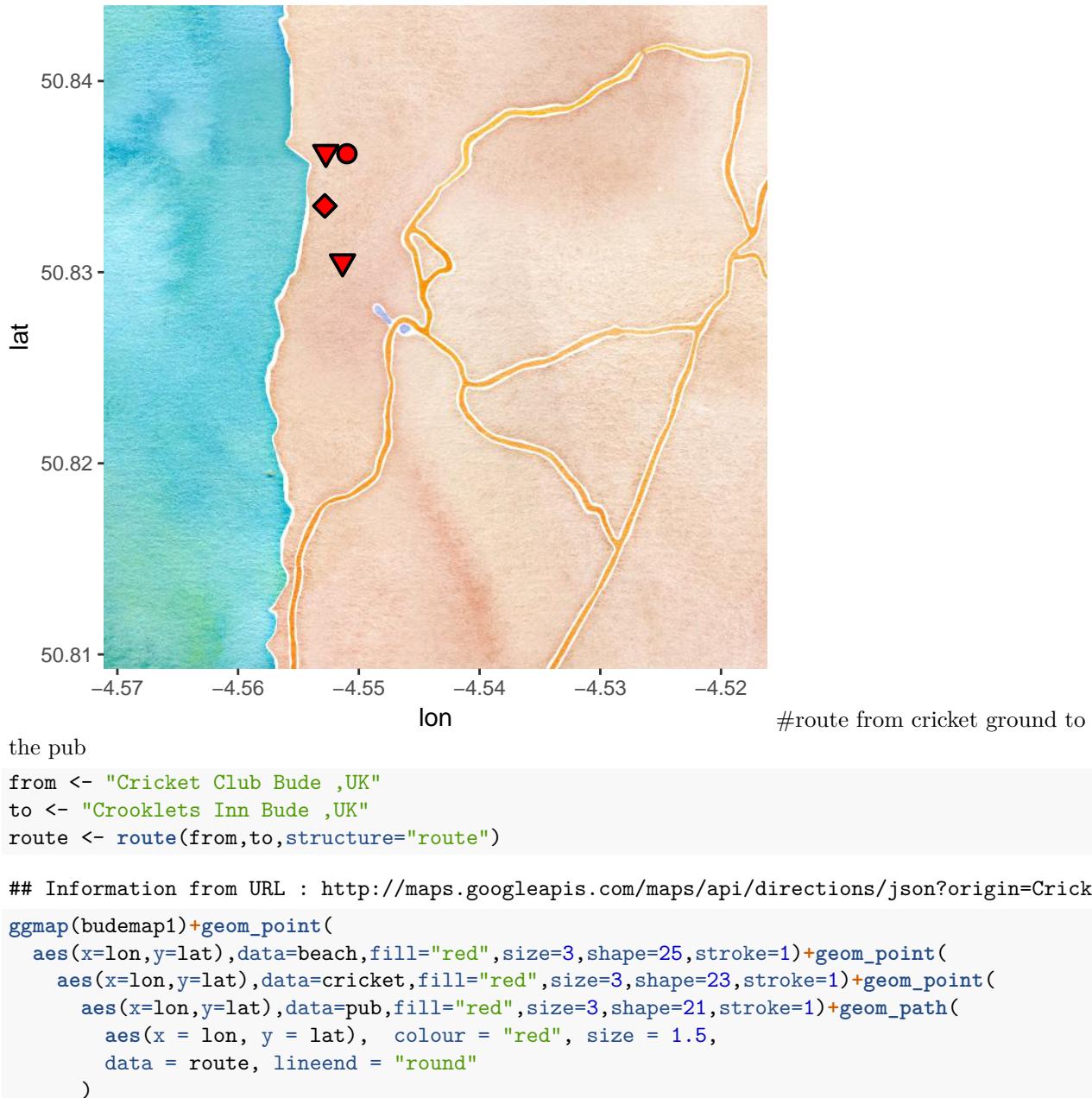


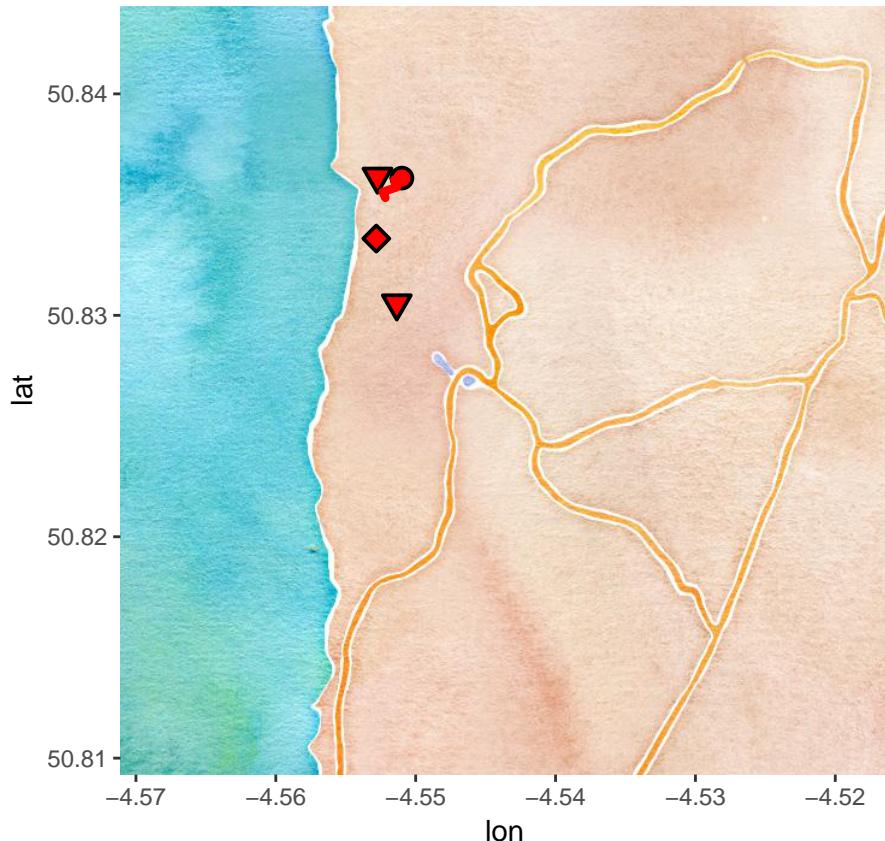
```

# a nearby pub
pub <- geocode("Crooklets Inn Bude ,UK")

## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Crooklets%20Inn%20Bude
ggmap(budemap1)+geom_point(
  aes(x=lon,y=lat),data=beach,fill="red",size=3,stroke=1)+geom_point(
    aes(x=lon,y=lat),data=cricket,fill="red",size=3,stroke=1)+geom_point(
      aes(x=lon,y=lat),data=pub,fill="red",size=3,stroke=1)

```





```
ggmap(budemap1)+geom_point(  
  aes(x=lon,y=lat),data=beach,fill="red",size=3,shape=25,stroke=1)+geom_point(  
  aes(x=lon,y=lat),data=cricket,fill="red",size=3,shape=23,stroke=1)+geom_point(  
  aes(x=lon,y=lat),data=pub,fill="red",size=3,shape=21,stroke=1)+geom_path(  
  aes(x = lon, y = lat), colour = "red", size = 1.5,  
  data = route, lineend = "round"  
)
```

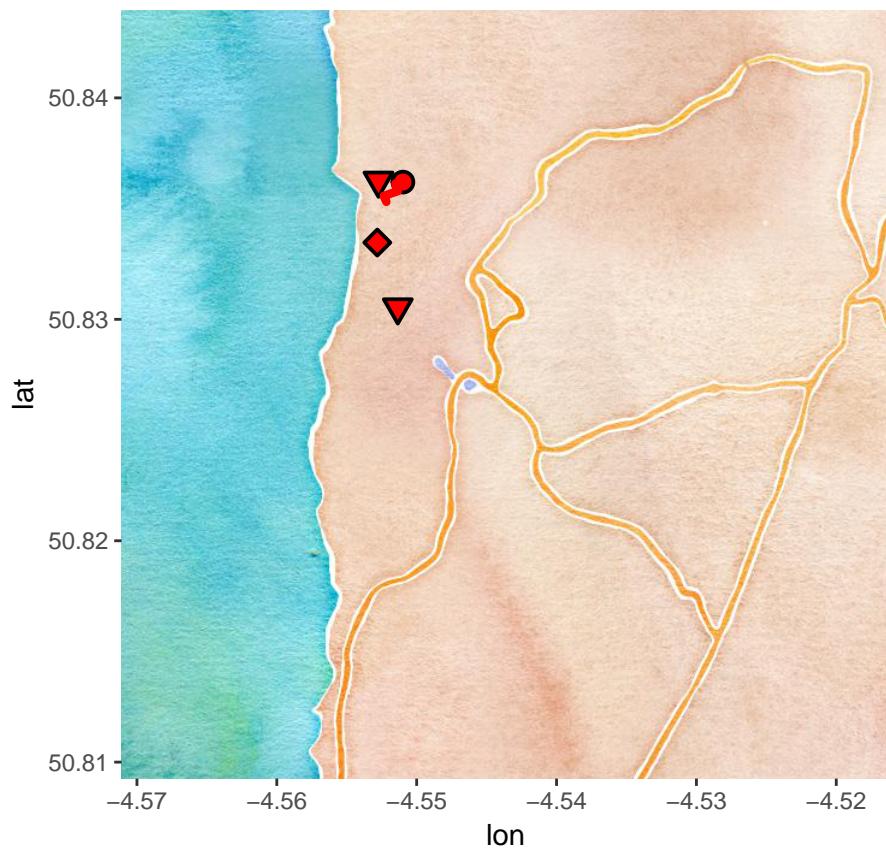




Figure 1: Summerleaze Beach



Figure 2: Crooklets Beac



Figure 3: Cricket Club



Figure 4: The Crooklets Inn



Figure 5: Hotel: The Beach at Bude



Figure 6: Hotel: Edgcumb