In [1]:
```
import pandas as pd
import numpy as np
import plotly.express as px
from plotly.offline import init_notebook_mode
import matplotlib.pyplot as plt
%matplotlib inline
```

In [2]:
```
data = pd.read_csv(r"C:\Users\Manas Ranjan Kar\Downloads\indian_food.csv")
```

In [3]:
```
data
```

Out[3]:

	name	ingredients	diet	prep_time	cook_time	flavor_profile	course	state	region
0	Balu shahi	Maida flour, yogurt, oil, sugar	vegetarian	45	25	sweet	dessert	West Bengal	East
1	Boondi	Gram flour, ghee, sugar	vegetarian	80	30	sweet	dessert	Rajasthan	West
2	Gajar ka halwa	Carrots, milk, sugar, ghee, cashews, raisins	vegetarian	15	60	sweet	dessert	Punjab	North
3	Ghevar	Flour, ghee, kewra, milk, clarified butter, su...	vegetarian	15	30	sweet	dessert	Rajasthan	West
4	Gulab jamun	Milk powder, plain flour, baking powder, ghee,...	vegetarian	15	40	sweet	dessert	West Bengal	East
...	...	...	...	...	...	...	...	...	...
250	Til Pitha	Glutinous rice, black sesame seeds, gur	vegetarian	5	30	sweet	dessert	Assam	North East
251	Bebinca	Coconut milk, egg yolks, clarified butter, all...	vegetarian	20	60	sweet	dessert	Goa	West
252	Shufta	Cottage cheese, dry dates, dried rose petals, ...	vegetarian	-1	-1	sweet	dessert	Jammu & Kashmir	North
253	Mawa Bati	Milk powder, dry fruits, arrowroot powder, all...	vegetarian	20	45	sweet	dessert	Madhya Pradesh	Central
254	Pinaca	Brown rice, fennel seeds, grated coconut, blac...	vegetarian	-1	-1	sweet	dessert	Goa	West

255 rows × 9 columns

In [4]:
```
data.head()
```

Out[4]:

	name	ingredients	diet	prep_time	cook_time	flavor_profile	course	state	region
0	Balu shahi	Maida flour, yogurt, oil, sugar	vegetarian	45	25	sweet	dessert	West Bengal	East
1	Boondi	Gram flour, ghee, sugar	vegetarian	80	30	sweet	dessert	Rajasthan	West
2	Gajar ka halwa	Carrots, milk, sugar, ghee, cashews, raisins	vegetarian	15	60	sweet	dessert	Punjab	North
3	Ghevar	Flour, ghee, kewra, milk, clarified butter, su...	vegetarian	15	30	sweet	dessert	Rajasthan	West
4	Gulab jamun	Milk powder, plain flour, baking powder, ghee,...	vegetarian	15	40	sweet	dessert	West Bengal	East

In [5]:
```
data.columns
```

Out[5]:
```
Index(['name', 'ingredients', 'diet', 'prep_time', 'cook_time',
       'flavor_profile', 'course', 'state', 'region'],
      dtype='object')
```

In [6]:
```
data.info()
```

Out[6]:
```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 255 entries, 0 to 254
Data columns (total 9 columns):
 #   Column          Non-Null Count  Dtype 
---  ------          --------------  ----- 
 0   name            255 non-null    object
 1   ingredients     255 non-null    object
 2   diet            255 non-null    object
 3   prep_time       255 non-null    int64 
 4   cook_time       255 non-null    int64 
 5   flavor_profile  255 non-null    object
 6   course          255 non-null    object
 7   state           255 non-null    object
 8   region          254 non-null    object
dtypes: int64(2), object(7)
memory usage: 18.1+ KB
```

In [7]:
```
data.isnull().any()
```

Out[7]:
```
name              False
ingredients       False
diet              False
prep_time         False
cook_time         False
flavor_profile    False
course            False
state             False
region             True
dtype: bool
```

In [8]:
```
data.isnull().sum()
```

Out[8]:
```
name              0
ingredients       0
diet              0
prep_time         0
cook_time         0
flavor_profile    0
course            0
state             0
region            1
dtype: int64
```

In [9]:
```
data=data.replace(-1,np.nan)
data=data.replace('-1',np.nan)
```

In [10]:
```
data.head()
```

Out[10]:

	name	ingredients	diet	prep_time	cook_time	flavor_profile	course	state	region
0	Balu shahi	Maida flour, yogurt, oil, sugar	vegetarian	45.0	25.0	sweet	dessert	West Bengal	East
1	Boondi	Gram flour, ghee, sugar	vegetarian	80.0	30.0	sweet	dessert	Rajasthan	West
2	Gajar ka halwa	Carrots, milk, sugar, ghee, cashews, raisins	vegetarian	15.0	60.0	sweet	dessert	Punjab	North
3	Ghevar	Flour, ghee, kewra, milk, clarified butter, su...	vegetarian	15.0	30.0	sweet	dessert	Rajasthan	West
4	Gulab jamun	Milk powder, plain flour, baking powder, ghee,...	vegetarian	15.0	40.0	sweet	dessert	West Bengal	East

In [11]:
```
data.isnull().sum()
```

Out[11]:
```
name              0
ingredients       0
diet              0
prep_time        30
cook_time        28
flavor_profile   29
course            0
state            24
region           14
dtype: int64
```

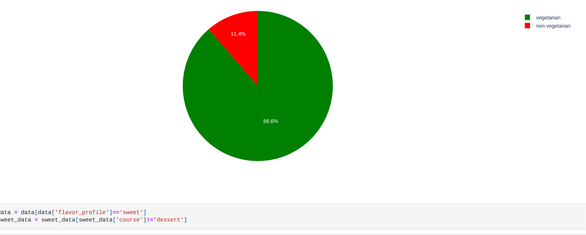
In [12]:
```
data.shape
```

Out[12]:
```
(255, 9)
```

In [13]:
```
# Data Visualisation
```

In [14]:
```
pie_data = data.diet.value_counts().reset_index()
```

In [15]:
```
pie_data.columns = ['diet','count']
fig = px.pie(pie_data, values='count', names='diet', title='Proportion of Vegetarian and Non-Vegetarian dishes',
             color_discrete_sequence=['green', 'red'])
fig.show()
```



In [16]:
```
sweet_data = data[data['flavor_profile']=='sweet']
final_sweet_data = sweet_data[sweet_data['course']!='dessert']
```

In [17]:
```
final_sweet_data
```

Out[17]:

	name	ingredients	diet	prep_time	cook_time	flavor_profile	course	state	region
46	Obbattu holige	Maida flour, turmeric, coconut, chickpeas, jag...	vegetarian	180.0	60.0	sweet	main course	Karnataka	South
85	Dal makhani	Red kidney beans, urad dal, cream, garam masal...	vegetarian	10.0	60.0	sweet	main course	Punjab	North
243	Mishti Chholar Dal	Chana dal, fresh coconut, ginger, cinnamon, ra...	vegetarian	10.0	30.0	sweet	main course	West Bengal	East

In [18]:
```
flav_data = data.flavor_profile.value_counts().reset_index()
flav_data.columns = ['flavor_profile', 'prep_time']
fig = px.bar(flav_data,x='flavor_profile',y='prep_time',title='variety of item according to the flavour',
color_discrete_sequence=['green'])
fig.show()
```


In [19]:
```
cooking_time= data[['cook_time','name']]
```

In [20]:
```
ten_cook_quickly=cooking_time.head(10)
```

In [21]:
```
#cook_data = ten_cook_quickly.cook_time.value_counts().reset_index()
```

In [22]:
```
#cook_data.columns = ['cook_time', 'name']
fig = px.bar(ten_cook_quickly,x='cook_time',y='name',title='dishes based on cooking time',
color_discrete_sequence=['green'])
fig.show()
```


In [23]:
```
data.columns
```

Out[23]:
```
Index(['name', 'ingredients', 'diet', 'prep_time', 'cook_time',
       'flavor_profile', 'course', 'state', 'region'],
      dtype='object')
```

In [24]:
```
cooking_time_longest=cooking_time.sort_values(['cook_time'],ascending=False)
```

In [25]:
```
tencooking_time_longest=cooking_time_longest.head(10)
```

In [ ]:
```

```

In [26]:
```
import matplotlib.pyplot as plt
```

In [27]:
```
y=tencooking_time_longest['cook_time']
x=tencooking_time_longest['name']
plt.plot(x,y)
plt.title('dishes based on cooking time')
plt.show()
```


In [ ]:
```

```