task-4

```python
In [10]:  import numpy as np
          import pandas as pd
          import matplotlib.pyplot as plt
```

```python
In [3]:   exam_data = {'name': ["anastasia", "dima", "katherine", "james", "emily", "mich
                      "score": [12.5, 9, 16.5, np.nan, 9, 20, 14.5, np.nan, 8, 19],
                      "attemps": [1, 3, 2, 3, 2, 3, 1, 1, 2, 1],
                      "quality": ["yes", "no", "yes", "no", "no", "yes", "yes", "no", "no

          labels = ["a", "b", "c", "d", "e", "f", "g", "h", "i", "j"]
```

```python
In [9]:   df = pd.DataFrame(exam_data)
          df.head(3)
```
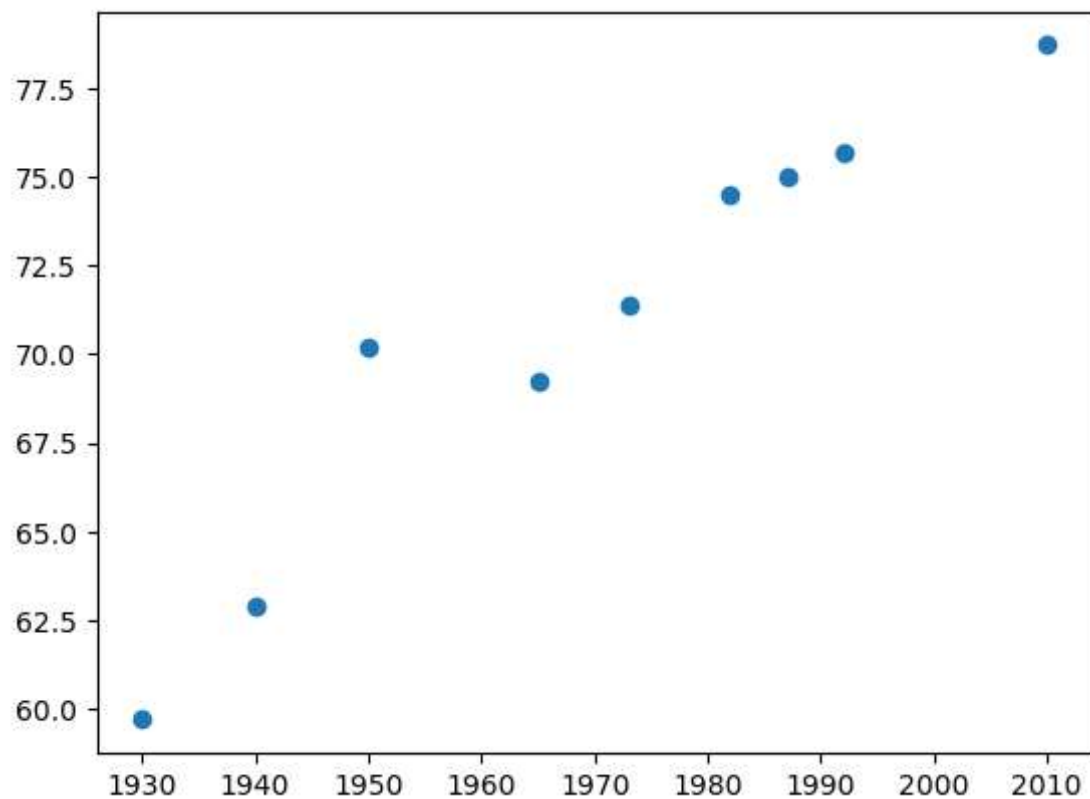
Out[9]:

	name	score	attemps	quality
0	anastasia	12.5	1	yes
1	dima	9.0	3	no
2	katherine	16.5	2	yes

task-2

In [13]:
```python
year = [1930, 1940, 1950, 1965, 1973, 1982, 1987, 1992, 2010]
age = [59.7, 62.9, 70.2, 69.2, 71.4, 74.5, 75, 75.7, 78.7]

#year are independent variable and age is the dependent variable

plt.scatter(year, age);
```
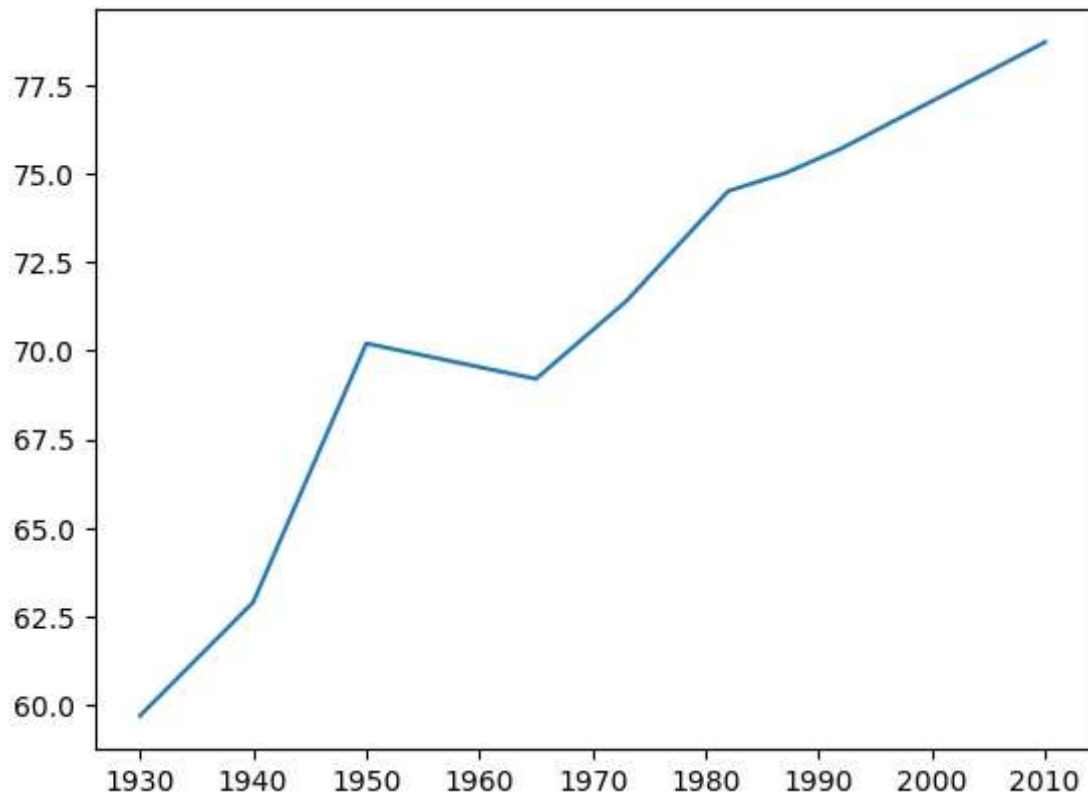
In [14]:
```python
plt.plot(year, age);
```


task-3

In [35]:
```python
dic = {}
#making dictioary
while True:
    roll_number = input("Enter a roll_number or quit to exit: ")
    if roll_number == 'quit':
        break
    name = input("Enter a value: ")
    dic[roll_number] = name
```

```
Enter a roll_number or quit to exit: 20
Enter a value: faiz raza
Enter a roll_number or quit to exit: 33
Enter a value: hanzala
Enter a roll_number or quit to exit: 06
Enter a value: usama
Enter a roll_number or quit to exit: 09
Enter a value: ali
Enter a roll_number or quit to exit: quit
```

In [41]:
```python
#display dic
print(dic)
```

```
{'20': 'faiz raza', '33': 'hanzala', '06': 'usama', '09': 'ali', 23: 'hasee
b'}
```

```
In [43]:  #add new key-value pare
          dic["1"] = "ffff"
          dic
```

```
Out[43]:  {'20': 'raza',
           '33': 'hanzala',
           '06': 'usama',
           '09': 'ali',
           23: 'haseeb',
           '1': 'ffff'}
```

```
In [51]:  #delete key-value pair
          del(dic["20"])
          dic
```

```
Out[51]:  {'33': 'hanzala', '06': 'usama', '09': 'ali', 23: 'haseeb', '1': 'ffff'}
```

```
In [42]:  #modify the name of student
          dic["20"] = "raza"
          dic
```

```
Out[42]:  {'20': 'raza', '33': 'hanzala', '06': 'usama', '09': 'ali', 23: 'haseeb'}
```

task-1

```
In [57]:  lent = 5
          for i in range(1, lent*2):
              if i <= lent:
                  for j in range(1, i+1):
                      print("*", end = " ")
              else:
                  for j in range(1, (lent*2)-i+1):
                      print("*", end = " ")
              print()
```

```
*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*
```

```
In [ ]:
```