1)To solve this guesstimate problem we will break it into several parts to start with

We will assume a Population variable = P(x)

We will assume a Variable for the ratio of the working population (Usually the people who are between 18-65 years of age) = L

We will assume the employed population amongst the total working population since many people can be unemployed in a nation=A(x)

GETTING SOME REAL APPROXIMATIONS:

Before starting a problem, we must have some rough estimates like the population of people in India in 2019,2020,2021.

SETTING SOME ASSUMPTIONS:

We will assume that people who lost their lives in the 2019,2020,2021 would be very less than the people who were born so this makes the deaths almost negligible. We also have to assume the number of working generation and employed people to complete the task.

ROUNDING OFF THE DATA:

The rounding of the data is essential for easy calculation and easy approximation.

PREPARING FORMULAE FOR CALCULATIONS:

E(x1) = ((No of Employed People up to that year) / (Total Number of Population in that year)) \* 100

Firstly, we will estimate the population

P (2019) = 1.37 billion Approx.

P (2020) = 1.38 billion Approx.

P (2021) = 1.40 billion Approx.

Growth of Population from 2019 to 2020 = 10 million

Growth of Population from 2020 to 2021 = 20 million

The estimated growth in Population by the end of 2022 would be 15 million.

P (2022) = 1.415 billion Approx.

The working Population in India according to the census of 2019 was 60%, and we will assume the same for 2022. The ratio of the working population will be 0.6.

Employed Population in 2019, A (2019) = 70% of the working population which makes it 0.7\*0.6\*1.37 billion = 575.4 million.

Due to the pandemic, many people lost their job.

Employed Population in 2020, A (2020) = 60% of the working population which makes it 0.6\*0.6\*1.38 billion = 496.8 million.

Since some of the people got new jobs and new normal was initiated there might be some increment in the employed working population.

Employed Population in 2021, A (2021) = 65% of the working population which makes it 0.65\*0.6\*1.40 billion = 546 million.

By the end of 2022, it can be assumed that 68%-70% of the working population will be employed which is 0.68\*0.6\*1.415 billion to 0.7\*0.6\*1.415 = 577.32 to 594.3 million will be employed.

((577.32\*10^6) / (1.415\*10^9)) = 40.8%

((594.3\*10^6) / (1.415\*10^9)) = 42%

E(x1) = 40.8% to 42%

It might also be said that government imposes restrictions and they can solely withdraw them by leniency so, we can also take a variable as C

It may vary from 0 to 1. With 0 being the most restricted time and 1 being the most relaxation for December 2022 post-pandemic scenario can be assumed if any new variant is not reported we can take 0.7 as an ideal case.

E(x2) = (A(x)\*C) / (P(x)\*r) \* 100

C=0.7, r = 0.6, and A(x) = 577.32 to 594.3 million P(x) = 1.415 as calculated by approximation earlier.

E(x2) = 46.4% to 48.72%

2)"Cisco Systems is an American multinational company”.

In the early 1980s students and staff at Stanford, using technology on the campus that links all of the school's computer systems to talk to one another, creating a box called the "Blue Box" which acts as a multilayer protocol. Due to the underlying architecture, and its ability to scale well, Yeager's well-designed invention became a key to Cisco's early success. On February 16, 1990, Cisco Systems went public with a market capitalization of $224 million and was listed on the NASDAQ stock exchange. On August 28, 1990.

The main reason behind the early success of the CISCO technology was its skillful modeling and market acquisition approach because the service was unique at that time and it gave it an edge over the services which were developed afterward, in addition to this cisco is still growing because of its policies and structured way of working. It was one of the first to sell commercially successful routers supporting multiple network protocols.

The classical, CPU-based architecture of early Cisco devices and the flexibility of system IOS allowed for keeping up with evolving technology needs through frequent software upgrades. The company was quick to capture the emerging service provider environment. Over the past four years, Cisco Systems Inc. has been on a mission: to dominate its data networking market much as I.B.M. did with mainframes and as Intel and Microsoft have done with personal computers. Some popular models of the early time (such as Cisco 2500) managed to stay in production for almost a decade virtually unchanged.

3) Harnessing Solar and Wind Energy will affect Humans and Earth in a long run we can justify it by thinking in 3 orders of thinking firstly, we will see the direct impact of utilizing the solar and wind energy, then we will see its broader perspectives like why it is important and how will it help us in near future, lastly it can be assumed what if we don’t utilize this energy.

First-Order Thinking: First-order thinking is involved in the need to have a technology like this, Renewable Sources of energy like solar and wind energy can be converted into power which may be utilized further to solve many problems, they are harmless to the environment and thus are nature friendly.

Second-Order Thinking: Since many resources like Petroleum and Coal are getting depleted, the current reserves will not be sufficient to meet future needs, as evident in Rajasthan where petrol is not available after 9 p.m., this creates a problem, and Harnessing Solar Power can solve this problem as Solar Cars can be used to replace the current petrol cars. Wind energy can also be converted into electricity using the big windmills and thus can be utilized further.

Third-Order Thinking: The major problems of Fuel Pollution will be reduced and this will help mother earth to sustain which is also essential for our survival. In the coming 2-3 decades the world will face a deadly scarcity of Coal and Petrol as the reserves are getting depleted, Coal for cooking purposes in the rural area can be replaced by solar energy, and for heating purposes, in colder regions, same coal can be replaced by electric heaters generated by harnessing wind energy. Solving both environmental and convenience problems.

Policy Resistance: Policy may be legally or illegally revolted against by the industrialist and workers who are employed in Petroleum and crude oil industry.

4) Solving the road accident using AI/ Predicting future road accidents:

Using the first principle analysis.

* Understanding the problem root cause behind the problem: Accidents caused on the road are fatal and take many lives as evident in many journals every 10 of 100000 vehicles experience fatality due to an accident, the majority of accidents occur on the highways and few also occur on the crossings of signals or turns some may also be caused by uneven bending of road and distortion of speed breakers, lastly accident can also occur due to unawareness or slight carelessness of drivers while driving the vehicle.
* To avoid accidents, we can take a Case Study of Jaipur, the capital of Rajasthan, you can take some other examples too, we first have to figure out which areas are crowded, which all areas need proper maintenance of roads what areas have uneven terrain and how are they different from other areas, all this study is important for segmentation and implementation
* In the city of Jaipur, it is well known that Johari Bazaar, Ramganj, Chand pole, Choti Chaupad, Badi Chaupad, Malviya Nagar, and Jhalana are crowded areas. There is a need for a smart traffic alert system and traffic management system since it is a very cumbersome and difficult task to handle traffic by the traffic police.
* Further, the areas like Nahargarh and Jaigarh are tourist attractions that have uneven turns which must be guided by building a movement monitoring sensor and there can be sensors in the crossing and crossroads too, which can blow alarm if the speeds of both cars are likely leading to the collision to prevent fatal accidents.
* Last but not the least Traffic monitoring can be done and can be accompanied by sensors to detect the eye movement of drivers, thereby preventing accidents due to sleeping and slight carelessness of drivers, a sensor can detect the eye movement and if it feels the person is asleep it can ring an alarming call on the phone which is registered with the car.
* Although there are many technologies that are associated with the above point their implementation is not done in a proper manner so it can be implemented and should be tested to prevent any fatalities in the future.