



What The Hack 1.0 : Problem Statement

S. No	Problem	Description	Weightage
1	Coreference Resolution	Replacing personal pronoun with appropriate proper noun	45
2	Natural Language Generation	Generating 2 sentences from given 10 sentences	30
3	Topic Classification	Classifying the text into lowest possible subcategories	25

1. Coreference Resolution

A personal pronoun is a word or form (like 'he','her','she','her','it','its','it's') that substitutes for a noun or noun phrase. Wherever a pronoun is encountered, the corresponding noun should be replaced. *Coreference resolution* is the task of finding all expressions that refer to the same entity in a text.

Example

Input: Harry had looked everywhere for his coat. He finally found it under the sofa.

Output: Harry had looked everywhere for his/Harry's coat. Harry finally found the coat under the sofa.

Test Case 1.1 (Easy)

Input:

A. P. J. Abdul Kalam (15 October 1931 – 27 July 2015), was the 11th President of India from 2002 to 2007. A career scientist turned statesman, Kalam was born and raised in Rameswaram, Tamil Nadu, and studied physics and aerospace engineering. **He** spent the next four decades as a scientist and science administrator, mainly at the Defence Research and Development Organisation (DRDO) and Indian Space Research Organisation (ISRO) and was intimately involved in India's civilian space programme and military missile development efforts. **He** thus came to be known as the Missile Man of India for his work on the development of ballistic missile and launch vehicle technology. **He** also played a pivotal organisational, technical, and political role in India's Pokhran-II nuclear tests in 1998, the first since the original nuclear test by India in 1974.

Output:

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Test Case 1.2 (Moderate)

Input:

At India TV conclave Chunav Manch, Amit Shah said: "Jay has filed a criminal defamation case of Rs 100 crore because he is doing business legally. It doesn't matter what Rahul Gandhi says." **He** challenged Gandhi to file criminal defamation case over allegations on him and his family. "Several allegations were made against **him and his** family. Did they file a single criminal defamation suit? Let **him** file," Shah said, alleging that they did not do so because the charges were true. "Jay has himself gone to court without waiting for demand for inquiry," the BJP chief said.

Output:

At India TV conclave Chunav Manch, Amit Shah said: "Jay has filed a criminal defamation case of Rs 100 crore because he is doing business legally. It doesn't matter what Rahul Gandhi says." **Amit Shah** challenged Gandhi to file criminal defamation case over allegations on him and his family. "Several allegations were made against **Amit Shah** and his family. Did they file a single criminal defamation suit? Let **Rahul Gandhi** file," Shah said, alleging that they did not do so because the charges were true. "Jay has himself gone to court without waiting for demand for inquiry," the BJP chief said.

Test Case 1.3 (Difficult)

Input:

Asserting that **his** son Jay Shah had done nothing wrong in his commodities business, BJP President Amit Shah on Sunday came down heavily on Rahul Gandhi, saying the Congress Vice President did not even know the difference between turnover and profit. "Jay has filed a criminal defamation case of Rs 100 crore because he is doing business legally. It doesn't matter what Rahul Gandhi says. **He** doesn't know difference between turnover and profit," Amit Shah said at a conclave of India TV.

Output:

Asserting that **Amit Shah's** son Jay Shah had done nothing wrong in his commodities business, BJP President Amit Shah on Sunday came down heavily on Rahul Gandhi, saying the Congress Vice President did not even know the difference between turnover and profit. "Jay has filed a criminal defamation case of Rs 100 crore because he is doing business legally. It doesn't matter what Rahul Gandhi says. **Rahul Gandhi** doesn't know difference between turnover and profit," Amit Shah said at a conclave of India TV.

2. Natural Language Generation

10 sentences will be given to you, out of which you should generate two sentences which would best describe the 10 sentences. In the input, quotations and pronouns will already be replaced and a clean text will be provided as an input. The main task is to compress the original text into shorter form which will provide same meaning and information as provided by original text (Abstractive Extraction).

Test Case 2.1 (Moderate)

Input:

Locals walk past a fallen power pole as Hurricane Irma moves off northern coast of Dominican Republic. Winds dipped on Thursday to 175 mph as the Irma soaked the northern coasts of the Dominican Republic and Haiti and brought hurricane-force wind to the Turks and Caicos Islands. It remained an extremely dangerous Category 5 storm, the highest designation by the National Hurricane Center (NHC). Irma was about 40 miles south of Turks and Caicos and is expected to reach the Bahamas later Thursday, before moving to Cuba and plowing into southern Florida as a very powerful Category 4 on Sunday, with storm surges and flooding due to begin within the next 48 hours. It was the first time the Turks and Caicos islands had experienced a Category 5 storm, said Virginia Clerveaux, director of Disaster Management and Emergencies. We are expecting inundation from both rainfall as well as storm surge. In the US Virgin islands, four people died, a government spokesman said, and a major hospital was badly damaged by the wind. A US amphibious assault ship arrived in the US Virgin Islands on Thursday and sent helicopters for medical evacuations from the destroyed hospital. Barbuda, where one person died, was reduced "to rubble", according to Prime Minister Gaston Browne. In the British overseas territory of Anguilla another person was killed, while the hospital and airport, power and phone services were damaged, emergency service officials said.

Output:

Hurricane Irma the dangerous storm designated by the National Hurricane Center (NHC) has terrified many locals of Turks and Caicos Islands. Many were killed and many are still suffering due to by the monstrous Hurricane Irma.

Test Case 2.2 (Difficult)

Input:

If you are working out to lose weight and build muscles, you need to pay attention to your body's requirement of essential nutrients and vitamins. The purpose of your workout is to burn fat and build strong muscles. For that, you need to take care of the nutrients you get from your diet and through health supplements. Here are a few nutrients that are essential for your body to stay in good shape:

- Calcium: It's not only required for strong bones and teeth, but it is also vital for muscle contraction and energy metabolism.
- Vitamin C: This powerful antioxidant helps metabolise carbs for energy and also protects the body from exercise-induced oxidative stress.
- Glucomannan: Glucomannan is a fibre which helps in weight loss.
- Licorice Extract: Studies show that people with cholesterol problem managed to substantially reduce their LDL, or bad cholesterol after taking Licorice root extracts for just a month.
- Vitamin B12: Vitamin B12 ensures that the brain and muscles communicate efficiently, which improves muscle growth and co-ordination.
- Magnesium: It is a vital mineral needed by muscles, soft tissues and body fluids.
- Iron: Iron is a mineral that's vital to our health.

Output:

In the process of losing weight, it is important to look after the body's requirement as its purpose is to burn fat. The main nutrients required to keep the body in shape are Calcium, Vitamin C, Glucomannan, Licorice Extract, Vitamin B12, Magnesium and Iron.

3. Topic classification

Classify the given text into all the lowest possible subcategories of topics

You may find topic hierarchy from this API: <https://www.awesummlly.com/api/subcategories/india/root/>

Test Case 3.1 (Easy)

Input:

Grandmaster and former Asian champion S P Sethuraman has knocked out former FIDE champion Ruslan Ponomarev of Ukraine in a big first round upset at the Chess World Cup in Tbilisi. After drawing the first game as black, Sethuraman was a man on a mission and played some fine attacking chess to find the higher ranked Ukrainian on the wrong foot.

The victory gave Sethuraman an entry in to the second round of this knockout event that double up as part of the next world championship cycle.

Five times world champion Viswanathan Anand made it to the second round but not without fumbling a little. Up against Malaysia's International Master Li Tian Yeoh, Anand started the second game with a one point lead but some lacklustre play in the middle game saw the tide go against the Indian ace.

However, Yeoh failed to make most of his chances and though he had an extra pawn, Anand came back to draw the game and win the mini-match by a 1.5-0.5 margin.

Vidit Gujrathi, who recently became only the fourth Indian ever after Anand, K Sasikiran and P Harikrishna to enter the 2700 ELO rating club, made his black pieces count as he scored a fine victory over N Delgado Ramirez of Paraguay to also win by 1.5-0.5 margin and secure passage to the round of 64 in this 128-player event.

There was more good news from Indian perspective as P Harikrishna bounced back against Vidal Gonzales of Cuba to level score after a first round defeat. Hari will now play the tiebreak games of shorter duration to decide the winner in this contest.

Young Grandmaster Murali Karthikeyan also scored a big victory over Francisco Vallejo Pons of Spain to reach the tiebreak while B Adhiban will be the other Indian who will also decide his fate in the tiebreak games.

Adhiban played his second draw on the trot with Nguyen Ngoc Truong Son of Vietnam.

Grandmaster Deep Sengupta is the only Indian as yet to bow out in the first round after he suffered a loss at the hands of Wang Hao of China.

Meanwhile, after a surprise decision to play in the World Cup as a world champion, Magnus Carlsen of Norway had an easy passage to the next round disposing off O Balogun of Nigeria.

The biggest upset was recorded by Alexander Lenderman of United States who ousted highly regarded Ukrainian Pavel Eljanov 2-0.

Each round in the World Cup consists of two classical games except the final that has four games. Each player plays one game with white and one with black in normal time control and in case of a tied result, rapid, blitz and a final Armageddon games is played to determine the winner. The total prize fund is USD 1.6 million with the first prize of USD 120,000.

Besides, the top two finishers will qualify for the 2018 Candidates' Tournament.

Important and Indian results after round 1 game 2 (Indians unless stated): Li Tian Yeoh (Mal) lost to V Anand 0.5-1.5; Magnus Carlsen (Nor) beat O Balogun (Nig) 2-0; Alexei Dreev (Rus) beat Axel Bachmann (Par) 2-0; A Fier (Bra) drew with Etienne Bacrot (Fra) 1-1 goes to tiebreak; IM Khusenkhojaev (Taj) lost to Maxiem Vachier-Lagrave (Fra); Pavel Eljanov (Ukr) lost to Alexander Lenderman (Usa) 0-2; Dai Changren lost to Vladimir Kramnik (Rus) 0.5-1.5; Anish Giri (Ned) beat Nana Dzagnidze (Geo) 1.5-0.5; Vidal Gonzalez (Cub) drew with P Harikrishna 1-1, goes to tiebreak; Ruslan Ponomarev (Ukr) lost to S P Sethuraman 0.5-1.5; Levon Aronian(Arm) beat Daniel Cawdery (Rsa) 2-0; Kacper Piorun (Pol) lost to Yifan Hou (Chn) 0.5-1.5; Francisco Vallejo Pons (Esp) drew with Murali Karthikeyan 1-1, goes to tiebreak; Nguyen Ngoc Truong Son (Vie) drew with B Adhiban 1-1, goes to tiebreak; Deep Sengupta lost to Wang Hao (Chn) 0.5-1.5; Vidit Gujrathi beat N Delgado Ramirez (Par).

Output:

Sports

Test Case 3.2 (Moderate)

Input:

It is official. Singer-musician Adnan Sami will make his acting debut in the role of an Afghani musician in Radhika Rao's Afghan - In Search Of A Home. Adnan Sami had tweeted the first look with the caption "I need ur blessings for #AfghanTheFilm."

The first look has Adnan in a bearded and yellow turbaned avatar as an Afghani musician. The film is co-directed by Radhika Rao and Vinay Sapru and is said to be an intense drama with emotional and musical elements. According to the report, the film tracks the story of a musician who flees his country Afghanistan and seeks refuge elsewhere, dealing with the pressures and neglect of music and arts.

In an interview to PTI, director Radhika Rao said, "He (Adnan) is a royalty from Afghanistan and even his forefathers are from there. We were discussing what happens to the war zone countries in terms of their art, culture. Places like Afghanistan, Iraq, Iran, Libya and Syria are culturally rich countries. What usually happens in war zone countries is museums are locked, films are not being allowed to be made. So, there is no art and culture." She added, "The story is about a musician from Afghanistan and what happens to his journey in finding his home. It is a heart- wrenching tale of an artiste."

The singer himself had sought Indian citizenship over persecution in his country of birth. In 2015, he was granted Indian citizenship citing humanitarian grounds. Previously, Adnan Sami had done a cameo as a qawwal in Salman Khan's blockbuster Bajrangi Bhaijaan, in the song 'Bhar Do Jholi Meri', sung by him. Afghan – In Search Of A Home will also see Adnan filling in the shoes of the film's music composer.

The film will begin go on floors in February next year and follow a straight 60-day schedule. The makers of the film are delighted with the support of the government of Afghanistan for the film. "The counsel general fondly remembers Amitabh Bachchan for shooting of Khuda Gawah in Afghanistan. They are happy we will shoot there. They are extending their hospitality to us," said Vinay Sapru to PTI.

Output:

Celebrities & Entertainment News
Bollywood & South Asian Film
Movie Reference
Movie Reviews & Previews inside Movie Reference
Entertainment Industry
Film & TV Industry inside Entertainment Industry
Film & TV Production inside Film & TV Industry
Movies

Test Case 3.3 (Difficult)

Input:

The Gandhinagar police has filed charges against Patidar leader Hardik Patel and six others for disturbing peace and breaking the law by holding a rally at Mansa despite not being given permission.

Gandhinagar Superintendent of Police (DSP), Virendra Singh Yadav told the media: "We have filed charges against Hardik Patel, Dharmesh Patel, the proprietor of Umiya decorators who was the organizer of the rally at Mansa, and five others for holding the rally despite the district administration not giving them permission."

"We will be acting against the persons involved in the violation of law," the Gandhinagar SP added.

The police has filed charges against Hardik Patel and the others under the Indian Penal Code clause 188, for disobeying the administrative order.

The Patidar Anamat Andolan Samiti (PAAS) leader has been holding protest rallies across the state for the past two years, including at many places without the government or the local authorities granting permission. Till date, neither Hardik Patel nor his aides or other members have been charged on that account.

The PAAS group had convened a mega rally on Saturday at Mansa, the native village of BJP national president Amit Shah, as part of a series of protest rallies against the state's ruling BJP. Before the rally, Hardik Patel had indicated he would "drop a big bomb" in the form of some revealing news that would shake the BJP, but he failed to do so.

Ignoring the police warning, he and his supporters carried out a massive rally in the chilly wintry night on Saturday.

"The police action will only come after the elections are over. The state government cannot dare to lay their hands on Hardik, as it would adversely affect them in the elections. As soon as the elections are over, they will carry out the necessary action," said a political observer.

The Election Commission of India (ECI) is also keeping a close watch on the speeches of Hardik Patel and also video recording his public meetings. The EC will initiate action if they find it violating the Model Code of Conduct (MCC). The Chief Electoral Officer (CEO), Gujarat, BB Swain said, "We will also be monitoring the money spent on Hardik's rallies where he is joined by any political party candidate."

Output:

Legal
Legal Services inside Legal
Public Safety
Police inside Public Safety
Government
Election inside Government