Solver: Wilbert

1) Overall, it is based on the values of competence and credibility. The following are the topics or issues that Computer Engineering Codes of Ethics should cover:

1. **Repositories and processors of information**
    - Unauthorized use of computer services or information.
    - Questions of appropriateness or fairness.
2. **Producers of new forms and types of assets**
    - For example, computer programs are entirely new types of assets, possibly not subject to the same concepts of ownership as other assets.
3. **Instruments of acts**
    - Degree to which computer services and users of computers, data, and programs responsible for integrity and appropriateness of computer output.
4. **Symbols of intimidation and deception**
    - Computers as thinking machines, absolute truth. Producers - infallible, subject to blame - replacement of humans who err.
5. **Social responsibility** to employer and society itself.
6. **Intellectual property issues**
    - Copyrights, program ownership, patents, trademarks, trade secrets, etc.
7. **Confidentiality and secrecy**
    - Protection of privacy, professional secrets, material secrets, etc.
8. **Security questions**
    - Protection against fraud, abuse, and the question of the security of data.

Specific to IT/data:

9. **Stop data misuse**. Personal information obtained for one purpose should not be used for another purpose without informed consent.
10. **Encourage data minimization**. Collect only information necessary for a particular purpose. Dispose of identifiable information where possible.
11. **Promote data integrity**. Ensure accuracy, reliability, completeness, timeliness, of information.
12. **Allow data inspection**. Notify record subjects about record-keeping practices and data use.
13. **Establish privacy policies**. Establish and enforce information privacy policy.

2) The 5 political hot potatoes that will continue to be political hot potatoes in 2018:

1. **Looming Tax Hikes**
    - Public debate over government spending was stirred in November 2017 after PM Lee Hsien Loong signaled an impending tax hike.
    - Investments and social spending are costly, meaning raising taxes is not a matter of whether, but a matter of when.
    - Some analysts have suggested that the GST (currently 7%) could be raised to 8 to 10 percent.

- The government does not take decisions on tax increases lightly, because such hikes come with a very high political cost. Raising taxes means the reason behind it is stronger than the political cost.
- People may call on the government to be more transparent about how much money is exactly needed to prevent a deficit in future budgets.
- Providing a longer runway before any hike is implemented would help prepare those who are affected.

2. **Uncertainty over the Fourth PM**
    - As the nation approaches the midpoint of the current term of government, speculation is rife as to who is set to take the reins from PM Lee Hsien Loong as Singapore's fourth PM.
    - There are 3 clear contenders: Finance Minister Heng Swee Keat, Minister in the PM's Office Chan Chun Sing and Minister for Education (Higher Education and Skills) Ong Ye Kung.
    - Political stability has been the hallmark of Singapore and smooth leadership succession has instilled confidence among Singaporeans and other countries around the world, which is important for Singapore's economic and social stability.
    - The new PM must also gain the trust and confidence of the people.

3. **Some Unhappiness over the Reserved Election**
    - Mdm Halimah Yacob was sworn in as Singapore's president on Sep 14, 2017 and she became Singapore's first female president.
    - However, many people expressed their unhappiness over the election as this year's election was the first to be reserved for Malay candidates following changes passed by the Parliament last year to reflect Singapore's multicultural society.
    - Mdm Halimah was the only candidate who qualified for the election and she won the election in a walkover.
    - Hashtags such as #notmypresident were used in online discussions and a silent protest was held at Hong Lim Park.

4. **MRT Reliability Issues**
    - MRT disruptions in 2017 have caused disruption to people's lives, e.g. students being late for school and workers being late for work.
    - In October 2017, a poorly maintained pump system resulted in flood waters up to waist deep that shut down a large segment of the North-South Line until the next day, affecting >200,000 commuters.
    - A month later, 2 trains on the East-West Line collided at Joo Koon MRT station, injuring 38 people.
    - There were serious questions raised about the work culture and internal accountability in the company. If these issues are not resolved, they can have wider implications on how Singaporeans view the government's ability to keep the country running smoothly and efficiently.

- These incidents do not only irritate Singaporeans, but they also have the potential to impact work, the economy (especially tourism), as well as tarnishing the Singapore brand.

5. **Water Price Hike**
    - Singapore's first water price hike in 17 years was hotly debated after it was announced in the Budget in February 2017.
    - After an increase on 1 July 2017 and a second increase on 1 July 2018, water prices will be 30% higher. The government said the increase is necessary due to rising costs and for investments in water infrastructure for production and sewerage.
    - The water price increase is a big issue to households and industries because water is an indispensable necessity, hurting the low-income families even more if the GST also increases.
    - Schemes were implemented by PUB to help families cope with the increase in water price through conservation of water and reducing water wastage.
    - Unlikely to be a political hot potato on its own in 2018, but it is closely related to issues such as rising cost of living and social inequality.

3) The five-year National Cyber Security Masterplan 2018 developed by IMDA aims to engender a secure and resilient infocomm environment and a vibrant cybersecurity ecosystem, allowing Singapore to become a trusted and robust infocomm hub. There are 3 key areas:

1. **Enhancing the security and resilience of critical infocomm infrastructure**
    - The government will work closely with critical sectors to carry out cybersecurity exercises and assess high-priority critical infrastructure for vulnerabilities and to ensure that security capabilities and measures are in place to mitigate cyber threats.
    - The enhanced Cyber Watch Centre (CWC) will provide a wider range of detection capabilities for government agencies with improved correlation capabilities.
    - The enhanced Threat Analysis Centre (TAC) will be able to assess larger volume of data from a wider of sources and to identify cyber threats with greater accuracy and efficiency.

2. **Promote the adoption of appropriate infocomm security measures among users and businesses**
    - The Cyber Security Awareness and Outreach programme will augment existing outreach channels through online and social media platforms, educational talks, road shows, seminars and print advertorials.
    - The masterplan will also include efforts to facilitate information sharing between government and private sector as well as enhancing collaboration with industry and trade associations to promote cybersecurity and exchange threat information.

3. **Grow Singapore's pool of infocomm security experts**

- Develop human and intellectual capital within the infocomm industry to boost cybersecurity in Singapore.
- Work with institutes of higher learning to incorporate cybersecurity into their curriculum or explore the provision of specialist track in the current degree programmes.
- Develop cyber training facilities for testing and training of cybersecurity experts.

4) The four primary technology domains and their Strategic Goals under RIE 2020 Plan:

1. **Advanced Manufacturing and Engineering**
    - To support economic growth, create good jobs for Singaporeans and prepare our economy for the future.
    - To strengthen linkages across public research performers and both large and small enterprises to sharpen value creation from public R&D investments.
    - To build capabilities where Singapore can offer a differentiated value proposition, including making strategic bets ahead of industry to position Singapore for emerging opportunities.
    - Manufacturing is a key pillar of Singapore's economy. It contributed to 20% of Singapore's GDP and employed >500,000 people in 2015.
    - Manufacturing sector is facing increasing external competitive pressures and internal factor constraints, but these will be balanced by opportunities presented by the growth of ASEAN and Asia in both production capacity and consumption needs.
    - Against this backdrop, R&D and technology play key roles in strengthening Singapore's existing manufacturing sectors, seeding new growth niches and boosting productivity.

2. **Health and Biomedical Sciences**
    - To develop an ecosystem that better enables translation of research into improved health outcomes to contain healthcare costs as well as to transform and enhance the efficiency of health services delivery.
    - 5 therapeutic areas of focus identified by MOH: (i) cancers, (ii) cardiovascular diseases, (iii) diabetes mellitus and other metabolic / endocrine conditions, (iv) infectious diseases and (v) neurological and sense disorders.
    - To create pathways to translate research discoveries into healthcare solutions, innovative medicines or medical devices to create value for economic growth and enable a sustainable healthcare system.
    - Singapore's HBMS industry cluster will be developed into a vibrant ecosystem comprising multinational corporations, local enterprises and start-ups from various healthcare-related industries including food & nutrition and personal care industries.

3. **Services and Digital Economy**
    - Digital innovation will be used to meet national priorities and enhance productivity in our services sector.
    - 3 focus areas:
        i. Urban Mobility

The fusion of traditional transport engineering with autonomous technology, real-time analytics, modelling and simulation will transform how people plan routes and manage real-time traffic.

ii. Healthcare ICT
Predictive analytics and machine learning will allow healthcare to be delivered in ways that empower our seniors to enjoy active and confident ageing.

iii. Services Productivity
Automation of knowledge work, data mining and digital applications can be tapped to improve the delivery of government and private sector services.

- To support R&D activities that encourage future-oriented MNCs in the ICT sector to grow their presence in Singapore and create good jobs.
- To facilitate strong partnerships with, and between, large local enterprises (LLEs), SMEs and innovative start-ups to rapidly incorporate innovative technologies into their products and services.

4. **Urban Solutions and Sustainability**
    - To create a vibrant and endearing city which every Singapore is proud to call home by improving our built and natural environment to offer higher quality of life for all Singaporeans despite resource constraints and climate change issues.
    - Includes devising new urban mobility solutions, creating and optimizing livable space, building the next generation smart grid and lowering energy consumption.
    - USS agencies will collaborate with industry partners to create economic value and establish Singapore as an international hub for sustainable urban solutions via equity co-investment schemes and R&D promotion.
    - E.g. the Separation Technologies Applied Research and Translation (START) Centre for water technologies will serve to accelerate the translation of R&D into commercial use and greater industry adoption.

--End of Answers--