Editorial

Tuesday, April 9, 2019

The great escape

To the utter disbelief and consternation of many in the state, arguably the highest level of 'Captive politics' if one may use the term- was witnessed being practiced by the Biren-led ruling state government during the Rally held at Hapta Kangjeibung Day before yesterday. The scene unfolding during the late afternoon inside the compound where Prime Minister Narendra Modi was canvassing for his second term can only be described as controlled chaos to put it mildly. While it is a certainty that the state machinery and its think-tanks would have constructed their best possible explanation, no amount of justification or diversionary tactics will ever be able to cut ice with the public. The picture of a large number of 'supporters', mostly women clambering to come out of the compound through the gate which was kept shut from outside and manned by the security forces on the outside visibly trying to prevent those from inside from making an exit tells its own story. That a few of these women risked their lives by climbing the high iron gates in order to escape the fenced compound bears testimony to a grand scheme gone awry.

Given that politics is a game of numbers, it is not theatrical gestures or megalomanic oration that will retain the trust of the public. Politics of religion, hatred or coercion will only work so long. Fear has its limit and one who is pushed with the back against the wall will have no other option but to use the fear to come forward fighting with everything one has. This fact applies to a collective group or region as well and it would do well for those in power to recognize and remind themselves of this at all times. It is no secret that there are various jokes doing the rounds in the state regarding the alacrity with which the present Chief Minister reacts to any criticism to his personal self or his functioning. To a true leader of the people, such criticisms should be taken as an indicator of the perception of the public towards the temperament of the leader and not a personal affront. While money still opens many doors when it comes to influencing voting decisions, the palpable shift in social behavior and outlook of many a common man towards a more transparent, stable and tolerant party with a leader who walks the talk should be noted and given due importance.

The biggest concern emerging with the various reports of the hidden motives and undeclared agenda behind the plethora of schemes and programs launched with more than the necessary fanfare and publicity ostensibly to benefit the common man and bring about social and economic benefits is the continuing relevancy of the present ruling party in affecting the desired changes increasingly needed by the common man without considerations for favours or faith- a vital point especially in the state as well as the North Eastern part of the country where respect and regard for another faith and belief is relatively high and more tolerant.

Bottomline is- instead of importing and implementing coercive and often vindictive means of making the public toe the line, a more liberal, participative and transparent governance will enable any political party to win the heart and hand of the common people. If the present state government believes it is up to the challenge, it should reign in and take strict measures to ensure insurgent groups like KNA who are reportedly threatening a number of villages with violence and unwanted consequences if the BJP candidate for the outer parliamentary constitution receives less than 90 percent of votes does not meddle in a free and fair election, to start with. Else the people of Manipur and the rest of the NorthEast region as a whole might very well adopt the stand of the people of Mizoram.

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The secret history of women in coding

computer programming once had much better gender balance than it does today. what went wrong?

Courtesy The Wire
By : Clive Thompson

as a teenager in maryland in the 1950s, mary allen wilkes had no plans to become a software pioneer — she dreamed of being a litigator. one day in junior high in 1950, though, her geography teacher surprised her with a comment: "mary allen, when you grow up, you should be a computer programmer!" wilkes had no idea what a programmer was; she wasn't even sure what a computer was. relatively few americans were. the first digital computers had been built barely a decade earlier at universities and in government labs. by the time she was graduating from wellesley college in 1959, she knew her legal ambitions were out of reach. her mentors all told her the same thing: don't even bother applying to law school. "they said: 'don't do it. you may not get in. or if you get in, you may not get out. and if you get out, you won't get a job,' " she recalls. if she lucked out and got hired, it wouldn't be to argue cases in front of a judge. more likely, she would be a law librarian, a legal secretary, someone processing trusts and estates.

but wilkes remembered her junior high school teacher's suggestion. in college, she heard that computers were supposed to be the key to the future. she knew that the massachusetts institute of technology had a few of them. so on the day of her graduation, she had her parents drive her over to m.i.t. and marched into the school's employment office. "do you have any jobs for computer programmers?" she asked. they did, and they hired her.

it might seem strange now that they were happy to take on a random applicant with absolutely no experience in computer programming. but in those days, almost nobody had any experience writing code. the discipline did not yet really exist; there were vanishingly few college courses in it, and no majors. (stanford, for example, didn't create a computer-science department until 1965.) so instead, institutions that needed programmers just used aptitude tests to evaluate applicants' ability to think logically. wilkes happened to have some intellectual preparation: as a philosophy major, she had studied symbolic logic, which can involve creating arguments and inferences by stringing together and/or statements in a way that resembles coding.

wilkes quickly became a programming whiz. she first worked on the ibm 704, which required her to write in an abstruse "assembly language." (a typical command might be something like "lxa a, k," telling the computer to take the number in location a of its memory and load it into to the "index register" k.) even getting the program into the ibm 704 was a laborious affair. there were no keyboards or screens; wilkes had to write a program on paper and give it to a typist, who translated each command into holes on a punch card. she would carry boxes of commands to an "operator," who then fed a stack of such cards into a reader. the computer executed the program and produced results, typed out on a printer.

often enough, wilkes's code didn't produce the result she wanted. so she had to pore over her lines of code, trying to deduce her mistake, stepping through each line in her head and envisioning how the machine would execute it — turning her mind, as it were, into the computer. then she would rewrite the program. the capacity of most computers at the time was quite limited; the ibm 704 could handle only about 4,000 "words" of code in its memory. a good programmer was concise and elegant and never wasted a word. they were poets of bits. "it was like working logic puzzles — big, complicated logic puzzles," wilkes says. "i still have a very picky, precise mind, to a fault. i notice pictures that are crooked on the wall."

what sort of person possesses that kind of mentality? back then, it was assumed to be women. they had already played a foundational role in the prehistory of computing: during world war ii, women operated some of the first computational machines used for code-breaking at bletchley park in britain. in the united states, by 1960, according to government statistics, more than one in four programmers were women. at m.i.t.'s lincoln labs in the 1960s, where wilkes worked, she recalls that most of those the government categorized as "career programmers" were female. it wasn't high-status work — yet.

in 1961, wilkes was assigned to a prominent new project, the creation of the linc. as one of the world's first interactive personal computers, it would be a breakthrough device that could fit in a single office or lab. it would even have its own keyboard and screen, so it could be programmed more quickly, without awkward punch cards or printouts. the designers, who knew they could make the hardware, needed wilkes to help write the software that would let a user control the computer in real time.

for two and a half years, she and a team toiled away at flow charts, pondering how the circuitry functioned, how to let people communicate with it. "we worked all these crazy hours; we ate all kinds of terrible food," she says. there was sexism, yes, especially in the disparity between how men and women were paid and promoted, but wilkes enjoyed the relative comity that existed among the men and women at lincoln labs, the sense of being among intellectual peers. "we were a bunch of nerds," wilkes says dryly. "we were a bunch of geeks. we dressed like geeks. i was completely accepted by the men in my group." when they got an early prototype of the linc working, it solved a fiendish data-processing problem for a biologist, who was so excited that he danced a happy jig around the machine.

in late 1964, after wilkes returned from traveling around the world for a year, she was asked to finish writing the linc's operating system. but the lab had been relocated to st. louis, and she had no desire to move there. instead, a linc was shipped to her parents' house in baltimore. looming in the front hall near the foot of the stairs, a tall cabinet of whirring magnetic tapes across from a refrigerator-size box full of circuitry, it was an early glimpse of a sci-fi future: wilkes was one of the first people on the planet to have a personal computer in her home. (her father, an episcopal clergyman, was thrilled. "he bragged about it," she says. "he would tell anybody who would listen, 'i bet you don't have a computer in your living room.'

") before long, linc users around the world were using her code to program medical analyses and even create a chatbot that interviewed patients about their symptoms.

but even as wilkes established herself as a programmer, she still craved a life as a lawyer. "i also really finally got to the point where i said, 'i don't think i want to do this for the rest of my life,' " she says. computers were intellectually stimulating but socially isolating. in 1972, she applied and got in to harvard law school, and after graduating, she spent the next four decades as a lawyer. "i absolutely loved it," she says.

today wilkes is retired and lives in cambridge, mass. white-haired at 81, she still has the precise mannerisms and the ready, beaming smile that can be seen in photos from the '60s, when she posed, grinning, beside the linc. she told me that she occasionally gives talks to young students studying computer science. but the industry they're heading into is, astonishingly, less populated with women — and by many accounts less welcoming to them — than it was in wilkes's day. in 1960, when she started working at m.i.t., the proportion of women in computing and mathematical professions (which are grouped together in federal government data) was 27 percent. it reached 35 percent in 1990. but, in the government's published figures, that was the peak. the numbers fell after that, and by 2013, women were down to 26 percent — below their share in 1960.

when wilkes talks to today's young coders, they are often shocked to learn that women were among the field's earliest, towering innovators and once a common sight in corporate america. "their mouths are agape," wilkes says. "they have absolutely no idea."

[why is it so hard to make a website for the government? read about the woman who founded code for america.]

almost 200 years ago, the first person to be what we would now call a coder was, in fact, a woman: lady ada lovelace. as a young mathematician in england in 1833, she met charles babbage, an inventor who was struggling to design what he called the analytical engine, which would be made of metal gears and able to execute if/then commands and store information in memory. enthralled, lovelace grasped the enormous potential of a device like this. a computer that could modify its own instructions and memory could be far more than a rote calculator, she realized. to prove it, lovelace wrote what is often regarded as the first computer program in history, an algorithm with which the analytical engine would calculate the bernoulli sequence of numbers. (she wasn't shy about her accomplishments: "that *brain* of mine is something more than merely *mortal*; as time will show," she once wrote.) but babbage never managed to build his computer, and lovelace, who died of cancer at 36, never saw her code executed.

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when digital computers finally became a practical reality in the 1940s, women were again pioneers in writing software for the machines. at the time, men in the computing industry regarded writing code as a secondary, less interesting task. the real glory lay in making the hardware. software? "that term hadn't yet been invented," says jennifer s. light, a professor at m.i.t. who studies the history of science and technology. this dynamic was at work in the development of the first programmable digital computer in the united states, the electronic numerical integrator and computer, or eniac, during the 1940s. funded by the military, the thing was a behemoth, weighing more than 30 tons and including 17,468 vacuum tubes. merely getting it to work was seen as the heroic, manly engineering feat. in contrast, programming it seemed menial, even secretarial. women had long been employed in the scut work of doing calculations. in the years leading up to the eniac, many companies bought huge electronic tabulating machines — quite useful for tallying up payroll, say — from companies like ibm; women frequently worked as the punch-card operators for these overgrown calculators. when the time came to hire technicians to write instructions for the eniac, it made sense, to the men in charge, to pick an all-female team: kathleen mcnulty, jean jennings, betty snyder, marlyn wescoff, frances bilas and ruth lichterman. the men would figure out what they wanted eniac to do; the women "programmed" it to execute the instructions.

"we could diagnose troubles almost down to the individual vacuum tube," jennings later told an interviewer for the ieee annals of the history of computing. jennings, who grew up as the tomboy daughter of low-income parents near a missouri community of 104 people, studied math at college. "since we knew both the application and the machine, we learned to diagnose troubles as well as, if not better than, the engineer." the eniac women were among the first coders to discover that software never works right the first time — and that a programmer's main work, really, is to find and fix the bugs. their innovations included some of software's core concepts. betty snyder realized that if you wanted to debug a program that wasn't running correctly, it would help to have a "break point," a moment when you could stop a program midway through its run. to this day, break points are a key part of the debugging process.

in 1946, eniac's creators wanted to show off the computer to a group of leaders in science, technology and the military. they asked jennings and snyder to write a program that calculated missile trajectories. after weeks of intense effort, they and their team had a working program, except for one glitch: it was supposed to stop when the missile landed, but for some reason it kept running. the night before the demo, snyder suddenly intuited the problem. she went to work early the next day, flipped a single switch inside the eniac and eliminated the bug. "betty could do more logical reasoning while she was asleep than most people can do awake," jennings later said. nonetheless, the women got little credit for their work. at that first official demonstration to show off eniac, the male project managers didn't mention, much less introduce, the women.

after the war, as coding jobs spread from the military into the private sector, women remained in the coding vanguard, doing some of the highest-profile work. the pioneering programmer grace hopper is frequently credited with creating the first "compiler," a program that lets users create programming languages that more closely resemble regular written words: a coder could thus write the english-like code, and the compiler would do the hard work of turning it into ones and zeros for the computer. hopper also developed the "flowmatic" language for nontechnical businesspeople. later, she advised the team that created the cobol language, which became widely used by corporations. another programmer from the team, jean e. sammet, continued to be influential in the language's development for decades. fran allen was so expert in optimizing fortran, a popular language for performing scientific calculations, that she became the first female ibm fellow.

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