

code



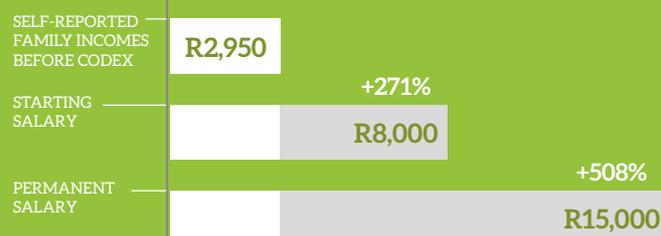
codeX is addressing two of Africa's major challenges: mass youth unemployment, and the software skills shortage.

code



- > Learning to code is one of the fastest paths to a career that will lift a person out of poverty.
- > Coding is a skill that is in critically short supply in South Africa, and Africa as a whole, with thousands of jobs being outsourced overseas.
- > codeX's programme is unique in teaching problem-solving skills, developing entrepreneurship, and supporting personal and professional development and well-being of students from disadvantaged backgrounds.
- > 81% of our students are black.
- > 75% of our coders come from Quintile 1 government schools (catering for the poorest 20% of learners).
- > In our first two years, we have achieved a 75% graduation success rate (substantially higher than that of South African universities, with only 45%–50% graduation rate, according to the reports from UNISA and the Department of Higher Education and Training).

SALARY ANALYSIS MEDIAN



WHO WE ARE

codeX is a SETA-accredited coding academy based in Cape Town.

We find, train and place world-class entry-level software developers to fuel Africa's growing digital economy. Our intensive one-year course enables coders to start working as entry-level software developers.

We are a for-profit company, with a socially responsible goal (a for-profit social enterprise). Companies who sponsor us are eligible for s18a certificates through the Click Foundation.

Our coders come from various education and work backgrounds, ranging from matriculants to career changers with over 10 years of work experience. We have a specific focus on reaching traditionally excluded candidates. As of September 2016, 79% of our coders are historically disadvantaged and 38% are women. We seek partnerships with corporates that will allow us to offer disadvantaged students tuition and professional development training, as well as a stipend for transport and living costs.

77% of our graduates were employed in the IT industry within six months of completing their one-year course (compared with 73% of South African university graduates who completed a four-year degree). Another 6% of our graduates continued with further studies.

On average, our graduates start with salaries of R8 000, which usually grow to R15 000 after being employed full-time for six months. Average salaries for 20-year olds in employment are R4 900.



WHAT MAKES US DIFFERENT

BRIDGING THE DIGITAL DIVIDE

codeX sets out to bridge the digital divide by changing the way we approach training. Traditionally, software training has only been available to those with the highest quality education. This in turn is almost exclusively accessible only to candidates from affluent backgrounds, which predominantly excludes people from disadvantaged backgrounds with talent and potential.

PROBLEM-SOLVING

We emphasise problem-solving over getting the 'right' answer, the practical over the theoretical, broad conceptual understanding over language-specific idiosyncrasies, and collaboration over competition.

OUR UNIQUE ONE-YEAR COURSE

Our holistic curriculum integrates critical software skills into real projects from day one. We are highly focused on Agile development principles and practices. Apart from technical skills, our coders also learn to think about building the best product for the market in the most efficient, collaborative way.



We aim to make codeX synonymous with highly skilled, productive technical talent across Africa and beyond.

Once they have completed the programme, our coders are full-stack agile web developers and typically fall into one of these three groups:

- **Advanced novice:** the basics of full-stack development are in place, they are ready to join an internship / graduate programme that will shape their future career (average salary: R8 000–R12 000 p/m).
- **Junior developer:** they have a thorough end-to-end understanding, and are ready to work within a product team (average salary: R10 000–R25 000 p/m).
- **Career changer:** combining their new web development skills with their existing domain knowledge from their previous careers (average salary: R15 000–R30 000 p/m).

INDUSTRY PARTNERSHIPS

We have strong industry partnerships and have placed our coders at corporate businesses including Allan Gray, DirectAxis, Ogilvy & Mather, PicknPay, as well as many local development shops and startups. Some of our graduates have also moved on to become codeX mentors themselves.



AFRICA NEEDS SOFTWARE DEVELOPERS

codeX aims to address two of Africa's major challenges: mass youth unemployment, and a crippling software programming skills gap.

We believe that South Africa has many talented people who have not had the opportunities to develop their skill set. We strive to find great developer talent from all walks of life. Many of these young people are the first in their families to pursue professional careers. Professional and **personal development are integral to our programme and critical to its success.**

Companies in South Africa should use local talent and not outsource their development work to other continents, as they are currently forced to do due to the skills shortage. codeX finds the best talent and helps them to develop technical, product, planning and professional skills they need to keep these jobs here and on the African continent. Every company doing business in Africa needs a digital presence, and yet we still have very few software developers in Africa who are able to build basic websites or apps.



**FULFILLING
A NEED**





WHAT MAKES OUR PROGRAMME DIFFERENT?

CONCEPTS OVER CODING LANGUAGES

codeX coders are equipped to up-skill themselves in new languages to meet the changing needs of the tech industry. Our core curriculum is based on **Javascript**, with optional specialisation into **Java**, **Python** or **C#**. Our graduates have successfully joined teams using stacks like **Ruby**, **Python**, **PHP**, **.Net** and **Java**.

THE AGILE COACHING CONCEPT

Our Agile approach enables coders to discover the ongoing process of problem-solving. They plan their learning journey by using kanban, moving at their own pace. We have one-week sprints, with a demo and retro at the end, where coders can reflect and adapt their planning accordingly.

In addition to the above, Agile coaching focuses on continuous learning. To quote the Agile Manifesto: "We are uncovering better ways of developing software by doing it and helping others do it." codeX applies the same principle to uncover better ways of developing coding talent.

FLIPPED CLASSROOM: PEER-TO-PEER, PRACTICAL LEARNING

Our self-paced programme is practical and follows a problem-solving approach to learning. Coders learn programming skills by working on projects within their socio-economic frame of reference. They need to discover and acquire the skills they need to solve these problems. So instead of going through a textbook to learn a specific programming language, we create an environment in which coders collaborate to develop their skill set, supported by targeted workshops as well as access to the best online tutorials. Technical mentors guide them during this process as they share their knowledge and learn from each other.

Our software developers leave codeX with solid, applied experience and a strong, industry-focused foundation on which to build their careers.



WHAT MAKES OUR PROGRAMME DIFFERENT?

EMPLOYABILITY

We place great emphasis on finding the right first employer to suit each coder's interests and talents. It doesn't end there - we provide ongoing career support to our graduates. We also invest time in forming lasting and meaningful connections with industry to offer our graduates access to the best employment opportunities.

Organisations where we have placed our coders, include:

Allan Gray; PicknPay; DirectAxis; Ogilvy; IO.co.za; Platform45; Maxxor; ByteMoney; Redisa; Rocketseed; Shinka; Uber5; CloudOneMobi.



HOW WE ARE STRUCTURED: OUR TEAM

codeX was founded by **Michael Jordaan** (former FNB CEO), **Elizabeth Gould** (former Bloomberg Television producer and technology correspondent) and **David Weber** (computer scientist and serial entrepreneur). **Cara Turner** (COO and Agile coach) and **André Vermeulen** (chief code mentor) run the day-to-day programme. Both of them have more than a decade of experience in the software industry. They created the programme (open sourced on GitHub) and actively mentor the coders. **Tiffany Burd** (professional development lead) coaches coders through their personal and professional growth goals and also works with partners to recruit future coders. Our team also actively works with employers to place every coder when they graduate.

codeX's industry partners include Google, Allan Gray, mLab, Intel and WPP's Gloo. Our non-profit partner, Click Foundation, runs our bursary fund.





**SOURCING TALENTS:
RECRUITMENT**

We source our talent through our **relationships** with organisations and schools, including those in resource-constrained communities, as well as through social media and highly participatory events.

Our recruitment events include **Code Quests**, which are half-day interactive workshops. Participants get to figure out coding logic, code online and program robots to move.

We actively recruit women. Currently **38% of codeX's coders are female**. When we started almost two years ago, only 10% of our coders were women.

In addition to academic results and references, applicants need to solve logic puzzles and complete a 30-hour online coding course to be invited for an interview.

We have launched a one-month **pre-codeX coding bootcamp** for promising candidates with little or no coding experience. The purpose of this is to assess their aptitude and cultivate the foundational skills required to start the one-year programme.



The market for coders is effectively infinite across Africa, as every company needs a digital presence.

OUR END USERS THE MARKET FOR OUR GRADUATES

In South Africa alone, the skills shortage is extremely high. According to tech recruitment firm Taudata, a recent IT survey – across 158 companies from all sectors – showed the CIO's top concern is getting new talent into companies, with 50.3% of CIOs saying recruitment was their main issue. The survey also showed 61% of CIOs are hiring specific IT skills, while only 17% are hiring general IT skills. Yet, only 31% of the respondents have an internship programme.

Many software development companies, high-end integrators and other ICT service providers continue to find that their growth is constrained by a shortage of relevant skills. This amounts to roughly 30 000 software development job opportunities, or 10% to 15% of the total ICT workforce.



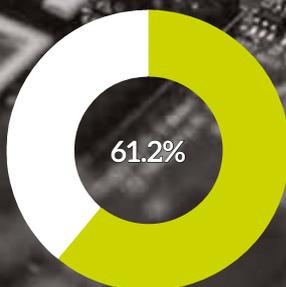
Skills shortage as % of total ICT workforce



% of companies severely impacted by a shortage of ICT skills



% of CIOs saying recruitment was their main issue



% of CIOs hiring specific IT skills



% of CIOs hiring general IT skills



% of CIOs with an internship programme

Two thirds of companies responding to ITWeb's tech salary survey reported that they are severely impacted by a shortage of ICT skills. Experienced IT professionals are ageing out of the system and not enough young professionals are coming up through the ranks to replace them.

By working on real products for real companies using industry standard languages and project management practices, our coders arrive on the job with not just the technical skills, but also the collaboration skills and product development understanding required to be a productive member of a software development team from day one.



HOW CAN YOU HELP US?

We are looking for corporate support to assist financially disadvantaged students.

A full sponsorship for one financially disadvantaged student is R100 000.

Tuition fees for 2017 are R60 000, with an additional R40 000 for stipends.

This compares favourably with the total cost of a university degree, and offers so much more in terms of employability and assistance in finding work. Sponsors are given the opportunity (but are in no way obligated) to interview and hire graduates at the end of the programme.

We have received sponsorship from the following organisations:

- AllanGray
- Ogilvy & Mather
- mLab
- Compuscan
- Playlogix
- Swipe Interactive



EXISTING DONORS AND INVESTORS FINANCIALS

Donations qualify for 18a certificates through the Click Foundation.

In addition to providing support to enable us to assist our financially disadvantaged students, there are a number of other ways in which corporates can assist us in achieving our goals of lifting young people out of poverty.

1. CODEX BOOTCAMP

Every year, codeX offers several free one-month bootcamps focused on basic coding and logic skills, as a way of attracting and identifying potential coders for the programme.

Bootcamps help to introduce coding as a career to a much wider audience. Although these participants might not join codeX, this exposure to coding could lead them to explore careers in the broader digital economy.

Our full-time, month-long bootcamps take place at codeX and mLab's new space at the V&A Waterfront's Workshop 17 Extension. Transportation and lunch are provided to participants. In future we might host bootcamps in other locations in conjunction with other organisations.



OTHER
OPPORTUNITIES
FOR SUPPORT

Bootcamps are open to codeX applicants, with priority given to those who have completed the prerequisite online courses.

Corporate sponsorship is sought to assist with the cost of these bootcamps at **R30 000** per bootcamp, training **10-15 applicants** on each bootcamp.

2. CODEX HACKATHONS

Our end of term hackathons allow the coders to work in teams to build real working prototypes in just two days. We partner with an organisation who sets the challenge and mentors the coders. We spend one day developing ideas in our unique ideation workshops and two days coding, after which coders present their work at Demo Day. Previous partners include Uber, MTN Foundation, CSIR, and local dev shop Uber5. Partners sponsor food, refreshments and prizes for the coders throughout the four days: work with us to design a great challenge and have a representative on the judging panel. Partners also have the opportunity to take prototypes forward in partnership with codeX and the coders.

3. DONATIONS IN KIND

codeX welcomes donations of laptops, smartphones, sim cards with data, bus and train tickets, refreshments for the coders and sponsored invitations to industry events for coders.



A black and white photograph of two people sitting at a table, looking at documents. The person on the left is wearing a dark jacket with a fur collar and a scarf. The person on the right is wearing a light-colored jacket. There are papers, a white cup, and a smartphone on the table. A large green arrow-shaped graphic points downwards from the top left, partially overlapping the photo and the text below.

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