

# IBM Z Xplore

Enterprise Computing Learning Experience

IBM Z Xplore is a learning experience available year-round to individuals interested in developing in-demand IBM zSystem skills, earning industry-recognized digital badges and redeeming rewards. It includes an entry level mobile gaming application, an interactive learning platform with IBM Z system access, as well as a sponsored student contest.

The [learning platform](#), open to individuals ages 16 years and older (with consent from parent guardian if 16/17), takes learners through guided educational paths and code challenges in three progressive levels:

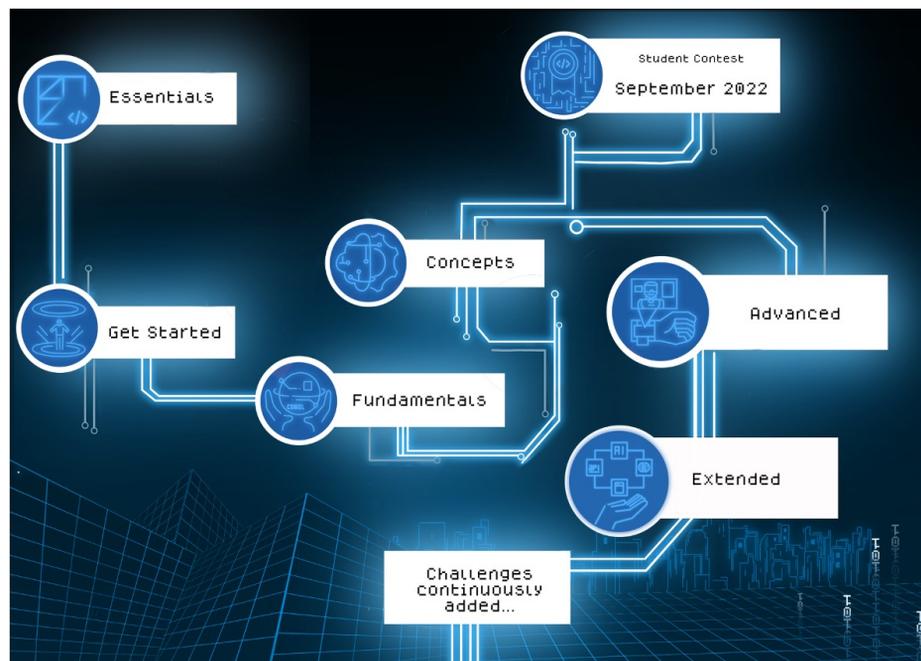
- > Fundamentals ~10 hours
- > Concepts ~2 hours  
(with option to complete the IBM Z Practitioner Badge; additional ~40 hours)
- > Advanced ~10-20 hours with content continuously being added
- > Extended ~10 hours with content continuously being added

Two digital badges are offered within the learning platform. The first badge is be issued after the completion of Concepts -- the IBM Z Xplore Concepts Badge. The second badge is issued upon completion of the Advanced level -- the IBM Z Xplore Advanced Badge. Both badges will automatically be rewarded via Credly.

IBM also sponsors an annual September student contest hosted and run by HackerEarth, an industry leader in hackathons with a community of over 6 million developers and 450 universities. The IBM zStudent Contest is sponsored by IBM Z Xplore, integrating core challenges to help students complete the contest. To be eligible, participants must 18 years or older and a student at an accredited school.

Students participating in the contest must complete the Fundamentals and Concepts levels in the Learning Platform prior to starting the contest (earning the Concepts Badge). The knowledge gained in the learning platform will only help their ability to complete the contest.

Student are able to preregister for the September contest on the HackerEarth website [now](#).



# IBM Z XPLORE

## To our valued educators,

Master the Mainframe officially shut down on December 31st, 2021. Thank you for your continued support and partnership in bringing IBM Z, z/OS, and applications skills into your classroom. Many of your past students make up today's talent at our clients and partners.

For 16 years Master the Mainframe has introduced thousands of students and learners to IBM zSystems and enterprise computing. Taking the best of the past and reimagining it for the future, the IBM zSystems® community will be sunsetting Master the Mainframe to make way for a new learning experience—IBM Z Xplore.

IBM Z Xplore is fully launched and is available globally to anyone interested in developing valuable, in demand IBM zSystems enterprise computing skills while earning industry-recognized digital badges and earning rewards.

Along with the IBM Z Xplore [learning platform](#) and an entry level gaming application, IBM Z Xplore: Essentials, IBM will sponsor a student contest hosted and run by [HackerEarth](#), an industry leader in hackathons with a global community of over 6 million developers and 450 universities. The competition will kick off in September and will be powered by IBM Z Xplore, integrating core challenges to help students complete the contest.

We want to reassure you that IBM Z Xplore will provide the same level of learning and skills from our previous Master the Mainframe program -- and more.

**Your IBM zSystems Academic Initiative Team**



# THE LEARNING PLATFORM

## Overview

The IBM Z Xplore [learning platform](#) is a no-charge educational experience that is available year-round to reskillers, students—16 years or older and educators—with content continuously being added throughout the year.

Before access to our platform, users will have to agree to our Terms and Conditions and Code of Conduct. These rules and conditions are to ensure users are being safe and smart on our platform.

The platform has four levels; Fundamentals, Concepts, Advanced and Extended. Learners will need to complete the challenges within each level in order to progress. Each level features a variety of education styles including videos, quizzes, reading materials, and hands-on exercises.

The platform will also automatically issue Credly [badges](#) to learners once they have completed the Concepts and Advanced levels.

### FUNDAMENTALS

Introduction to coding languages such as JCL, Python, REXX and USS.  
Learning about Data Sets and VS Code filters.

*Approximately ~10 hours to complete*

### CONCEPTS

A deeper look into subsystems such as Db2 and RACF. Expanding knowledge on security, uptime, and enterprise scalability.

*Approximately ~2 hours to complete*

*Opportunity to complete the [IBM Z Practitioner Badge](#) if interested ~40 hours*

### ADVANCED

Hands-on learning around REXX, COBOL, Linux, VSAM, REGEX, JCL, Python, Db2 and more.

*Approximately ~10 to 20 hours to complete*

### EXTENDED

Hands-on learning around TSO, Node.js, Machine Learning, and more.

*Approximately ~10 hours to complete*

# IBM Z Xplore Essentials

## *Get Started with the Basics*

If you aren't sure where to begin or you want to have a better understanding of IBM zSystems and enterprise computing, [Essentials](#) is a great place to start.

Behind the scenes, enterprise IT powers the applications that run our world. IBM Z Xplore [Essentials](#) introduces learners to what enterprise IT is and how it is important to society.

If you or your students are interested in learning about the hardware and software components of an IBM zSystem or looking for an introduction to all things enterprise computing, Essentials is for you.

Essentials is a mobile application, designed to work on both your mobile phone and desktop. We take a user behind the scenes of enterprise IT, through purchasing an item online on your mobile device. Users will follow their item as it goes through payment processing, order processing and delivery, while mixing in hardware components along the way.

In Essentials, you will experience:

- Interactive videos and quizzes
- Hands-on experience with Python and API code
- Easy transition into IBM Z Xplore learning platform

For more information about Enterprise IT and Essentials, [click here](#)

To get started with Essentials, [click here](#)



# THE LEARNING PLATFORM

## *Reporting and Dashboards*

### REPORTING AND DASHBOARDS FOR EDUCATORS/CLIENTS

IBM Z Xplore offers reporting and dashboard features to enhance the learning experience for your students/team and within your classroom or workspace. Our learning platform provides automated reports created from dashboards so you can easily keep track of where your learners are in their learning journey. This feature is not required to participate on our learning platform.

If you are using IBM Z Xplore as part of your curriculum, you can utilize and receive automated weekly reports on the progress of your learners. This information includes how many students/team members have registered on our platform for your class, completion of each challenge within Fundamentals, Concepts and Advanced, as well as total completion (badge completion) for all three levels.

To get set up, you must complete a form provided below that asks information about your curriculum and details regarding your class/team. Once submitted, allow 2-3 business days for us to send your unique course code and further instructions on what do to next. This course code is per every **one class/group** only. If you have multiple classes/teams within one semester or multiple semesters, you will need to submit a form per class/team.

We do not share personal information with anyone outside of our team. Your information and your learners' information is kept confidential. For more information, please see the links below. Take advantage of this great feature on IBM Z Xplore!

[EDUCATOR HUB](#)

[DASHBOARD REQUEST FORM](#)

[IBM Z XPLORE KIT](#)

[HOW TO USE YOUR UNIQUE CODE](#)



# IBH 2STUDENT CONTEST

## SEPTEMBER

### OVERVIEW

The competition kicks off every September. Students must first complete all fundamental and concepts challenges (**earning the Concepts badge**) within the learning platform prior to starting the contest. To be eligible, participants must be 18 years or older and a student at an accredited school. The contest will have six challenges ("drops"), having students build a fuel cell to power a car. Below are the skills required to complete each drop:

### DROP ONE

Read information from datasets, decode and convert data, and place properly formatted output in the correct location.

*Skills needed: USS, Python, REXX*

### DROP TWO

Create one or more scripts to read information from the database catalog and tables, and place the output in the correct location.

*Skills needed: Python, Db2, REXX*

### DROP THREE

Decipher filenames with one key and generate a list of candidate files using first keys.

*Skills needed: Bash, Python, Node.js*

### DROP FOUR

Extract information directly from VSAM datasets to get the hydrogen component.

*Skills needed: USS, VSAM, JCL*

### DROP FIVE

Assemble fuel cell and generate a report to keep track of all that you needed to do.

*Skills needed: API, HTML, Markdown*

### DROP SIX

Submit project in HTML or Markdown for judging

*Final submission date: December 31st, 2022 at 11:59 pm ET*



## LEARNING PLATFORM FAQS

### WHAT'S THE DIFFERENCE BETWEEN MTM AND IBM Z XPLORE?

#### MTM

- Learning materials and the grand challenge (student contest) are on **ONE** platform
- Student Contest: Accessible to anyone 18+ and at an accredited school, **three months long**

#### IBM ZXP

- Learning experience (IBM ZXP) is on one platform, accessible to anyone who wants to learn
- Student contest: Hosted by HackerEarth on a **separate** platform, accessible to anyone 18+ and at an accredited school, **three months long**

### I GRADE STUDENTS BASED ON MTM LEVELS, HOW DOES THAT WORK WITH IBM ZXP?

In the past we had three levels (1,2,3) and now we are switching over to three channels: Fundamentals, Concepts and Advanced.

- Level 1 → VSC1 of Fundamentals
- Level 2 → Fundamentals and Concepts
- Level 3 → Advanced

### WILL BADGES BE OFFERED AND AFTER WHAT SECTIONS?

[Two badges](#) will be offered within the learning platform. The first badge will be issued after the completion of concepts – the IBM Z Xplore Concepts Badge. The second badge will be issued after the completion of the advanced -- the IBM Z Xplore Advanced Badge. Both badges will be automatically rewarded via Credly and students will receive an email.

### WHERE CAN STUDENTS SIGN UP FOR THE IBM Z XPLORE LEARNING PLATFORM?

The [learning platform is now live](#) and open to individuals 16 years and older.



# FAQS

## **MY STUDENT IS NOT 16+, HOW CAN I GET THEM INVOLVED ON IBM Z?**

In addition to IBM Z Xplore, we have launched a gaming app, IBM Z Xplore Essentials. Essentials takes a look at how enterprise IT is working behind the scenes so you can make secure purchases in milliseconds on your mobile device. Essentials is a great entry point to learn about introductory computing concepts.

## **WHAT IS REPORTING AGAIN?**

Reporting is for approved educators or clients who want to track their students'/teams learning progress on IBM Z Xplore.

We have created a [form](#) that you can submit in order to receive learning progression feedback. This feedback is a dashboard, generated by IBM Z Xplore, that displays how many students have registered in their class, how many have completed each channel (Fundamentals, Concepts, Advanced), how far an individual student has gone within a channel (ex. A learner is currently at JCL in Fundamentals) and how many badges have been earned by each learner.

After the form is filled out, a unique code will be generated for each professor/client lead that their students or team will submit in [a challenge](#) in IBM Z Xplore. Once the the unique code is submitted, they will automatically be added to the group and we will schedule out weekly automated reports of the progress.

Link to join the educator hub: [IBM Z Educator Hub](#)

Link to form for professors/clients to fill out: [Form Link for Weekly Reports](#)

Link to unique code for submissions: [Unique Code Submission](#)



## CONTEST FAQS

### **ARE THERE ANY PREREQUISITES FOR PARTICIPATING IN THE STUDENT CONTEST?**

Students must earn the IBM Z Xplore Concepts badge before beginning the contest. Earn the Concepts badge by completing the Fundamentals and Concepts levels in the [learning platform](#) prior to the contest. This will help their ability to complete the contest successfully.

### **WHERE CAN STUDENTS SIGN UP FOR THE IBM zSTUDENT CONTEST?**

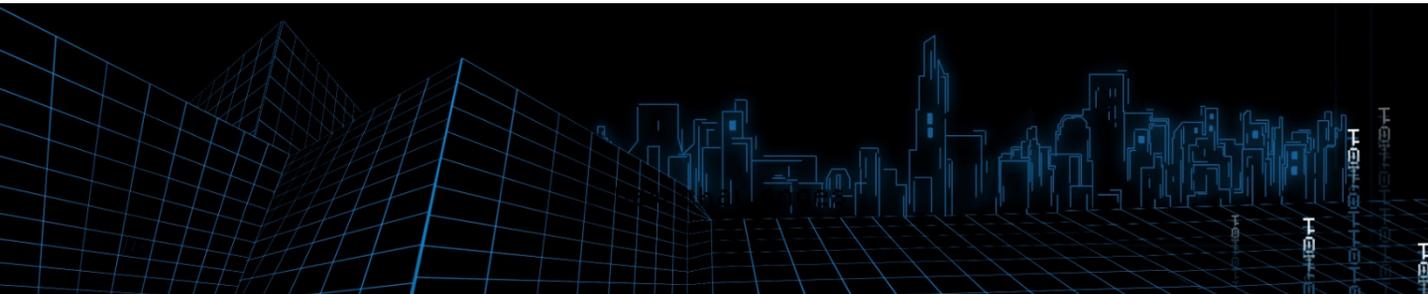
[Registration](#) for the IBM zStudent Contest is now live. Students can preregister for the September contest on HackerEarth's website. To be eligible, participants must 18 years or older and a student at an accredited school.

### **WILL THE CONTEST BE AVAILABLE TO ANYONE?**

During the 3-month contest, only eligible users will be able to compete for the prize money. After post-contest season, we will make the contest challenges available on IBM Z Xplore. Participants ineligible for contest cannot receive any prizes and cannot register for the contest.

### **ARE THE CONTEST AND LEARNING PLATFORM ID AND PASSWORD THE SAME?**

Eligible users will use the same IBM zID and PW they receive when they register on IBM Z Xplore for both the learning platform and for the student contest. When a user registers on IBM Z Xplore, they will receive a zID and PW to get on to the IBM zSystem. For the contest, users will register on HackerEarth and receive the details of the contest challenges (six of them) on IBM Z Xplore learning platform.



# ADDITIONAL INFORMATION

## PORTS USED

*To communicate to your campus security team what ports are being used to prevent potential access blockage.*

IP Address: 204.90.115.200

- Port 20/21 – FTP
- Port 22 – SSH
- Port 623 – TN3270 (TSO/ISPF/SDSF)
- Port 5040 – Db2 (relational database)
- Port 10443 – z/OSMF

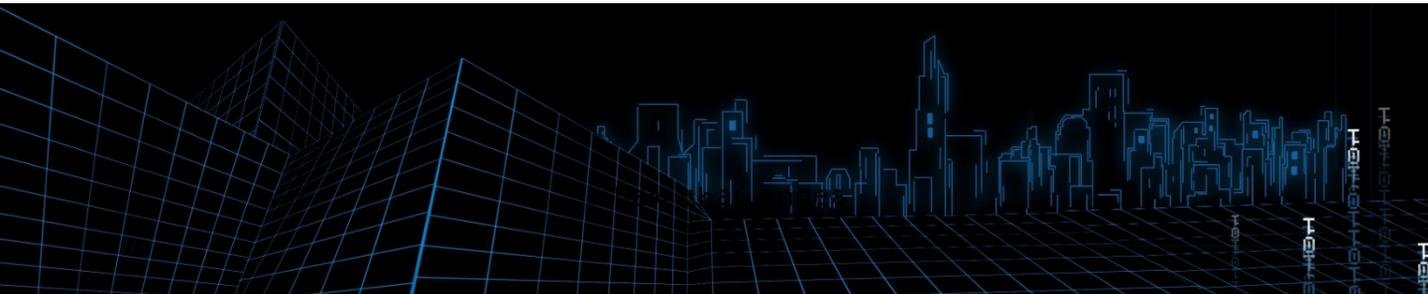
IP Address: 204.90.115.137

- Port 5080 to 5090 - TCP

## SOFTWARE DOWNLOADS

*These are the software's that your students will be required to download and install. Make sure your students have privileges on their machine to install software.*

- VS Code
- Node.js



# ADDITIONAL INFORMATION

*Total Challenges List – Updated Apr. 2022*

## FUNDAMENTALS

*Progressive Challenges - Approximately ~10 hours to complete*

1. VSC1 – VS Code Introduction
2. Files1 – Datasets and Members
3. JCL1 – JCL Introduction
4. USS – Unix System Services
5. Code – Python
6. REXX1 – REXX Introduction
7. Wrap Up – Combine skills to advance to Concepts

## CONCEPTS

*Approximately ~2 hours to complete*

*Opportunity to complete the [IBM Z Practitioner Badge](#) if interested ~40 hours*

- Uptime – IBM zSystems Availability
- IBM Z Practitioners – Personas Running Our Systems
- System – z/OS Operating System and Subsystems
- Enterprise Systems – Enterprise Computing
- Security and Privacy

## ADVANCED

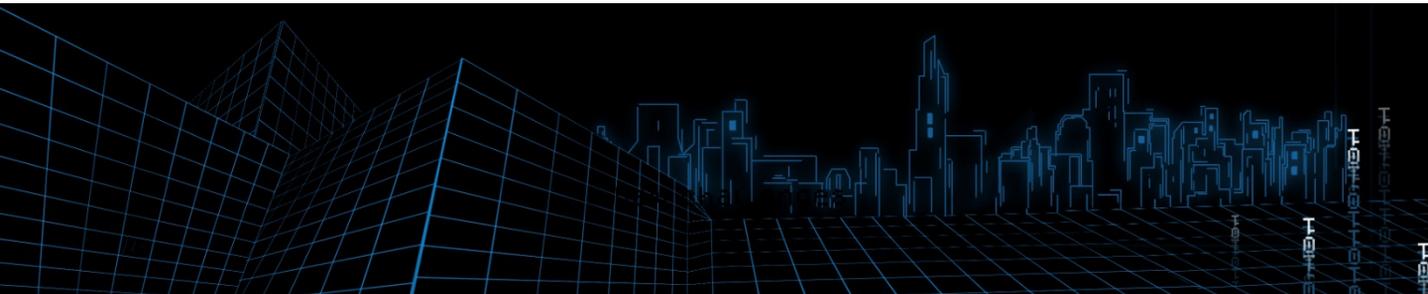
*Approximately ~10 to 20 hours to complete*

- ANS1 & ANS2 – Ansible
- LNX1 & LNX2 – Linux
- PDS1 & PDS2 – Partitioned Data Sets
- REXX2 – REXX Continued
- JCL2 – JCL Continued
- USS2 – USS Continued
- Db2 – Db2 & SQL
- COBOL & HTML
- Docker
- Zowe CLI

## EXTENDED

*Approximately ~10 hours to complete*

- TSO 1-5
- Node.js
- Machine Learning



# LINKS

## [IBM Z Xplore Blog](#)

This includes a walkthrough video of the onboarding process and how the platform looks.

## [IBM Z Xplore Information Page](#)

This includes an overview of IBM Z Xplore, how to get started and information on badges to earn.

## [IBM Z Day presentation](#)

This includes an introduction to IBM Z Xplore and the IBM Z Student Contest as well as a student demonstration walkthrough of the first two challenges on the platform. *Link expires December 15<sup>th</sup>.*

## [Concepts Credly Badge](#)

This includes a more in-depth description of the Concepts badge and what needs to be completed.

## [Advanced Credly Badge](#)

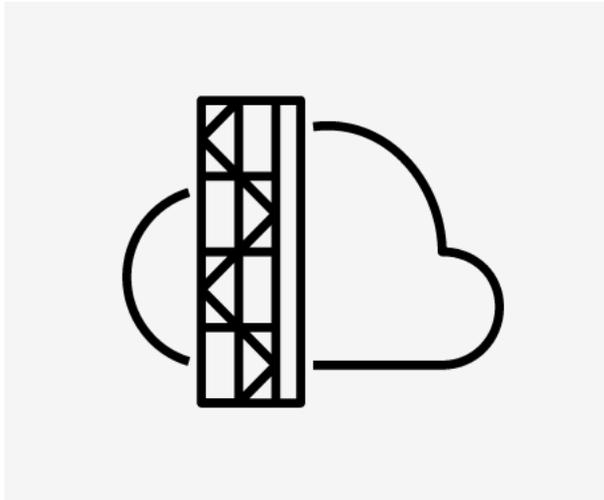
This includes a more in-depth description of the Advanced badge and what needs to be completed.

## [IBM zStudent Contest – Credly Badges](#)

- Contender Badge
- Finalist Badge
- Regional Winner Badge
- Global Winner Badge



# SOCIAL IMAGES



# IBM Z Xplore



# SOCIAL IMAGES

