مركز التميز الرقمي

DIGITAL
CENTER OF
EXCELLENCE

elev8 | Microsoft

MICROSOFT SUMMER BOOTCAMP PROGRAM 2023

CONTENT

EMPOWERING QATARI YOUTH THROUGH THE MICROSOFT SUMMER BOOTCAMP AT ELEV8'S DIGITAL CENTRE OF EXCELLENCE IN QATAR

The Microsoft Summer Bootcamp was designed to empower Qatari job seekers by fostering a well-rounded skill set that combines both technical and soft skills. This approach not only makes individuals more attractive to potential employers but also enhances their ability to contribute meaningfully to their workplaces. Ultimately, this initiative aims to bridge the current digital skills gap that exists in most organizations, create a more vibrant and competitive job market, and contribute to Qatar's continued growth and prosperity in the technology industry. Keep reading to get an exclusive look at how we designed the program which helped our 50 learners become more desirable on the job market and hone in on their skills.

An Inside Look at Our 5-Week Bootcamp's Program

By increasing employment opportunities in both the public and private sectors, the program addresses a vital aspect of Qatar's economic development. Skilled tech professionals are essential for driving innovation, improving services, and ensuring the country's competitiveness on the global stage. That's why our program was designed to not only help participants polish their technical skills but also develop their soft skills as well as get hands-on experience in their chosen field.

Program Details:

🛠️ **30** hours of technical skills training.

⌨️ **10** hours of hands-on lab.

📊 **5** hours of soft skills career training.
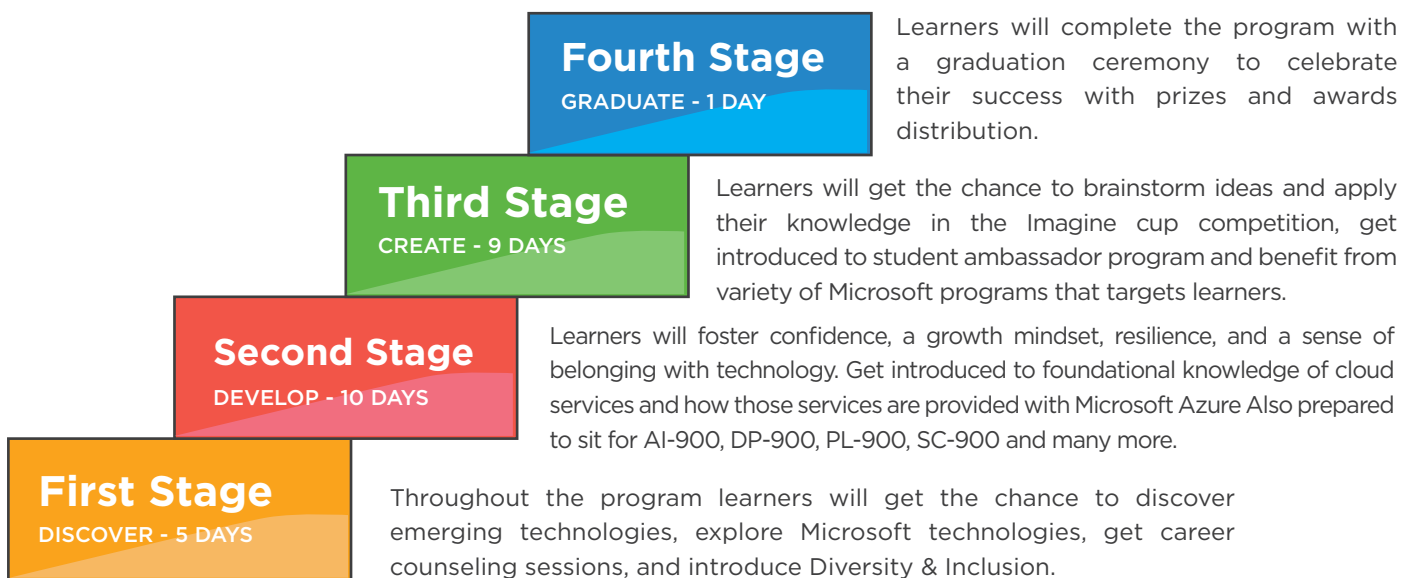
🎓 **3** mentoring sessions.

Each one of the 50 learners chose one of the four tracks, most suited to their interests and career goals. This way, we were able to ensure every learner could explore the skills most interesting to them and most useful in their daily jobs.

Four Learning Tracks In The Program:

- 🔴 AI Engineering
- 🟡 Data Analyst
- 🔵 Security
- 🟢 Applications

31%
16%
26%
27%
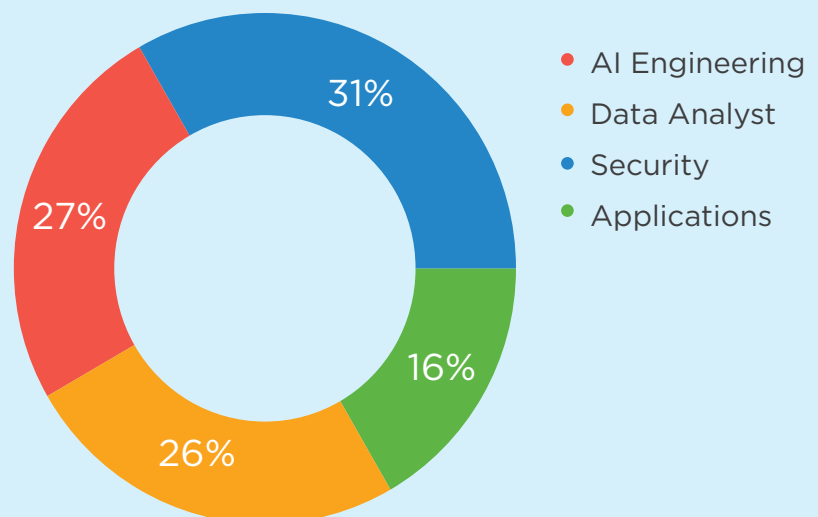
STAGES OF THE MICROSOFT SUMMER BOOTCAMP

To make the most of the 5 weeks we had with our learners, the program was divided into stages – each designed to build on the knowledge and skills acquired in the previous one. Starting with introducing the learners to emerging technologies and career opportunities, through getting to know the ins and outs of Microsoft technologies to testing their knowledge in action during a hackathon.
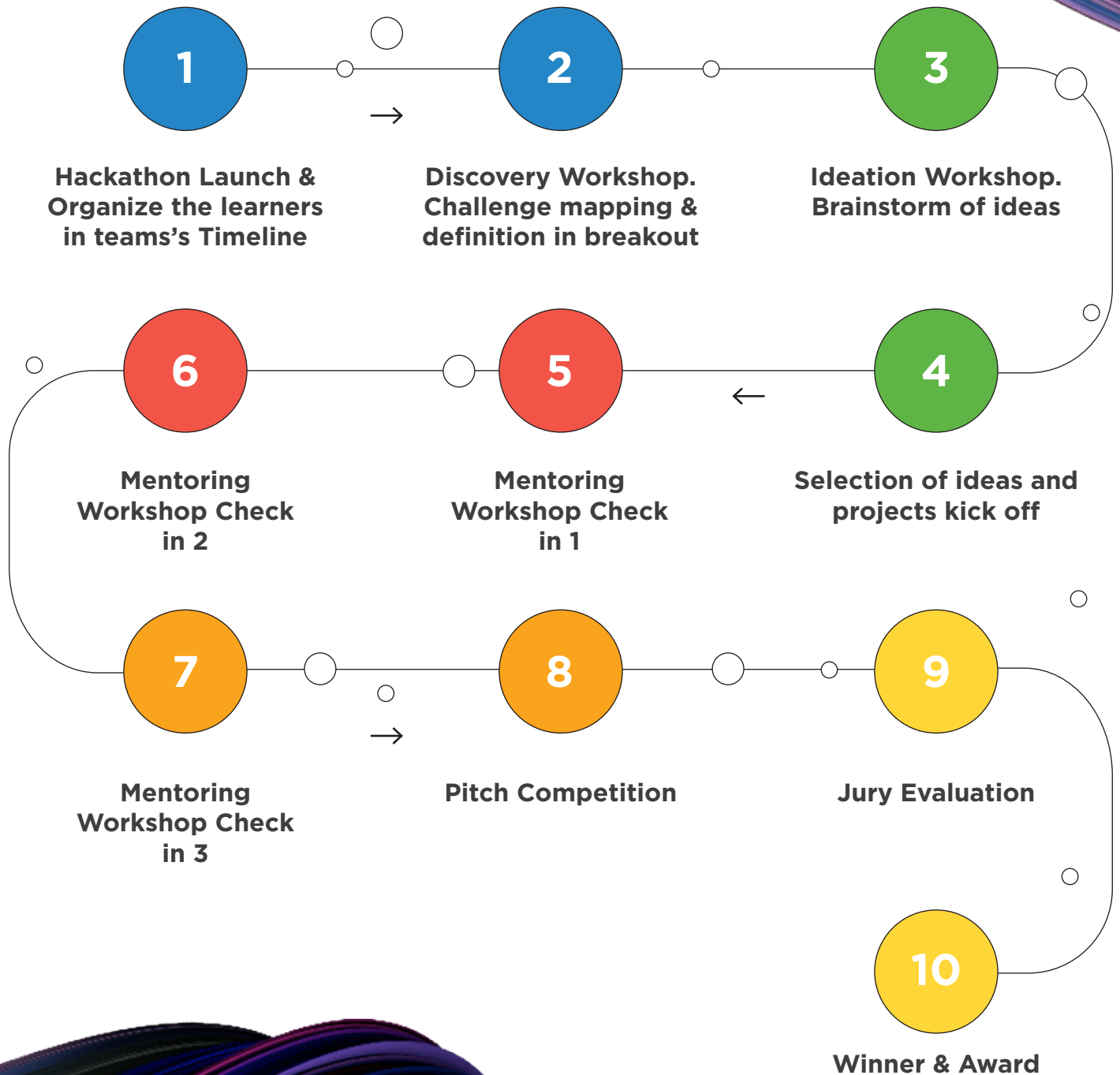
Fourth Stage
GRADUATE - 1 DAY

Learners will complete the program with a graduation ceremony to celebrate their success with prizes and awards distribution.

Third Stage
CREATE - 9 DAYS

Learners will get the chance to brainstorm ideas and apply their knowledge in the Imagine cup competition, get introduced to student ambassador program and benefit from variety of Microsoft programs that targets learners.

Second Stage
DEVELOP - 10 DAYS

Learners will foster confidence, a growth mindset, resilience, and a sense of belonging with technology. Get introduced to foundational knowledge of cloud services and how those services are provided with Microsoft Azure Also prepared to sit for AI-900, DP-900, PL-900, SC-900 and many more.

First Stage
DISCOVER - 5 DAYS

Throughout the program learners will get the chance to discover emerging technologies, explore Microsoft technologies, get career counseling sessions, and introduce Diversity & Inclusion.

THE HACKATHON –
WHERE OUR LEARNERS PUT THEIR SKILLS INTO ACTION

Let's take an in-depth look at the "Create" stage of our Summer Bootcamp – the hackathon. The learners had 9 days to pick a challenge presented by one of our partners (Microsoft, National Museum of Qatar and Mada - Qatar Assistive Technology Center) and come up with a solution using their new skills. The challenges were divided into four categories:

- **Earth:** solutions for climate change, agriculture, and in green tech
- **Education:** innovating to change the way students across the globe learn
- **Health:** tackling issues in treatment, diagnosis, accessibility, and more
- **Lifestyle:** projects that shape how we game, consume content, and live

HACKATHON'S TIMELINE

1
Hackathon Launch & Organize the learners in teams's Timeline

2
Discovery Workshop. Challenge mapping & definition in breakout

3
Ideation Workshop. Brainstorm of ideas

6
Mentoring Workshop Check in 2

5
Mentoring Workshop Check in 1

4
Selection of ideas and projects kick off

7
Mentoring Workshop Check in 3

8
Pitch Competition

9
Jury Evaluation

10
Winner & Award

TESTIMONIALS

"During the hackathon, we were able to learn new technologies and how to use them, such as embedding databases and how to integrate them with OpenAI large language models, and we also helped each other.

My instructors were very friendly, especially Mr. Aiman. He made the experience even better. Additionally, the labs provided me with a clear and detailed overview of Microsoft Azure services.

Having participated in the program helped me decide that I would devote my future to building AI.

In this program, I realized my potential and my future path of success, presently, I'm a software engineer. My next goal is to become a Senior Software Engineer and Business Data Analyst. My long-term vision is to be a CTO, then a CEO, then a consultant for large companies.

By learning how to use Microsoft's security features, I am more confident to apply my skills and knowledge in my work environment.

The learning resources, connecting with lifelong learners, and the training lab have all added valuable knowledge and skills, which I believe are more relevant to the current job market.

CHALLENGES OFFERED BY OUR PARTNERS

Hackathon brings forth new solutions to challenges in various fields like earth, education, health, and lifestyle through technological innovation. To make the most of hackathons and innovation challenges, Qataris and international organizations have developed challenges for learners. Discover the challenges presented below.

Microsoft

AI SOLUTIONS TO COMBAT CLIMATE CHANGE

TOPIC:
How can AI recommend solutions to effectively fight climate change?

CHALLENGE DESCRIPTION:
Develop an AI-driven system or model that can analyse various environmental factors and provide recommendations for combating climate change.

SOLUTION DESCRIPTION:
The solution should leverage AI technologies, such as machine learning and data analysis, to suggest practical measures, policies, or actions that individuals, communities, or governments can take to mitigate the impact of climate change.

Participants should demonstrate how their AI model can effectively identify and prioritize solutions to address the challenges posed by climate change.

The proposed AI solution should consider factors like renewable energy, sustainable practices, conservation efforts, and eco-friendly technologies.

Microsoft

AI-ASSISTED TIME-SAVING FOR TEACHERS"

TOPIC:
How can AI help teachers save time in lesson preparation and planning?

CHALLENGE DESCRIPTION:
Develop an AI-powered tool or platform that can assist teachers in optimizing their time spent on lesson preparation and planning.

SOLUTION DESCRIPTION:
The solution should leverage AI capabilities to automate certain tasks, streamline resource gathering, and offer personalized recommendations for lesson content, activities, and assessments.

Participants should demonstrate how their AI system can effectively analyses educational materials, curriculum guidelines, and student data to provide teachers with tailored suggestions, templates, or resources that align with their specific teaching objectives and student needs.

The proposed AI solution should focus on enhancing efficiency, reducing administrative burdens, and improving overall teaching effectiveness.

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INCLUSIVE FITNESS APP USING MICROSOFT KINECT AND AZURE COGNITIVE SERVICES

OBJECTIVE:
The objective of this challenge is to invite participants to conceive a concept for a Kinect-powered fitness application that caters to all users, including those with physical limitations or disabilities.

CHALLENGE BRIEF:
Participants are required to devise a concept for a fitness application that leverages Microsoft Kinect's motion-sensing input and Azure's Cognitive Services. The app should consider each user's abilities and limitations and offer personalized workout routines accordingly.

KEY DELIVERABLES:
- A concept for a Kinect-powered fitness application that caters to users of all abilities.
- Explanation of how the app would integrate with Microsoft Kinect and Azure Cognitive Services.
- Description of the app's user interface and user experience.
- A concept documentation.

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IMMERSIVE LEARNING EXPERIENCE USING MIXED REALITY

OBJECTIVE:
This challenge aims to encourage participants to conceptualize a novel learning app using Microsoft's Mixed Reality platform. The app should offer students of different age groups an immersive, interactive, and engaging learning experience.

CHALLENGE BRIEF:
Participants are required to design a concept for an app using Microsoft's Mixed Reality platform that creates immersive learning experiences for various subjects. The concept should include virtual tours, 3D demonstrations, interactive lessons, and simulations, transforming traditional learning methods and making education more accessible and engaging.

KEY DELIVERABLES:
• An innovative concept for a mixed reality application aimed at enhancing learning.
• Explanation of how the app would integrate with Microsoft's Mixed Reality platform and Azure AI services.
• Description of the user interface and user experience.
• A concept documentation.

NATIONAL MUSEUM OF QATAR
متحف قطر الوطني

INNOVATIVE TECHNOLOGY SOLUTIONS FOR MUSEUMS

OBJECTIVE:

Develop a creative and innovative proposal for leveraging technology to enhance the museum experience.

CHALLENGE DESCRIPTION:

After visiting the museum yesterday, it's evident that museum spaces are not only rich in history and culture but also serve as creative hubs that inspire visitors. In this challenge, we encourage students to tap into their creativity and explore the possibilities of technology in museums. The objective is to develop a novel solution that aligns with their specific areas of interest, degree programs, or career paths.

Participants are encouraged to think outside the box and consider how technology can enhance various aspects of the museum experience. This could include interactive exhibits, augmented or virtual reality experiences, mobile applications, digital storytelling platforms, data visualization techniques, or any other technological innovation that can create a more immersive and engaging museum visit.

The proposal should clearly articulate the problem or opportunity being addressed, the target audience, and the proposed technological solution. Creativity, feasibility, and potential impact will be important factors considered in the evaluation of the proposals.

By empowering the students to develop proposals they are truly passionate about, we aim to foster their innovative thinking and encourage them to explore technology's potential to transform museum spaces into even more vibrant and inclusive environments.

CHALLENGE

BRAILLE EDUCATION APP USING MICROSOFT ACCESSIBILITY FEATURES

PURPOSE:

The purpose of this challenge is to invite developers, education technologists, and passionate individuals to design an innovative, intuitive, and user-friendly application that leverages Microsoft's accessibility features to facilitate Braille education. This challenge aims to bridge the gap between the visually impaired community and technology, ensuring everyone has equal access to learning opportunities.

CHALLENGE BRIEF:

Participants are expected to create an application that promotes Braille literacy among visually impaired or blind users. The application should integrate seamlessly with Microsoft's accessibility features (like Narrator, Magnifier, High Contrast settings, etc.) to enhance the learning process. The application should be compatible with Braille displays, allowing real-time interaction and translation of Braille into text and vice versa.

The goal is to provide a comprehensive, digital Braille learning environment that is engaging and accessible. This challenge not only tests your coding skills but also your understanding of the end users and your ability to innovate on accessibility tools.

KEY DELIVERABLES:

- An interactive app compatible with various devices (smartphones, tablets, PCs, Braille displays).
- Integration with Microsoft accessibility features.
- Features enabling learning, practicing, and testing Braille skills.
- Real-time interaction and translation of Braille to text and text to Braille.
- User-friendly interface and experience, tailored to the visually impaired community.
- A comprehensive user guide and documentation.

METAVERSE FOR PERSONS WITH VISUAL IMPAIRMENT USING MICROSOFT TECHNOLOGIES

PURPOSE:

The aim of this challenge is to invite creative thinkers, developers, XR enthusiasts, and accessibility advocates to design a groundbreaking Metaverse application that leverages Microsoft technologies, to provide visually impaired individuals with an immersive and accessible virtual experience. We aspire to ensure that the future of digital interaction is inclusive, allowing everyone, regardless of their visual capabilities, to participate fully.

CHALLENGE BRIEF:

Participants are required to develop a Metaverse application concept tailored to the needs of visually impaired or blind users. The application should employ Microsoft's suite of technologies, including but not limited to Azure, Microsoft Mixed Reality, and accessibility features (like Narrator, Soundscapes, etc.), to create an inclusive, immersive, and interactive virtual world. Your application should consider ways to translate visual information into other sensory cues, such as spatial audio, haptic feedback, and more. You should seek to create an environment where visually impaired individuals can navigate, interact, learn, and socialize effectively.

KEY DELIVERABLES:

- A Metaverse application concept/idea that caters to the needs of visually impaired users.
- Seamless integration with Microsoft technologies and accessibility features.
- Innovative methods for conveying visual information through other sensory
- channels.
- Features enabling easy navigation, interaction, and communication within the
- virtual environment.
- A comprehensive user guide and detailed documentation

CHALLENGE

REAL-TIME SPEAKER CAPTIONING APPLICATION USING MICROSOFT AZURE

PURPOSE:

The intent of this challenge is to attract developers, machine learning enthusiasts, and accessibility advocates to design and develop a real-time speaker captioning application using Microsoft Azure Cognitive Services. The aim is to enhance the communication experience for the hearing-impaired community, ensuring that they can fully participate in personal and professional conversations.

CHALLENGE BRIEF:

Participants are expected to create an application capable of providing real-time captions for spoken words. The application should leverage the powerful Speech to Text capabilities of Microsoft Azure Cognitive Services to deliver accurate, timely, and synchronized captions.

The application should be able to handle conversations with multiple speakers, distinguishing between different voices and attributing captions correctly. The ultimate goal is to create an application that makes audio content more accessible and inclusive, empowering hearing-impaired users to engage in conversations without constraints.
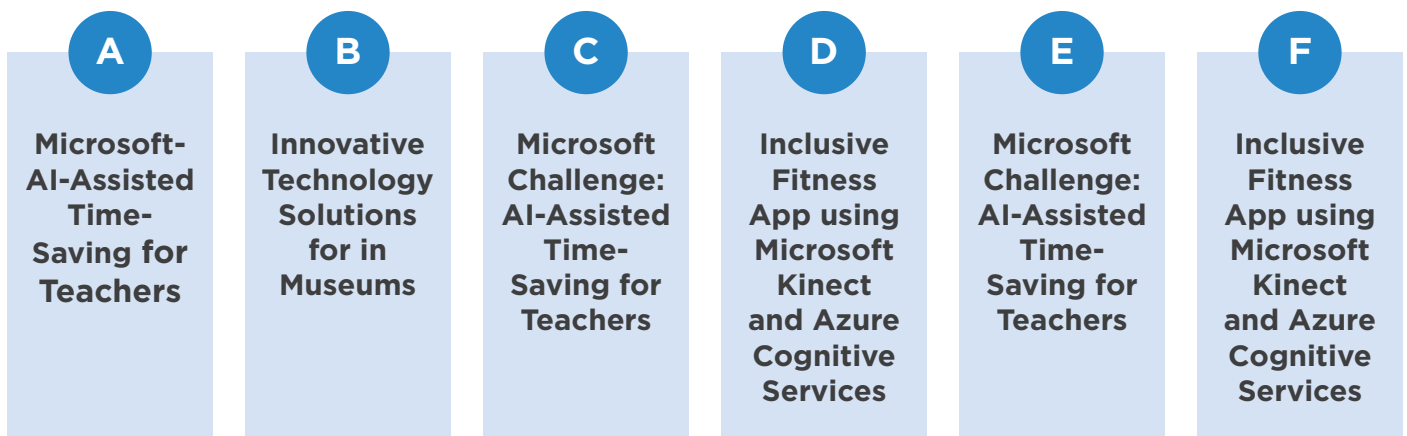
KEY DELIVERABLES:

- A fully functional application capable of real-time captioning of spoken words.
- Effective use of Microsoft Azure Cognitive Services, specifically the Speech to Text
- service.
- Ability to handle multiple speakers and distinguish between different voices.
- Features ensuring accessibility and ease-of-use for hearing-impaired individuals.
- A comprehensive user guide and detailed documentation.

LET'S GET HACKING –
AN OVERVIEW OF THE HACKATHON & A LOOK AT THE WINNING PROJECT

As we mentioned earlier, our 50 learners were divided into 6 groups. Each group could choose the challenge they found most interesting. Here's what each group decided on:

A	**B**	**C**	**D**	**E**	**F**
Microsoft-AI-Assisted Time-Saving for Teachers	Innovative Technology Solutions for in Museums	Microsoft Challenge: AI-Assisted Time-Saving for Teachers	Inclusive Fitness App using Microsoft Kinect and Azure Cognitive Services	Microsoft Challenge: AI-Assisted Time-Saving for Teachers	Inclusive Fitness App using Microsoft Kinect and Azure Cognitive Services

THE WINNING PROJECT BY GROUP C

Our winners chose the "AI-Assisted Time-Saving for Teachers" challenge by Microsoft.
The objective of this challenge was to develop an AI-powered tool or platform that can assist teachers in optimizing their time spent on lesson preparation and planning.
[I'd add a picture of the winning group here]
The winning group came up with EduAI. A solution offering optimization of lesson preparation and planning by leveraging AI capabilities and data analytics. This would significantly help the teachers by streamlining lesson management, making access to curriculum-aligned materials easier, increasing the levels of lesson personalization, automating lesson planning, and helping them with student performance evaluation.

Benefits of the AI-Driven Solution Proposed by the Hackathon Winners:
1. Efficient Planning for Engaging Lessons
2. Simplifying Resource Gathering for Impactful Teaching
3. Streamlined Tasks, Enhanced Lesson Quality
4. Personalized Guidance for Effective Teaching
5. Lightening the Load, Elevating Teaching Excellence
6. Insightful Assessment for Classroom Success.

WINNERS

MEET THE PARTNERS OF THE SUMMER BOOTCAMP

This program wouldn't be possible without our partners who not only supported us with organizing the training but also provided the Hackathon Challenges. We would like to thank the National Museum of Qatar, Mada - Qatar Assistive Technology Center as well as the title partner Microsoft for helping us empower Qatari talent and creating a space where they can learn, grow and polish their skills.

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