Vocational Course on Mobile App Development

The **objective** of this course is to enable learners to develop practical mobile applications using MIT App Inventor, fostering creativity and innovation in app development.

Instructor Qualification: B.Tech with 3 Years of experience in Mobile App Development.
Payout: 20,000-60,000 INR monthly on successful completion of all the semesters.

Why should you opt for this course?

1. No Prior Coding Experience Required: This course is designed for beginners with little to no coding experience. If you want to learn app development but find traditional programming languages intimidating, MIT App Inventor provides a user-friendly, visual interface that makes the learning process accessible and enjoyable.
2. Rapid Prototyping and Development: MIT App Inventor allows you to rapidly prototype and develop mobile apps. You can quickly turn your ideas into functional apps, making it an ideal choice if you want to bring your app concepts to life without extensive development time.
3. Hands-On Experience: The course provides hands-on experience in building real mobile applications. By creating practical projects, you develop a portfolio of functional apps that showcase your skills and can be used for personal projects or to impress potential employers.
4. Creativity and Innovation: App development allows you to unleash your creativity and innovate. You can design apps for various purposes, from education and social impact to entertainment and personal productivity. The course nurtures your creativity and empowers you to turn your ideas into reality.
5. Versatile Skillset: Mobile app development is a valuable skill in today's digital world. Whether you are a student, professional, entrepreneur, or hobbyist, learning to build mobile apps opens up diverse opportunities for personal and professional growth.
6. Entrepreneurial Pursuits: If you have entrepreneurial aspirations, app development can be a game-changer. With MIT App Inventor, you can create proof-of-concept apps, MVPs (Minimum Viable Products), or fully functional apps to launch your start-up or business idea.
7. Educational Applications: For educators and students, app development can enhance the learning experience. By creating educational apps, quizzes, or interactive resources, you can engage learners and foster innovative teaching methods.
8. Career Advancement: App development skills are highly sought after by employers. Adding mobile app development to your skillset can enhance your employability and make you stand out in the job market.
9. Personal Projects and Hobbies: If you have specific app ideas or want to develop apps for personal projects or hobbies, this course equips you with the tools to turn those ideas into reality.
10. Future-Proofing: Mobile app development is an ever-evolving field, and the demand for app developers is likely to grow. By opting for this course, you invest in a skillset that remains relevant and in-demand in the digital age.

In summary, opting for the Mobile App Development using MIT App Inventor course empowers you with a versatile and valuable skillset. It is an excellent starting point for beginners in app development, enabling you to bring your app ideas to life, showcase your creativity, and open doors to various personal and professional opportunities in the world of mobile apps.

Who can opt for this course?

1. B.A (Bachelor of Arts) Students: B.Students can opt for this course to learn mobile app development and enhance their digital skills. They can create mobile apps related to their artistic interests, social causes, or personal projects. For example, they can design apps for storytelling, art portfolios, event management, or language learning.

2. B.Sc (Bachelor of Science) Students: B.Sc students can take this course to explore mobile app development in the context of their scientific interests. They can build apps to visualize scientific data, create simulations, or facilitate data collection in the field. Mobile apps can be valuable tools for conducting scientific research and experiments.

3. B.Com (Bachelor of Commerce) Students: B.Com students can opt for this course to gain a practical understanding of mobile app development for business purposes. They can create apps for managing finances, inventory, or customer interactions. Additionally, they can explore e-commerce apps and online business opportunities.

4. B.B.A (Bachelor of Business Administration) Students: B.B.A students can benefit from this course to learn how to create mobile apps for business management, marketing, and customer engagement. They can explore app development for start-ups, entrepreneurial ventures, or corporate projects.

5. B.Ed (Bachelor of Education) Students: B.Ed students can take this course to learn how to integrate technology into their teaching methods. They can create educational apps for interactive learning, quizzes, and subject-specific resources to enhance their teaching practices.

6. B.Pharm (Bachelor of Pharmacy) Students: B.Pharm students can opt for this course to explore mobile app development in the context of healthcare and pharmaceuticals. They can create medication reminder apps, health tracking apps, or patient education resources.

7. B.Sc (Bachelor of Social Sciences) Students: B.Sc students in social sciences can take this course to explore mobile app development for conducting surveys, data collection, and social research. They can create apps to engage with communities or communicate research findings effectively.

8. Students from Other Disciplines: Students from various other disciplines can benefit from this course by using mobile app development as a creative outlet or to complement their primary fields of study. They can create apps for personal projects, community initiatives, or hobbies.

In summary, the Mobile App Development using MIT App Inventor course is inclusive and welcomes students from different disciplines. It empowers learners with valuable digital skills and offers an opportunity to explore mobile app development as a means of creative expression, problem-solving, and addressing real-world challenges.

Semester 1

Theory: 1 credit, Practical 2 credits(3 credit course)

Title of the course : **Mobile App Development using MIT App Inventor**
Duration : **6 months (online)**
Broad Area/Sector : **Coding**
Sub Sector : **Mobile App Development**
Name of Proposed Skill Partner : **AnsrCoach Eduventures Pvt. Ltd.**
Pre requisite of the candidate **: Pursuing Graduation in any Discipline**
Job Prospects : **Mobile App Developer, App Programmer, Application Developer, Software Engineer (Mobile Apps), Mobile Software Developer, App Designer, Android/iOS Developer, Mobile App Tester, UX/UI App Designer, Mobile App Consultant**

Unit	Topic	General/Skill Development	Theory/Practical/ Training/Internship	Number of theory Hours	Number of Skill Hours
Unit 1	**Basics of Computer** Introduction to Computer, Memory, CPU,I/O devices.	General	Theory	2	
	• Operating a Computer.	Skill Development	Practical		3
Unit 2	**Frontend and Backend**	General	Theory	2	
	• Component: Visible and Non Visible • User Interface.	Skill Development	Practical		3
Unit 3	**Introduction to MIT App Inventor**	General	Theory	2	
	• Different components, Blocks, Design, Creating new project. • Functions of: Datepicker, Label, Button, Listpicker, Slider, WebViewer, Spinner, Switch, ListView, Notifier. • Implementation of above concepts	Skill Development	Practical		15
Unit 4	**Programming Debugging, Event Handling Overview of Design Process**	General	Theory	3	
	• Designing an application • Practise sheets on Designing • **Developing Application 1**	Skill Development	Practical		10
	Special Session on Learning	General	Theory	2	

	Constructively				
Unit 5	**Conditional Statements** • if statements, if-else statement, nested if-else statement, if-else-if ladder, switch statement. • Lists: Ordered and Unordered • Implementation of all conditional statements • **Use of various List blocks**	Skill Development	Practical		15
Unit 6	**Iterations** Types: Count Controlled and Condition Controlled **Count Controlled Iteration:** Tail Recursion. **Condition Controlled Iteration:** do-while loops, while loops, for loops. Importance of Iterations.	General	Theory	3	
	• Worksheet on implementation of Conditional Statements. • Implementation of Iterations. • **Developing Application 2**	Skill Development	Practical		14
	Special Session on "Why Tech is important?"	General	Theory	1	

By the end of this semester, you will gain proficiency in the following areas:

1. Basics of Computers: Understanding computer components, memory, CPU, and I/O devices.
2. Operating a Computer: Gaining knowledge of computer operation and navigation.
3. Frontend and Backend: Learning about visible and non-visible components, user interface, and how they interact in an application.
4. MIT App Inventor: Becoming familiar with the platform, its components, blocks, and creating new projects.
5. Implementing Components: Understanding the functions of various components like Datepicker, Label, Button, Listpicker, Slider, WebViewer, Spinner, Switch, ListView, and Notifier.
6. Programming and Debugging: Gaining skills in programming, event handling, and debugging applications.
7. Designing an Application: Learning the design process and practicing application design.
8. Conditional Statements: Implementing if statements, if-else statements, switch statements, and working with ordered and unordered lists.
9. Iterations: Understanding count-controlled and condition-controlled loops (do-while, while, for), and the importance of iterations in programming.
10. Developing Applications: Creating two practical applications using MIT App Inventor.

Overall, you will acquire hands-on experience in mobile app development, programming logic, and design principles. You will be capable of developing functional mobile applications and gaining insights into the significance of technology in various fields.

Certificate: Course Completion Certificate Level 1

Semester 2

Theory: 1 credit, Practical 2 credits(3 credit course)

Title of the course : **Mobile App Development using MIT App Inventor**
Duration : **6 months (online)**
Broad Area/Sector : **Coding**
Sub Sector : **Mobile App Development**
Name of Proposed Skill Partner : **AnsrCoach Eduventures Pvt. Ltd.**
Pre requisite of the candidate **: Pursuing Graduation in any Discipline**
Job Prospects : **Mobile App Developer, App Programmer, Application Developer, Software Engineer (Mobile Apps), Mobile Software Developer, App Designer, Android/iOS Developer, Mobile App Tester, UX/UI App Designer, Mobile App Consultant**

Unit	Topic	General/Skill Development	Theory/Practical/ Training/Internship	Number of theory Hours	Number of Skill Hours
Unit 1	**Procedures in Programming** Introduction	General	Theory	4	
	Creating procedures and functions	Skill Development	Practical		10
Unit 2	**Understanding Variables**	General	Theory	4	
	Using Variables in applications	Skill Development	Practical		10
Unit 3	**Algorithms in Programming**	General	Theory	7	
	Creating two mobile app to implement different algorithms	Skill Development	Practical		30
	Creating **Tic Tac Toe** and **Mosquito Killer** app using algorithms and variables	Skill Development	Practical		10

By the end of this semester, you will have achieved the following learning outcomes:

1. Procedures in Programming: Understanding the concept of procedures and functions, and how they contribute to the organization and structure of code.

2. Creating Procedures and Functions: Gaining hands-on experience in creating and implementing procedures and functions to modularize code and improve code re-usability.

3. Understanding Variables: Familiarity with variables and their role in storing and manipulating data during program execution.

4. Using Variables in Applications: Applying variables in practical applications to enhance program flexibility and efficiency.

5. Algorithms in Programming: Learning about algorithms and their importance in solving problems and creating efficient solutions.

6. Creating Mobile Apps with Algorithms: Developing two mobile applications that implement different algorithms, showcasing problem-solving skills in a real-world context.

7. Creating Tic Tac Toe App: Building a Tic Tac Toe game app that demonstrates algorithmic logic and utilizes variables for game state management.

8. Creating Mosquito Killer App: Designing a Mosquito Killer app that employs algorithms and variables to simulate mosquito elimination.

Overall, you will gain essential programming skills, including the creation and implementation of procedures, working with variables, and applying algorithms to develop functional mobile applications. You will acquire problem-solving abilities and practical experience in building apps that utilize algorithms to enhance user experiences and achieve specific objectives.

Certificate: Course Completion Certificate Level 2

Semester 3

Theory: 1 credit, Practical 2 credits(3 credit course)

Title of the course : **Mobile App Development using MIT App Inventor**
Duration : **6 months (online)**
Broad Area/Sector : **Coding**
Sub Sector : **Mobile App Development**
Name of Proposed Skill Partner : **AnsrCoach Eduventures Pvt. Ltd.**
Pre requisite of the candidate **: Pursuing Graduation in any Discipline**
Job Prospects **: Mobile App Developer, App Programmer, Application Developer, Software Engineer (Mobile Apps), Mobile Software Developer, App Designer, Android/iOS Developer, Mobile App Tester, UX/UI App Designer, Mobile App Consultant**

Unit	Topic	General/Skill Development	Theory/Practical/ Training/Internship	Number of theory Hours	Number of Skill Hours
Unit 1	**Images, Audio and Video** Adding images, audio and video to apps	General	Theory	5	
	Building a **Music** and **Video** application	Skill Development	Practical		10
Unit 2	**Deep dive through multimedia**	General	Theory	5	
	Creating an **Alarm** application	Skill Development	Practical		10
Unit 3	**Making games**	General	Theory	5	
	Accelerometer and Shaking, Random Numbers and Dolphin Game	Skill Development	Practical		25
	Creating a **Find my Phone** application	Skill Development	Practical		15

By the end of this semester, you will have acquired the following skills and knowledge:

1. Adding Images, Audio, and Video to Apps: Understanding how to incorporate multimedia elements like images, audio, and video into mobile applications to enhance user experiences and engagement.

2. Building a Music and Video Application: Gaining practical experience in creating a music and video application that allows users to interact with multimedia content.

3. Deep Dive through Multimedia: Exploring advanced multimedia features and functionalities to create more immersive and interactive applications.

4. Creating an Alarm Application: Designing an alarm application that utilizes multimedia elements like sound and visuals to set alarms and alerts.

5. Making Games: Learning game development techniques using multimedia elements and interactive features to create engaging and entertaining games.

6. Accelerometer and Shaking: Understanding the use of device sensors, such as the accelerometer, to detect shaking and create interactive app experiences.

7. Random Numbers and Dolphin Game: Implementing random number generation and applying it in a Dolphin Game app, showcasing randomness in app behaviour.

8. Creating a "Find My Phone" Application: Building a "Find My Phone" app that leverages multimedia features to locate a misplaced phone with audio and visual cues.

By the end of the semester, you will have hands-on experience in developing multimedia-rich mobile applications. You will be able to integrate images, audio, and video effectively, creating interactive games, alarm applications, and other engaging app experiences. Additionally, you will understand how to use device sensors to enhance app functionality, allowing for more immersive and user-friendly applications. Overall, you will be well-equipped to create innovative and dynamic mobile apps that incorporate multimedia elements to captivate users and meet various practical needs.

Certificate: Course Completion Certificate Level 3

Semester 4

Theory: 1 credit, Practical 2 credits(3 credit course)

Title of the course : **Mobile App Development using MIT App Inventor**
Duration : **6 months (online)**
Broad Area/Sector : **Coding**
Sub Sector : **Mobile App Development**
Name of Proposed Skill Partner : **AnsrCoach Eduventures Pvt. Ltd.**
Pre requisite of the candidate **: Pursuing Graduation in any Discipline**
Job Prospects **: Mobile App Developer, App Programmer, Application Developer, Software Engineer (Mobile Apps), Mobile Software Developer, App Designer, Android/iOS Developer, Mobile App Tester, UX/UI App Designer, Mobile App Consultant**

Unit	Topic	General/Skill Development	Theory/Practical/ Training/Internship	Number of theory Hours	Number of Skill Hours
Unit 1	**Putting everything together** Combining loops, conditional statements, functions, algorithms and audio/video	General	Theory	4	
	Building an interactive quiz application	Skill Development	Practical		20
Unit 2	**Introduction to Webview and WebAPI components**	General	Theory	6	
	Creating a browser app	Skill Development	Practical		20
Unit 3	**Introduction to Database**	General	Theory	5	
	Creating a list picker app with DB	Skill Development	Practical		20

By the end of this semester, you will have mastered the following skills and gained comprehensive knowledge in mobile app development:

1. Combining Loops, Conditional Statements, Functions, Algorithms, and Multimedia: Understanding how to integrate loops, conditional statements, functions, and algorithms with images, audio, and video to create dynamic and interactive mobile applications.

2. Building an Interactive Quiz Application: Gaining practical experience in developing an interactive quiz application that incorporates loops, conditional statements, and multimedia elements to engage users.

3. Introduction to Webview and WebAPI Components: Learning about Webview and WebAPI components, enabling the integration of web content and services into mobile apps.

4. Creating a Browser App: Developing a browser application that utilizes Webview and WebAPI components to display web content and enable web-based interactions.

5. Introduction to Databases: Understanding the fundamentals of databases and their role in app data storage and retrieval.

6. Creating a List Picker App with Database: Building a list picker application that utilizes a database to store and manage data, allowing users to select items from a list.

By the end of this semester, you will have a comprehensive understanding of mobile app development, from incorporating loops and conditional statements for dynamic functionalities to utilizing multimedia elements like images, audio, and video for interactive user experiences. You will be proficient in integrating web content and services into apps using Webview and WebAPI components. Additionally, you will have hands-on experience in working with databases to manage app data effectively. Overall, you will be equipped with the skills and knowledge to develop diverse, feature-rich, and user-friendly mobile applications that seamlessly combine various programming concepts and multimedia elements.

Certificate: Diploma Certificate

Course Outcome

- Mobile App Development: Competent in designing and building mobile applications for Android and iOS platforms using popular development frameworks.
- Data Analysis and Visualization: Proficient in data analysis, manipulation, and visualization, enabling data-driven decision-making and insights.
- Problem-Solving Skills: Developed strong problem-solving abilities to tackle complex challenges in diverse domains using programming and logical thinking.
- User-Centric Design: Emphasized user-centric design principles to create intuitive and user-friendly interfaces for applications.
- Database Management: Experienced in designing, managing, and querying databases for efficient data storage and retrieval.
- Multimedia Integration: Integrated images, audio, and video into applications to enhance user experiences and engagement.
- Web Services Integration: Incorporated web services and APIs into applications, enabling seamless interactions with external platforms.
- Team Collaboration: Developed teamwork and communication skills through group projects, enhancing collaboration in software development settings.
- Entrepreneurial Mindset: Cultivated an entrepreneurial mindset, capable of identifying opportunities and leveraging technology for business innovation.
- Real-World Projects: Gained hands-on experience in real-world projects, building a portfolio of practical applications and solutions.