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# **Project Description**

## **Introduction**

HJEZLE is a cutting-edge mobile application developed using flutter that revolutionizes the booking process for sports facilities. The application offers a user-friendly interface where sports enthusiasts can register, explore a wide variety of sports venues, and communicate directly with facility owners to reserve slots and obtain real-time updates. Facility owners, in turn, benefit from a platform that enables them to efficiently list, manage, and promote their venues. By integrating real-time backend services, HJEZLE aims to eliminate inefficiencies in traditional booking systems and foster enhanced communication engagement in the sports and recreational sectors.

## **Project Statement**

In Lebanon, access to sports facilities such as tennis courts, paddle arenas, and football fields remains a significant challenge due to the lack of a centralized and efficient booking system. Currently, individuals seeking to reserve a sports venue must rely on manual, time-consuming processes, often making multiple phone calls to inquire about availability, pricing, and location suitability. This fragmented approach not only results in inconvenience and inefficiency but also discourages people from engaging in sports activities, ultimately affecting community well-being and physical fitness. Moreover, there is a lack of transparency and accessibility regarding sports venues. Many individuals are unaware of the full range of facilities available near them, leading to missed opportunities and underutilized venues. The absence of a unified platform means users struggle to compare options based on location, cost, amenities, and time slots, forcing them to rely on word-of-mouth recommendations or outdated information. This issue is further exacerbated by inconsistent pricing models and limited communication channels between venue owners and potential users. To address these inefficiencies, we propose the development of a comprehensive mobile application that streamlines the sports venue reservation process. This platform will serve as an integrated marketplace, allowing users to seamlessly search for nearby facilities, view real-time availability, compare pricing, and book their preferred slots with minimal effort. By leveraging within Lebanon, digital automation and user-friendly interfaces, our solution aims to eliminate unnecessary hassle, enhance accessibility, and foster a more active sports culture. This application will not only benefit sports enthusiasts but will also provide venue owners with a structured and efficient way to manage their reservations, optimize facility usage, and increase revenue. By bridging the gap between demand and availability, our platform aspires to redefine sports facility booking, making it a streamlined, data-driven, and user-centric experience.

## **Project Overview**

**HJEZLE** is a revolutionary Flutter-built mobile application transforming sports facility booking. It provides a streamlined and intuitive solution for both sports enthusiasts and venue operators. Users can easily browse a wide range of sports venues, check availability, and reserve spaces, all from their mobile devices. Beyond field reservations, the app also allows users to book spots for sports events. **HJEZLE** also provides a user-friendly interface enabling users to explore available sports facilities, check real-time availability, and communicate directly with venue owners. The app aims to replace inefficient manual booking processes with an automated, digital solution that enhances accessibility and convenience.

For venue owners, **HJEZLE** offers an efficient platform to manage facilities, set available timeslots, and streamline the entire booking process. Real-time updates and direct communication features empower owners to effectively promote, manage, and optimize bookings, enhancing operational efficiency.

**HJEZLE** eliminates tedious phone calls and inquiries, providing instant access to information and facilitating a faster, more reliable booking experience. The platform operates on a revenue-sharing model, taking commission from each booking to ensure sustainable growth for both the app and the venues. With **HJEZLE**, finding and booking sports facilities is effortless. Simply open the app, choose your venue, and secure your reservation in seconds. Built using Flutter for cross-platform support and powered by Firebase for real-time backend services, **HJEZLE** bridges the gap between facility providers and users, fostering a more organized and efficient booking experience.

## **Project Objectives**

The objectives of **HJEZLE** revolve around improving the accessibility and efficiency of sports venue reservations. Traditional booking methods often involve phone calls, in-person visits, or social media inquiries, which can be time-consuming and unorganized. By leveraging a digital platform, the project aims to centralize all booking-related tasks, ensuring a seamless experience for both users and venue owners. The platform not only facilitates easy reservations but also provides a marketplace where venue owners can promote their services, set pricing, and communicate with potential customers. Additionally, security and reliability are key aspects of the system, ensuring that users' data is protected and that transactions are carried out smoothly.

The main objectives of the project are the following:

* Developing a mobile application that allows users to browse and book sports venues in a few simple steps.
* Integrating a secure authentication system that enables users to register and log in easily.
* Providing venue owners with a platform to list their sports facilities, including location, pricing, and availability.
* Enabling real-time communication between users and venue owners for better coordination.
* Implementing a secure payment system that supports online transactions for booking confirmations.
* Ensuring scalability and performance by using an efficient backend, such as Firebase.

## **Background**

The sports and recreational industry have seen tremendous growth in recent years, driven by increased health awareness and the popularity of organized sports. In countries like Lebanon, local communities place great value on accessible sports facilities, yet many venues suffer from outdated booking systems and manual processes. Traditional methods often result in double bookings, inefficient resource allocation, and a disconnect between service providers and customers. In this context, digital transformation becomes essential. By adopting modern software solutions such as HJEZLE, stakeholders in the sports industry can enjoy faster, more reliable reservation processes, improved communication channels, and enhanced customer satisfaction. This digital shift not only addresses immediate operational challenges but also supports long-term growth by promoting local sports and recreational activities. Furthermore, integrating real-time communication and data management features fosters a more interactive and responsive environment, which is vital for competitive markets.

In response to the growing need for a streamlined booking system, the HJEZLE mobile application was conceived. Built using Flutter, the app aims to address these pressing challenges by providing an all-encompassing solution for booking sports facilities. HJEZLE allows users to effortlessly browse, and book available sports venues based on location, sport, and availability, eliminating the need for lengthy phone calls and manual coordination. Venue owners, in turn, will be able to manage their facilities, track bookings, and promote their offerings on a centralized platform designed to increase operational efficiency.

The app seeks to provide a seamless and secure booking experience, with features such as real-time availability updates, instant bookings, and a secure payment system, designed to cater to both sports enthusiasts and venue operators. Moreover, HJEZLE’s user feedback system, personalized profiles, and social media sharing will foster greater engagement, enhance user experience, and help users make informed decisions based on reviews and preferences.

By addressing the gaps in the current sports booking system, HJEZLE is poised to revolutionize how sports facilities are booked in Lebanon, making it easier for individuals to enjoy recreational activities and for venue owners to operate their facilities more efficiently. The app stands to contribute to the growth of the sports culture in Lebanon, providing a more connected and active community.

## **Literature Review**

A review of similar products and academic research underscores the need for a sophisticated, user-friendly booking system in the sports industry. In Lebanon, a study by Abdul Rahman et al. (2022) explored the optimization of sports facility booking systems, emphasizing the benefits of localized, cost-effective solutions while also noting challenges related to scalability and user interface design. Commercially, the Sporty app—reviewed by Global Innovations Inc. (2021)—demonstrates strong real-time booking capabilities and an intuitive user interface tailored to its local market; however, despite its usability, it lacks integrated communication tools that can streamline customer support. On an international level, the PlayFinder platform, as analyzed by TechCrunch (2020), offers a comprehensive multi-vendor database and advanced functionalities, yet it suffers from high subscription fees and a complex navigation structure that may deter casual users. These examples illustrate a common trend: while many existing solutions excel in specific areas, they often struggle to provide a holistic experience that combines real-time functionality, ease of use, and integrated communication.

The literature indicates that the ideal solution should merge the benefits of real-time booking and dynamic user interfaces with robust communication features and efficient administrative management. HJEZLE is designed to meet these demands by leveraging modern cross-platform technologies and backend-as-a-service (BaaS) platforms that offer scalable, secure, and flexible support.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Ref # | Authors/Sources | Description | Advantages | Problems |
| 1 | Abdul Rahman et al. (2022) | Study on optimizing sports facility booking systems in Lebanon with a focus on localized, cost-effective solutions. | Cost-effective; user-centric; addresses local market needs. | Scalability challenges; occasional interface design issues |
| 2 | Global Innovations Inc. (2021) – Sporty App Review | Review of the Sporty app for sports venue booking, emphasizing real-time booking and an intuitive UI | Real-time booking; simple and intuitive interface; group booking feature. | Lack integrated communication tools; limited administrative functions for venue owner. |
| 3 | TechCrunch (2020) – PlayFinder App Analysis | Analysis of PlayFinder, a global platform offering multi-vendor support and advanced booking functionalities. | Extensive database; robust multi-vendor support; advanced features. | High subscription fees; complex navigation structure. |
| 4 | OpenPlay | OpenPlay is a UK-based app for booking community sports venues like football, tennis, and cricket. | Wide network of sports venues; user-friendly interface; group booking; venue reviews and ratings. | Limited to the UK; lacks comprehensive management tools for venue owners. |
| 5 | BookMySports | BookMySports is an Indian platform for real-time booking of various sports facilities, including cricket, badminton, and football. | Extensive range of facilities; real-time booking; strong customer support; discounts and offers. | Limited international reach; inconsistent availability and pricing; unreliable user reviews. |

## **Applications:**

Real-Time Availability: Without having to phone or come to the facility, users can see the current availability of different pitches in their area, making it easy for them to choose and reserve a time window that works for them.

Group Booking and Management: By allowing users to invite friends or teammates to join a game, the app can help with group bookings. In addition, it can send out notifications for next games and handle payments.

Rating and Reviews: Based on their personal experiences, users are able to evaluate and review pitches. This feature encourages facility owners to uphold high standards and assists others in making well-informed decisions.

Discounts and Promotions: To entice regular users to make reservations through the app, it may provide exclusive discounts, loyalty plans, or promotions.

Event Planning: Using the app, users can plan tournaments or informal get-togethers, setting up games, inviting players, and even keeping score or statistics for competitive play.

## **Alternative Design:**

The "Community Sports Hub" is an innovative design concept for a pitch reservation app that emphasizes user engagement and social interaction. It features a personalized dashboard that displays upcoming bookings, favorite pitches, and recent activities, along with a map integration that highlights nearby pitches filtered by sport type, availability, and user ratings. Users can click on each pitch for detailed information, including photos and amenities. The app also incorporates social features, allowing users to connect, form teams, and challenge friends to matches, while enabling the creation and sharing of community events. Additionally, it offers skill level filters to help users find suitable matches and groups, and includes push notifications for booking confirmations, reminders for upcoming matches, and alerts for available pitches nearby. This design aims to foster a vibrant sports community while streamlining the pitch reservation process.

# **Project Planning**

Project planning is the foundation upon which successful initiatives are built. It involves developing a comprehensive roadmap that outlines objectives, deliverables, timelines, resource allocation, risk management, and communication strategies. Effective planning considers both the big picture and granular details, integrating elements such as a Work Breakdown Structure (WBS), Gantt charts, and stakeholder analysis. By breaking the project into manageable tasks and milestones, the planning phase not only forecasts potential challenges but also sets a clear path to achieving strategic objectives. In today’s competitive environment, project planning also emphasizes adaptability, integrating iterative review points and contingency measures to respond to unforeseen issues while staying aligned with organizational goals.

## **Project Constraints**

Hjezle’s development faces several key constraints that must be managed carefully throughout the project lifecycle. On the technical side, the app is required to run smoothly on both iOS and Android platforms, using Flutter and FlutterFlow as the designated front-end frameworks. The backend infrastructure must support robust user authentication, real-time reservation capabilities, and secure payment processing through reliable payment gateways. Additionally, a scalable cloud-based hosting solution is necessary to manage user data and reservations, while strict adherence to standard security protocols is essential for protecting sensitive information. Time constraints dictate that the entire development cycle, including comprehensive testing and debugging, must be completed within a fixed period to ensure a timely launch. Budget limitations are also in place, with recurring infrastructure costs related to cloud services, API integrations, and payment gateways; expenses may further increase due to paid plugins and services required by FlutterFlow, as well as funds allocated for post-launch marketing and customer support. Finally, user constraints mandate that the application remain simple and accessible, ensuring an intuitive UI/UX design that caters effectively to both venue owners and players.

## **Project Issues**

Every project encounters a range of issues throughout its lifecycle. Common challenges include integration difficulties between various systems, misinterpretation or incomplete documentation of requirements, and scope creep driven by uncontrolled changes. Communication breakdowns and stakeholder misalignments further exacerbate these issues. To mitigate risks, effective projects implement regular status reviews, risk assessment sessions, and change control procedures. Some specific issues often observed are:  
• Inadequate user involvement  
• Unrealistic deadline and budget estimations  
• Poor interdepartmental coordination  
• Resistance to change from stakeholders  
Addressing these issues early through comprehensive monitoring and adaptive management techniques is essential for steering the project back on course.

## **Team Members’ Tasks**

A project’s success relies on a well-coordinated team where each member has clearly defined roles and responsibilities. The project manager oversees the overall process, ensuring that objectives are met and that communication flows smoothly between stakeholders. Designers create intuitive and visually appealing interfaces, while developers implement the core functionalities, integrating backend systems and ensuring technical robustness. Quality assurance teams conduct rigorous testing, and support staff handle deployment and post-launch maintenance. Employing tools like the RACI matrix (Responsible, Accountable, Consulted, Informed) ensures that each task is assigned appropriately and that accountability is maintained throughout the project lifecycle. Clear task delegation fosters collaboration and minimizes redundancies.

## **Ethical Issues**

Ethical considerations are paramount in project management, as decisions made at every stage can affect the welfare of both the organization and its stakeholders. Project managers are expected to adhere to professional codes of conduct, ensuring honesty, fairness, and transparency in all dealings. Ethical issues might include conflicts of interest, data privacy concerns, and the potential for bias in decision-making. Establishing clear ethical guidelines and having an independent review process can help resolve dilemmas when they arise. For instance, when budget pressures tempt managers to compromise quality, a robust ethical framework ensures that the interests of end users and the broader community are not sacrificed. This commitment to ethical behavior builds trust and fosters long-term sustainability.

## **Software Model Process**

For Hjezle, we adopted a hybrid software development model that combines the strengths of agile methodologies and iterative development. This approach enabled us to benefit from agile’s rapid iterations, continuous user feedback, and flexibility in handling evolving requirements, while also incorporating the structured review and refinement cycles typical of iterative models. By merging these frameworks, we could implement robust quality assurance, effective risk management, and proactive process improvements throughout the project lifecycle. This model was particularly well-suited to managing Hjezle’s complex requirements, technical constraints, and dynamic stakeholder needs, ensuring a balanced and responsive development process that met both short-term deadlines and long-term strategic objectives.

## **Feasibility Study**

Before significant resources are committed, a feasibility study assesses the viability of the project from multiple perspectives. Commonly evaluated factors include:  
• **Technical Feasibility:** Can the organization’s current technology and expertise support the project requirements?  
• **Economic Feasibility:** Does the cost-benefit analysis justify the investment?  
• **Legal Feasibility:** Are there regulatory or legal constraints that could impact the project?  
• **Operational Feasibility:** How well will the project integrate with existing operations?  
• **Scheduling Feasibility:** Can the project be completed within the required timeframe?  
Often summarized by the TELOS framework (Technical, Economic, Legal, Operational, Scheduling), the study provides a clear decision-making basis for proceeding, revising, or abandoning a project.

## **Tools/Technology**

To develop **Hjezle** efficiently, a diverse and carefully selected array of software tools, frameworks, and cloud services is employed to ensure a robust, scalable, and user-friendly mobile application for both iOS and Android platforms. The development process is structured into two key components: **front-end** and **back-end**, each utilizing industry-leading technologies to maximize performance, security, and efficiency.

**Front-End Development**

The front-end of **Hjezle** focuses on delivering a seamless and intuitive user experience. **Flutter**, a powerful cross-platform framework, was chosen for its ability to compile to native code, offering **high performance and smooth animations** across both iOS and Android devices. Complementing this, **FlutterFlow**, a no-code/low-code development platform, accelerates UI design and front-end implementation, enabling rapid iterations without extensive manual coding. This approach significantly reduces development time while maintaining **pixel-perfect design consistency**.

For location-based functionalities, the **Google Maps API** is integrated to allow users to **search for sports venues, access navigation features, and retrieve real-time location data**. Authentication is handled by **Firebase Authentication**, ensuring secure and streamlined login options via **email, phone number, or third-party providers (Google, Facebook, Apple, etc.)**. To enhance the development workflow, version control is managed through **GitHub or GitLab**, facilitating efficient code collaboration. Internal team communication is streamlined via **Discord and WhatsApp**, ensuring effective coordination throughout the development cycle.

**Back-End Development**

The back-end architecture of **Hjezle** is designed to be **scalable, secure, and optimized for real-time interactions**. At its core, **Firebase** is utilized to handle database management, authentication, and cloud storage. Specifically, **Firestore (Firebase’s NoSQL database)** is implemented to **provide real-time syncing of reservations, user data, and venue availability**, making it ideal for a sports booking platform. An alternative **Supabase (Postgres-based open-source database)** is considered for cases where relational database functionalities are needed.

To ensure **secure payments and transactions**, the platform integrates trusted payment gateways such as **Stripe, PayPal, and local providers**, offering multi-currency support and fraud protection. File storage is managed through **Firebase Storage and AWS S3**, enabling users to **upload and retrieve images, documents, and other media securely**. Additionally, **Node.js** is available as a back-end processing option for scenarios where additional server-side logic is required beyond Firebase’s serverless capabilities.

**Testing, Security, and Deployment**

Comprehensive testing is a critical aspect of **Hjezle’s** development, ensuring reliability and performance across all user interactions. The **Flutter Testing Framework** is employed for **unit and integration testing**, verifying the stability of core functionalities. Security testing and API validation are conducted using **OWASP ZAP and Postman**, while **Firebase Performance Monitoring** continuously tracks the app’s responsiveness and load times.

Finally, **deployment and hosting** are managed through the **Google Play Store and Apple App Store**, ensuring that **Hjezle** reaches its intended audience efficiently. With **Firebase’s auto-scaling capabilities**, the platform can handle increasing user demand without performance degradation, making it a highly **resilient and scalable** solution for sports facility reservations.

By leveraging these cutting-edge tools and technologies, **Hjezle** is designed to be a **high-performance, secure, and scalable** platform that offers a seamless experience for users while optimizing operational efficiency for venue owners.

## **Standards**

Adherence to industry standards ensures consistency, reliability, and quality across all project phases. Standards such as the Project Management Body of Knowledge (PMBOK® Guide), ISO 21500:2012 for project management, and specific technical standards (e.g., IEEE, ISO/IEC standards) provide a structured framework for project execution. These guidelines define best practices for risk management, quality assurance, and stakeholder communication, among other areas. Compliance with such standards not only streamlines internal processes but also enhances credibility with clients and stakeholders. The integration of standard operating procedures and regular audits ensures that projects remain aligned with both regulatory requirements and organizational objectives.

## **Milestone**

Below is a table summarizing the key project milestones for Hjezle. These milestones serve as critical checkpoints throughout the project lifecycle, enabling the team to monitor progress, ensure accountability, and make timely adjustments to meet strategic objectives.

|  |  |
| --- | --- |
| **Milestone** | **Description** |
| Completion of Initial Planning Phase | Finalize project scope, objectives, and a detailed project plan. |
| Finalization of Design Phase | Complete UI/UX design, system architecture, and technical specifications. |
| Development of Working Prototype | |  | | --- | |  |  |  | | --- | | Build a functional prototype to validate core features and design assumptions. | |
| Completion of Integration and Testing | |  | | --- | |  |  |  | | --- | | Integrate all components and conduct thorough testing to ensure quality, performance, and reliability. | |
| Formal Deployment and Launch | |  | | --- | |  |  |  | | --- | | Publish the app on the Google Play Store and Apple App Store after final validations. | |
| Post-Implementation Review | Evaluate project outcomes, capture lessons learned, and identify opportunities for future improvements. |

This table clearly outlines each milestone along with its description, providing a concise view of the project's major achievements and their significance. Each milestone acts as a target that supports effective monitoring and timely adjustments throughout the Hjezle development process.

# **Requirements**

**Functional requirements**

* User registration and authentication: The system allows users (players and venue owners) to register using email, and that email will be verified upon registration in order to have a secure login for the users.
* Venue owner functionality: To add a venue, the system will require details such as address, pricing, images, videos, available time slots. And wait for the verification from the application team. Venue credentials can be edited or deleted, and the owner can view and manage bookings for their venue.
* Venue discovery and search: The system allows the users to search and filter venues by location, sport type, price range, date and time of availability, rating, facilities (restrooms, lockers, parking, lights). And recommend venues based on past bookings or top-rated venues.
* Booking and reservation: The system allows users to select time slot for booking if taken it will show a certain message to choose another time slot (prevent duplicate booking) , real-time update of venue availability immediately, conformation of booking via email or phone number.
* Payment processing: The system shall supply secure payment and have a payment conformation and allow users to pay in cash for the owner (if that option is chosen by the owner), the system shall not proceed if the payment fails.
* Review and rating: The system allows users to have a star rating system and comment but before that the comment will undergo a review by the team to see if it’s suitable to be live.
* Edge case handling: The system shall handle cases where the internet disconnected during booking (by showing an error and a retry button).
* Admin panel: The system allows the user to view all bookings and payments, manage his uploaded and verified venues.

**Data Requirements**

**The data used is structured (spreadsheets, databases), unstructured (images, videos), semi-structured (XML, JSON).**

* User data: Full name, email address, password (encrypted), phone number, user type player or venue owner (be a venue owner when uploaded at least one venue), booking history, review history.
* Venue data: Name, location (address and map coordinates), sports type, available time slots, pricing (Hourly), facilities (restrooms, lockers, parking, lights), images, owner ID.
* Booking data: Booking ID, user ID (who booked), venue ID, Date and time slots, booking status (confirmed, cancelled, pending), payment status.
* Payment data: Payment ID, booking ID, user ID, payment method, amount, payment status.
* Review and rating data: User ID, venue ID, rating, review text.
* Recommendation system data: User’s past booking (with all its data), venue popularity (number of bookings, average rating and sponsored venue).
* System logs and analytics: Search history, failed bookings, failed payments, crash reports and errors.

**Non-functional requirements**

* Performance requirements: The system shall respond to the user within a very short time and that's also for the search results. The application should support a high number of users at the same time without crashing.
* Dependability: The system must be available most of the time and in case of a crash it should be dealt with as soon as possible in the shortest time it could be. And no data losses must occur during the transaction failure or crashes
* Maintainability and supportability requirements: The system must follow an architecture that allows future updates, The code must follow clean coding practices and should be well documented. Logs and records must be maintained for errors and critical actions that occur and that's for debugging purposes.
* Security requirements: All user passwords must be encrypted, and all communication shall be over HTTPS, also only authenticated users can make bookings or add venues. Payment should be handled through a secure software (If it was off the shelf).
* Usability and humanity requirements: The application shall be user friendly and support all types of users, and it shall also include feedback messages on the system.
* Look and feel requirements: The application must contain a clean interface using consistent fonts, colors, icons. And it must match business identity.
* Operational and environmental requirements: The application must run on both android and IOS and not require high-end devices and specifications or fast internet speeds to run efficiently.
* Cultural and political requirements: The app must support local languages and the world's most spoken languages, and it shall avoid any political or culturally sensitive conting in the user interface or marketing.
* Legal requirements: The system should use the data protection laws. A privacy policy and terms shall be available for all users.

# **References:**

1. Abdul Rahman, et al. "Optimizing Sports Facility Booking Systems in the Middle East." 2022.
2. Global Innovations Inc. "Sporty App Review." 2021.
3. TechCrunch. "PlayFinder App Analysis." 2020.
4. Firebase. "Firebase Documentation." Google, <https://firebase.google.com/docs>.
5. OpenPlay. "OpenPlay: Book Your Sports Venue." OpenPlay, n.d. <https://www.openplay.co.uk>.
6. BookMySports. "BookMySports – Real-Time Booking for Sports Venues." BookMySports, n.d. <https://www.bookmysports.com>.
7. Project Management Institute. *A Guide to the Project Management Body of Knowledge (PMBOK® Guide).* 6th ed., Project Management Institute, 2017.
8. Sommerville, Ian. *Software Engineering.* 10th ed., Pearson, 20
9. Atkinson, Roger. "Project Management: Cost, Time, and Quality, Two Best Guesses and a Phenomenon." *International Journal of Project Management*, vol. 17, no. 6, 1999, pp. 337-342.
10. ISO. *ISO 21500:2012 – Guidance on Project Management.* International Organization for Standardization, 2012.
11. McLeod, Sam. "Interrelated Attributes of Project Feasibility: Visualizing the TELOS Framework." *ScienceOpen Posters*, 29 June 2021.
12. Bentley, Lonnie, and Jeffrey Whitten. *System Analysis & Design for the Global Enterprise.* 7th ed., McGraw-Hill, 2007.
13. IEEE Computer Society. *Software Engineering Code of Ethics and Professional Practice.* IEEE, 1999, <https://ethics.acm.org/code-of-ethics/software-engineering-code/>.
14. OWASP Foundation. *Application Security Verification Standard (ASVS).* v4.0.3, 2021, https://owasp.org/www-project-application-security-verification-standard/.