Charcoal sketching tutorial Printable PDF

Charcoal Sketching Tutorial: Unlock Your Artistic Potential

Charcoal sketching tutorial is an invaluable resource for artists of all levels eager to explore the dramatic and expressive world of charcoal art. Whether you're a beginner just starting out or an experienced artist looking to refine your skills, mastering charcoal sketching can open new avenues for creative expression. This comprehensive guide will walk you through the essential techniques, tools, and tips to help you create stunning charcoal drawings that capture depth, contrast, and emotion.

Getting Started with Charcoal Sketching

Choosing the Right Materials

Before diving into your artwork, selecting the appropriate materials is crucial. Here's what you'll need:

- Types of Charcoal:
- Vine Charcoal: Light, flexible, ideal for initial sketches and subtle shading.
- Compressed Charcoal: Darker, denser, perfect for bold lines and deep shadows.
- Stick vs. Pencil: Charcoal sticks provide broad strokes, while charcoal pencils offer precision.

- Paper Selection:
- Texture: Use papers with a medium to rough surface to hold charcoal effectively.
- Weight: Heavier weight paper (e.g., 160 lb or higher) prevents warping and allows for erasing.

- Additional Tools:
- Blending stumps or tortillons for smooth shading.
- Kneaded erasers for highlighting and correcting mistakes.
- Fixative spray to preserve your artwork.

Setting Up Your Workspace

Create a comfortable environment that minimizes dust and allows for good lighting. Natural light is preferred, but a well-placed lamp with adjustable brightness works well too. Keep your materials

organized and within reach to maintain workflow efficiency.

Basic Techniques for Charcoal Sketching

Drawing with Charcoal

Start with light, loose lines to outline your composition. Use the side of the charcoal stick for broad strokes and the tip for fine details. Keep your hand relaxed to prevent unwanted marks.

Shading and Blending

Mastering shading techniques adds depth and realism. Here are some common methods:

- Hatching: Parallel lines to build up tone.
- Cross-Hatching: Overlapping hatching lines for darker values.
- Stippling: Dots to create texture and gradation.
- Smudging/Blending: Use a blending stump or finger to soften transitions.

Creating Contrast and Depth

Effective use of light and shadow is essential. Focus on:

- Identifying your light source.
- Using darker charcoal for shadows and lighter tones for highlights.
- Building layers gradually for rich, nuanced shading.

Highlights and Corrections

Use a kneaded eraser to lift charcoal for highlights or corrections. For bright highlights, erase carefully to reveal the paper underneath.

Step-by-Step Charcoal Sketching Process

1. Planning Your Composition

Begin by lightly sketching the basic shapes and layout of your subject. Keep lines loose and adaptable.

2. Establishing Light and Shadow

Identify the main light source and block in shadows with a softer charcoal or blending techniques. Use a light touch to build tone gradually.

3. Refining Details

Gradually add finer details, such as facial features, textures, or intricate elements, using sharpened charcoal pencils or sticks.

4. Deepening Shadows and Highlights

Enhance contrast by darkening shadows and lifting highlights with kneaded erasers. This step adds dimension and drama to your work.

5. Final Touches and Fixing

Review your drawing, refine edges, and add any last details. Once satisfied, spray with fixative to prevent smudging.

Advanced Tips for Charcoal Sketching

Layering Techniques

Build depth by layering different shades of charcoal. Start with light layers and gradually increase darkness, blending as needed.

Texture and Detail

Experiment with various stroke directions and pressures to create textures like hair, fabric, or rough surfaces.

Creating Atmosphere

Use softer blending and subtle gradations to evoke mood and atmosphere, such as misty backgrounds or dramatic lighting.

Experimenting with Styles

Charcoal allows for a range of styles?from hyper-realistic portraits to loose, expressive sketches. Don?t hesitate to explore different approaches.

Common Mistakes to Avoid and How to Fix Them

- Overworking the Paper:
- Fix: Use light strokes and build layers gradually.

- Ignoring Light Source:
- Fix: Always establish your light source early to maintain consistency.

- Rushing the Process:
- Fix: Take your time to build up tones and details carefully.

- Using Excessive Fixative:
- Fix: Apply in light, even coats to avoid darkening the drawing.

Practicing and Improving Your Charcoal Sketching Skills

Daily Sketching

Commit to sketching daily or regularly to build muscle memory and confidence.

Studying Other Artists

Analyze works by masters like Degas or Lautrec to understand their techniques and styles.

Participating in Challenges

Join online art challenges or local workshops to stay motivated and receive feedback.

Keeping a Sketchbook

Maintain a dedicated sketchbook to track your progress and experiment with different subjects and techniques.

Conclusion: Embrace the Charcoal Journey

Mastering charcoal sketching is a rewarding journey that combines technical skill with artistic intuition. With patience, practice, and the right techniques, you can create compelling artworks that showcase your unique vision. Remember to experiment fearlessly, learn from mistakes, and enjoy the process of bringing your ideas to life through the expressive medium of charcoal. Happy sketching!

Charcoal Sketching Tutorial: An In-Depth Exploration of Techniques, Materials, and Artistic Expression

Charcoal sketching has long been a fundamental practice in the world of fine arts, revered for its capacity to produce striking contrasts, rich textures, and a dramatic range of tones. As both an accessible medium for beginners and a sophisticated tool for professional artists, charcoal remains a cornerstone in the study and practice of drawing. This investigative review delves into the nuances of a charcoal sketching tutorial, exploring its pedagogical approaches, essential materials, foundational techniques, advanced practices, and the critical role it plays in artistic development.

Understanding the Fundamentals of Charcoal Sketching

Before embarking on a detailed tutorial, it is essential to grasp the core principles that underpin successful charcoal sketching. These include the nature of the medium, the importance of preparatory work, and the fundamental techniques that serve as building blocks for more complex applications.

The Nature of Charcoal as a Medium

Charcoal is a carbon-based drawing material derived from burned organic materials such as wood, vine, or compressed charcoal sticks. Its unique qualities include:

- Rich tonal range: From deep blacks to subtle grays, enabling high-contrast imagery.
- Ease of blending: Facilitates smooth transitions and gradients.
- Expressive mark-making: Offers a variety of stroke qualities, from sharp lines to soft smudges.
- Portability and affordability: Makes it accessible for learners and professionals alike.

However, its volatility and smudging tendencies require careful handling and specific techniques to harness its full potential.

Preparatory Steps: Setting the Stage for Success

A thorough charcoal sketching tutorial emphasizes the importance of preparation:

- Selecting the right materials: Quality charcoal sticks, appropriate papers, erasers, and fixatives.
- Choosing suitable paper: Typically, textured or medium-grain papers (e.g., charcoal or pastel paper) that grip the medium.
- Establishing a comfortable workspace: Good lighting, ventilation, and protective coverings.

Materials checklist:

- Vine charcoal sticks (for light lines)
- Compressed charcoal sticks (for darker tones)
- Charcoal pencils (for detailed work)
- Kneaded eraser
- Vinyl or plastic eraser
- Fixative spray
- Blending stumps or tortillons
- Textured drawing paper

Core Techniques in Charcoal Sketching

A comprehensive tutorial systematically introduces foundational techniques, enabling learners to build confidence and skill.

1. Creating Light Outlines and Under-Drawings

- Use vine charcoal for initial, loose sketches.
- Focus on establishing proportions, gestures, and composition.
- Keep lines light and erasable, avoiding heavy marks at this stage.

2. Building Value and Depth

- Transition from light outlines to mid-tones using softer or compressed charcoal.
- Use layering techniques, gradually darkening areas for depth.
- Employ cross-hatching or circular strokes for richer textures.

3. Blending and Smoothing

- Use blending stumps, fingers, or tissue to smooth transitions.
- Practice controlled blending to avoid over-smudging.
- Remember to leave some areas unblended for contrast and interest.

4. Adding Details and Highlights

- Use sharpened charcoal pencils or erasers for fine lines and highlights.
- Employ the kneaded eraser to lift out light areas and create reflective effects.
- Carefully refine contours and textures to enhance realism.

5. Fixing and Preserving the Work

- Use a fixative spray in a well-ventilated area.
- Lightly spray in multiple thin coats to prevent smudging.
- Handle the artwork carefully to avoid damage.

Advanced Techniques and Artistic Strategies

Once foundational skills are established, a skilled charcoal sketching tutorial guides artists through more complex practices.

Understanding Light and Shadow

- Study light sources and their effects on forms.
- Use chiaroscuro to create dramatic contrasts.
- Practice ?value mapping? to understand tonal relationships.

Texture and Detail Rendering

- Experiment with different stroke directions and pressures.
- Use stippling, scumbling, or hatching for varied textures.
- Capture subtle details such as hair, fabric, or skin textures.

Creating Depth and Atmosphere

- Use softer, lighter strokes in background areas.
- Employ darker, more intense strokes for foreground elements.
- Utilize atmospheric perspective to suggest distance.

Expressive and Abstract Approaches

- Break from realism to explore expressive mark-making.

- Use bold strokes and unconventional techniques for emotional impact.
- Combine charcoal with other media (e.g., pastel, ink) for mixed-media effects.

Pedagogical Approaches in Charcoal Sketching Tutorials

Effective tutorials often incorporate various teaching methodologies:

- Step-by-step demonstrations: Visual guides that progress from basic to complex.
- Theoretical explanations: Clarifying the purpose of each technique.
- Practice exercises: Focused tasks like still lifes, portrait studies, or gesture drawings.
- Critique and feedback: Opportunities for learners to evaluate and refine their work.
- Video tutorials and live workshops: Interactive formats that enhance understanding.

In-depth tutorials also emphasize the importance of patience, experimentation, and personal style development.

Challenges and Common Mistakes in Charcoal Sketching

A thorough review must acknowledge typical pitfalls:

- Over-blending leading to loss of contrast.
- Excessive smudging causing muddy tones.
- Insufficient planning resulting in disproportionate compositions.
- Using low-quality materials which compromise control and effects.
- Rushing through stages without proper layering and patience.

Recognizing and addressing these issues is integral to mastering charcoal sketching.

Conclusion: The Value of a Charcoal Sketching Tutorial in Artistic Development

A well-structured charcoal sketching tutorial is more than a set of instructions; it is a gateway to understanding fundamental artistic principles, developing technical prowess, and fostering creative expression. Whether for novices seeking to grasp the basics or seasoned artists exploring new techniques, such tutorials serve as invaluable resources.

The medium?s versatility and expressive power make charcoal an enduring favorite in the art community. Through diligent practice guided by comprehensive tutorials, artists can unlock new dimensions of their creative potential, producing works that resonate with depth, emotion, and

technical mastery.

In the evolving landscape of art education, the importance of detailed, accessible, and methodical charcoal sketching tutorials cannot be overstated. They bridge the gap between concept and execution, empowering artists to translate their visions onto paper with confidence and authenticity.

In summary, mastering charcoal sketching involves understanding the medium?s unique qualities, practicing foundational techniques, exploring advanced methods, and embracing experimentation. A thorough tutorial acts as both a guide and a catalyst for artistic growth, ensuring that practitioners can harness the full expressive potential of charcoal.

QuestionAnswer What are the basic materials needed for charcoal sketching? You will need charcoal sticks or pencils, blending stumps, kneaded erasers, regular erasers, textured paper, and fixative spray to preserve your artwork. How do I create realistic shading in a charcoal sketch? Start with light layers, gradually build up darker tones using different pressure levels, and blend smoothly with blending stumps or fingers to achieve realistic shading and depth. What techniques can I use to improve my charcoal sketching skills? Practice techniques such as hatching, cross-hatching, smudging, erasing highlights, and understanding light and shadow will help enhance your skills and create more dynamic sketches. How do I fix mistakes or unwanted marks in a charcoal sketch? Use a kneaded eraser to lift off excess charcoal gently, or lightly blend over mistakes to integrate them into the overall shading. Avoid overworking the paper to prevent damage. What are some tips for creating contrast and depth in a charcoal drawing? Focus on emphasizing darks and lights, vary your shading techniques, and consider the light source to create strong contrasts that add depth and dimension to your sketch. How can I protect my finished charcoal sketch from smudging or fading? Apply a fixative spray in light, even coats to set the charcoal and prevent smudging. Store your artwork in a protective folder or frame it behind glass for long-term preservation.

Related keywords: charcoal drawing, sketching techniques, art tutorial, shading methods, portrait sketch, art tips, drawing for beginners, charcoal art, sketching tools, art lessons

THE NEW AND IMPROVED FLASK MEGA TUTORIAL ENGLISH

The new and improved Flask Mega Tutorial English is an essential resource for developers seeking to master web development with Flask, a lightweight and flexible Python web framework. Whether you're a beginner or an experienced programmer, this comprehensive tutorial offers step-by-step guidance, best practices, and in-depth explanations that help you build robust web applications efficiently. In this article, we'll explore the key features and updates of the latest Flask Mega Tutorial, why it's a valuable resource, and how you can leverage it to enhance your

development skills.

Understanding the Flask Framework

What is Flask?

Flask is a micro web framework written in Python that emphasizes simplicity, flexibility, and extensibility. Unlike full-stack frameworks, Flask provides the core tools needed to build web applications, allowing developers to choose the components they wish to incorporate, such as databases, templating engines, and user authentication systems.

Why Choose Flask?

- Lightweight and Modular: Flask's minimalistic design makes it easy to understand and extend.
- Flexible: You can integrate any third-party extensions or libraries.
- Well-Documented: Extensive official documentation and tutorials.
- Active Community: A vibrant community that offers support and resources.

The Evolution of the Flask Mega Tutorial

Original Purpose

Created by Miguel Grinberg, the Flask Mega Tutorial was initially designed as a comprehensive guide for building a blog application from scratch. It covers fundamental concepts such as routing, database interactions, forms, authentication, and deployment.

Recent Updates and Improvements

The latest version of this tutorial has been revamped to include:

- Updated code snippets compatible with the latest Flask versions.
- Enhanced explanations of new features, such as Flask Blueprints and Context Locals.
- Additional security best practices and performance optimizations.
- Modern frontend integrations, including JavaScript frameworks.
- Expanded deployment guides, including containerization with Docker.

Key Features of the New and Improved Flask Mega Tutorial

1. Clearer Structure and Navigation

The tutorial has been reorganized for easier navigation, breaking down complex topics into manageable sections. This structure enables learners to progress logically from basic concepts to advanced topics.

2. Modern Development Practices

It emphasizes current best practices:

- Use of environment variables for configuration.
- Incorporating Flask extensions like Flask-WTF for forms.
- Implementing user authentication with Flask-Login.
- Secure password handling with hashing libraries.
- Using SQLAlchemy ORM for database management.

3. Expanded Coverage on Frontend Integration

The tutorial now includes sections on:

- Integrating JavaScript frameworks such as React or Vue.js.
- Using AJAX for dynamic content loading.
- Enhancing user experience with responsive design.

4. Deployment and DevOps

Guides on deploying Flask applications:

- Using Gunicorn and Nginx for production.
- Containerizing applications with Docker.
- Deploying to cloud platforms like Heroku or AWS Elastic Beanstalk.
- Setting up continuous integration and delivery pipelines.

5. Security Enhancements

Security remains a priority:

- Protecting against common vulnerabilities like CSRF and XSS.
- Implementing user session management.

- Securing sensitive data with encryption.

How to Access and Use the Flask Mega Tutorial

Official Resources

The tutorial is freely available on Miguel Grinberg?s official website and GitHub repository. It includes:

- Complete code examples.
- Step-by-step instructions.
- Additional exercises and challenges.

Prerequisites

Before starting, ensure you have:

- Basic knowledge of Python programming.
- Familiarity with HTML, CSS, and JavaScript.
- An environment set up with Python 3.6 or higher.
- Text editor or IDE such as VS Code or PyCharm.

Recommended Setup

- Install Flask via pip:

- `pip install Flask`

- Optional: Install virtual environment tools:

- `python -m venv venv`
- `source venv/bin/activate` (Linux/Mac)
- `venv\Scripts\activate` (Windows)

- Clone or download the tutorial code:

- GitHub repository:
https://github.com/miguelgrinberg/microblog

Step-by-Step Learning Path

1. Setting Up Your Flask Environment

Begin by creating a virtual environment and installing Flask. Learn how to structure your project directories and configure your application.

2. Building Your First Flask Application

Understand routing, request handling, and basic rendering with templates.

3. Working with Databases

Use SQLAlchemy to create models, perform CRUD operations, and manage database migrations.

4. User Authentication

Implement login, logout, registration, and password management with Flask-Login and Flask-Bcrypt.

5. Forms and Validation

Handle user input securely using Flask-WTF, including validation and error handling.

6. Testing and Debugging

Learn how to write unit tests and debug your application effectively.

7. Deployment

Prepare your application for production, set up servers, and deploy to cloud services.

Benefits of Following the Flask Mega Tutorial

- **Comprehensive Learning:** Covers a wide range of topics necessary for professional web

development.

- **Hands-On Practice:** Real-world examples and projects enhance understanding.
- **Community Support:** Access to forums and discussions for troubleshooting.
- **Up-to-Date Content:** Reflects current best practices and Flask features.
- **Portfolio Building:** Create complete projects to showcase your skills.

Conclusion

The new and improved Flask Mega Tutorial English remains one of the most valuable resources for web developers aiming to excel with Flask. Its comprehensive coverage, modern practices, and clear instructions empower learners to build scalable, secure, and high-performance web applications. Whether you're starting from scratch or refining your skills, this tutorial provides the guidance necessary to succeed in the competitive world of web development. Dive into the latest version today and take your Flask knowledge to the next level.

The New and Improved Flask Mega Tutorial in English: An In-Depth Review and Analysis

The Flask Mega Tutorial has long been regarded as a foundational resource for developers eager to master Flask, one of Python's most popular micro web frameworks. Recently, the tutorial has undergone significant updates, positioning it as an even more comprehensive and accessible guide for both beginners and seasoned programmers. This article explores the new and improved Flask Mega Tutorial in English, analyzing its structure, content enhancements, pedagogical strategies, and overall impact on the developer community.

Introduction to the Fluctuations and Evolution of the Flask Mega Tutorial

Historical Context

The Flask Mega Tutorial was originally authored by Miguel Grinberg, a well-respected figure in the Python community. Since its inception, it has served as a step-by-step guide to building web applications using Flask, covering everything from basic setup to deploying complex projects.

Over the years, as Flask itself evolved and new best practices emerged, the tutorial was periodically updated. The latest iteration stands out because it not only incorporates recent developments in Flask but also modernizes its teaching approach, making it more engaging and easier to follow.

Why the Update Matters

The significance of the recent overhaul lies in its responsiveness to the changing landscape of web development. The update addresses concerns such as:

- Compatibility with Flask 2.x and beyond.
- Integration with modern frontend technologies.
- Emphasis on best practices for security, testing, and deployment.
- Enhanced clarity and accessibility for non-native English speakers.

This refresh ensures that developers are equipped with relevant, up-to-date knowledge, fostering more effective and secure web applications.

Structural Overview of the New Flask Mega Tutorial

Comprehensive Coverage of Topics

The updated tutorial is structured to guide learners through a logical progression of concepts:

- Introduction to Flask fundamentals.
- Database integration with SQLAlchemy.
- User authentication and authorization.
- Building RESTful APIs.
- Frontend integration with JavaScript frameworks.
- Deployment strategies for production environments.

By organizing content in this manner, the tutorial ensures learners build a solid foundation before tackling advanced topics.

Modular and Scalable Design

One notable feature is its modular approach:

- Each section is designed as a standalone module with practical examples.
- The tutorial encourages best practices like blueprints, application factories, and environment configurations.
- Code snippets are clean, well-documented, and easy to adapt.

This design not only facilitates incremental learning but also prepares developers to scale projects efficiently.

Enhanced Content and Pedagogical Strategies

Clearer Explanations and Updated Examples

The tutorial now features:

- Simplified language that caters to non-native English speakers.
- Updated examples reflecting current web standards.
- Real-world scenarios that resonate with modern development challenges.

For instance, the sections on user authentication now incorporate OAuth2 integrations and multi-factor authentication, aligning with industry standards.

Interactive Learning Components

While traditionally a written resource, the new tutorial integrates:

- Embedded code editors and notebooks.
- Video walkthroughs for complex sections.
- Quizzes and exercises at the end of chapters to reinforce learning.

These enhancements promote active engagement, which is crucial for retaining complex technical concepts.

Accessibility Improvements

Recognizing the global nature of its audience, the tutorial:

- Uses plain language and avoids unnecessary jargon.
- Provides translations and subtitles for multimedia content.
- Ensures compatibility with screen readers and assistive technologies.

Such efforts widen its reach and facilitate inclusive learning.

Technical Advancements and Modern Practices

Updates for Flask 2.x Compatibility

The tutorial now fully supports Flask 2.x features:

- Asynchronous route handling, allowing for non-blocking I/O operations.

- Built-in support for type annotations, improving code readability and tooling.
- Updated dependency management with pip and virtual environments.

This ensures learners are familiar with the latest Flask capabilities, making their skills more relevant.

Security and Best Practices

Security features are emphasized throughout:

- Proper session management.
- Cross-site request forgery (CSRF) protection.
- Secure password hashing with bcrypt.
- Input validation and sanitization.

Additionally, the tutorial discusses common vulnerabilities and how to mitigate them, fostering a security-first mindset.

Deployment and DevOps Integration

The final sections guide learners through deploying Flask applications using:

- Docker containers.
- Cloud platforms like AWS, Heroku, and Google Cloud.
- Continuous Integration/Continuous Deployment (CI/CD) pipelines.

This comprehensive approach prepares developers for real-world deployment scenarios, bridging the gap between development and production.

Community Engagement and Support Enhancements

Expanded Community Resources

The updated tutorial links to:

- Official Flask documentation.
- Community forums and Q&A platforms.
- GitHub repositories with sample projects and boilerplates.

This connectivity fosters a collaborative learning environment, encouraging learners to seek help and contribute.

Feedback-Driven Improvements

Miguel Grinberg adopted a more iterative update process:

- Incorporating user feedback to clarify confusing sections.
- Adding new chapters based on emerging trends.
- Regularly updating dependencies and examples.

This responsiveness ensures the tutorial remains a living resource that adapts to the evolving needs of developers.

Implications for Learners and the Developer Ecosystem

For Beginners

The new tutorial lowers barriers to entry:

- Simplified explanations facilitate initial understanding.
- Practical, real-world projects increase motivation.
- Interactive components improve engagement and retention.

It empowers novices to build secure, modern web applications confidently.

For Experienced Developers

Seasoned programmers benefit from:

- Updated best practices.
- Deeper insights into Flask internals.
- Exposure to modern deployment and security strategies.

This positions the tutorial as a valuable resource for continuous professional development.

Broader Industry Impact

By standardizing modern Flask development practices, the tutorial:

- Contributes to a more skilled developer community.
- Promotes secure and scalable web applications.
- Encourages the adoption of Python-based web solutions across industries.

Such influence accelerates the growth of the Python web ecosystem.

Conclusion: The Future Outlook of the Flask Mega Tutorial

The recent overhaul of the Flask Mega Tutorial in English signifies a commendable step toward making web development education more accessible, current, and practical. Its comprehensive coverage, coupled with pedagogical enhancements and technical updates, ensures that learners at all levels can derive value. As Flask continues to evolve, resources like this tutorial will play a vital role in shaping best practices and fostering innovation within the Python community.

Looking ahead, further integrations?such as AI-driven code assistance, real-time collaboration features, and advanced deployment techniques?may become part of future updates. For now, the new Flask Mega Tutorial stands out as an exemplary model of technical education that balances depth, clarity, and accessibility, setting a high standard for online developer resources worldwide.

QuestionAnswer What are the main updates in the latest Flask Mega Tutorial in English? The new Flask Mega Tutorial introduces updated best practices, improved code examples, enhanced security features, and a more comprehensive walkthrough of modern Flask extensions to help developers build scalable web applications. How does the new Flask Mega Tutorial help beginners learn Flask more effectively? The tutorial offers clearer explanations, step-by-step guidance, and practical projects that simplify complex concepts, making it easier for beginners to understand Flask fundamentals and develop their first web apps confidently. Which new features or extensions are covered in the latest Flask Mega Tutorial? The tutorial now covers popular extensions like Flask-WTF for forms, Flask-Login for authentication, Flask-Migrate for database migrations, and best practices for deploying Flask applications with Docker and cloud services. Is the new Flask Mega Tutorial suitable for advanced developers? Yes, the tutorial includes sections on optimizing Flask apps, integrating with front-end frameworks, and deploying production-ready applications, making it valuable for both beginners and experienced developers. Where can I access the updated Flask Mega Tutorial in English? You can access the latest Flask Mega Tutorial on the official Miguel Grinberg blog, GitHub repository, or popular educational platforms like Udemy and YouTube, where the updated content is regularly published.

Related keywords: flask tutorial, flask mega tutorial, flask python guide, flask web development, flask beginner tutorial, flask project tutorial, flask app creation, flask framework, flask development

course, flask programming

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