Cloud and API Deployment

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First I changed the app.py to allow API integration by adding the following:

```python
# Add a new API endpoint
@app.route('/api/predict', methods=['POST'])
def predict_api():
    # For API requests, we expect JSON data
    data = request.get_json(force=True)

    try:
        # Extract features from JSON
        features = [
            float(data.get('sepal_length')),
            float(data.get('sepal_width')),
            float(data.get('petal_length')),
            float(data.get('petal_width'))
        ]

        # Convert to numpy array
        final_features = np.array(features).reshape(1, -4)

        # Make prediction
        prediction = model.predict(final_features)

        # Get the species name
```

```python
        species_dict = {0: 'Setosa', 1: 'Versicolor', 2:
'Virginica'}
        result = species_dict[prediction[0]]

        # Return prediction as JSON
        return jsonify({
            'status': 'success',
            'prediction': result,
            'features': {
                'sepal_length': features[0],
                'sepal_width': features[1],
                'petal_length': features[2],
                'petal_width': features[3]
            }
        })

    except Exception as e:
        return jsonify({
            'status': 'error',
            'message': str(e)
        })

if __name__ == '__main__':
    app.run(debug=True, host='0.0.0.0')
```
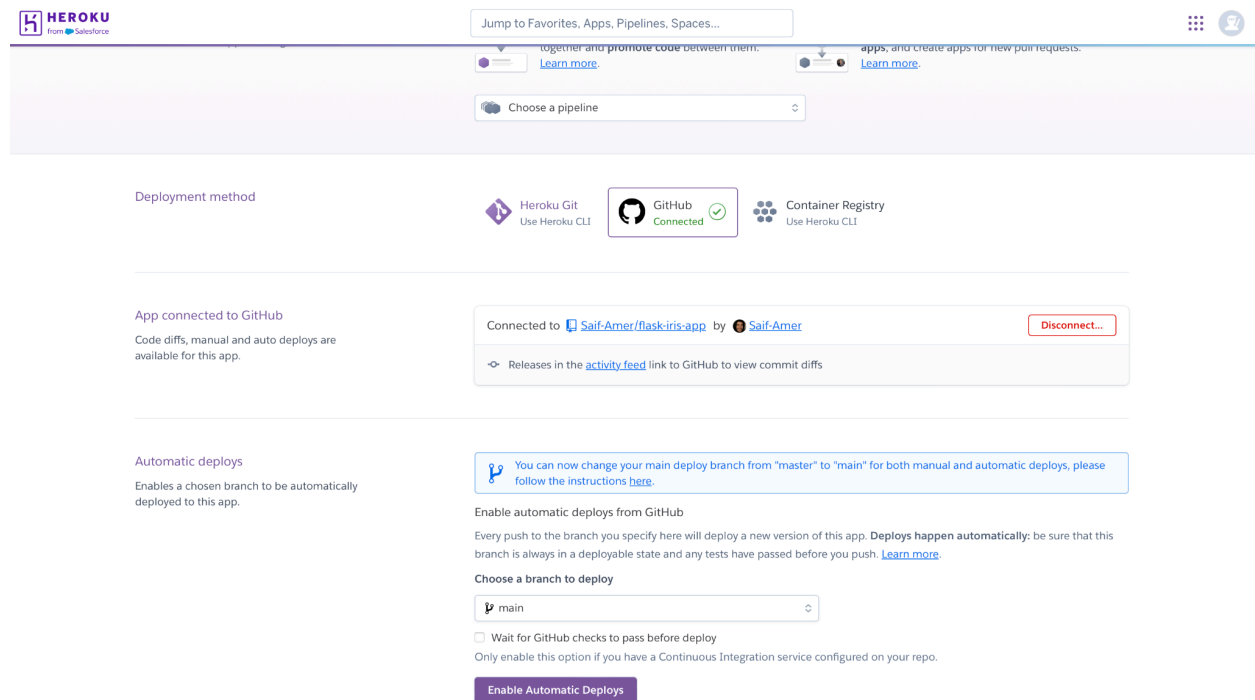
I chose to deploy the API on Heroku, I uploaded my files on to github and then connected my repository to the Heroku account

After deploying the branch you can give an argument such as:
{ "sepal_length": 5.1, "sepal_width": 3.5, "petal_length": 1.4, "petal_width": 0.2 }

And it will respond accordingly.