

Check out the future of checkouts

Introduction to the Payment Request API

Christian Ost at BarcelonaJS in June 2019

Web Payments is an emerging web standard [...] to simplify online payments and enable a broader set of players to participate easily in the payments ecosystem on the web.

<https://developers.google.com/web/fundamentals/payments/>

[...] It is not a new way for paying for things; rather, it's a way for users to select their preferred way of paying for things, and make that information available to a merchant.

https://developer.mozilla.org/en-US/docs/Web/API/Payment_Request_API

Why do we need a standard around paying online?

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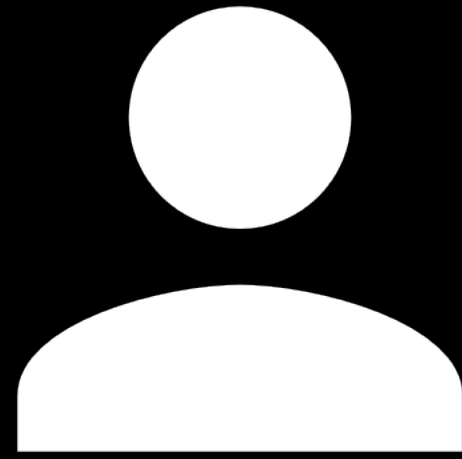
typeform.com

1. How will paying online work?
2. How can I use it?
3. How will it look like?

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1. User performs checkout.



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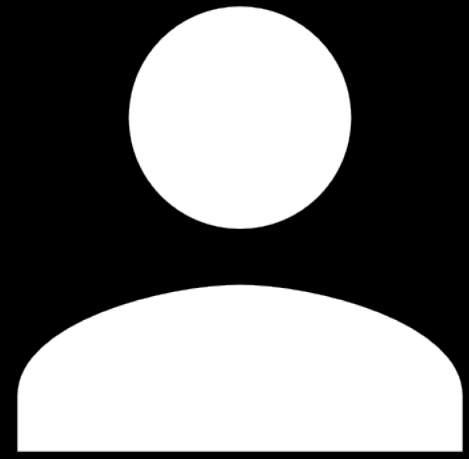


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2. Merchant asks for billing information.



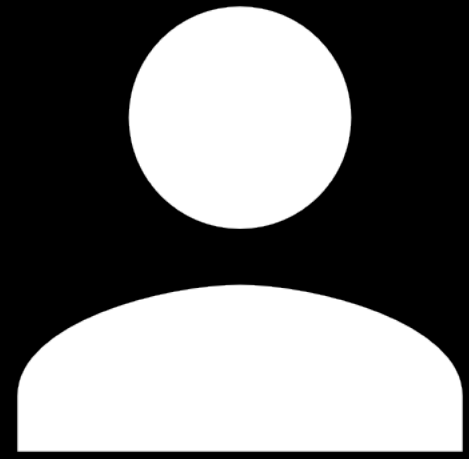
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3. Possible payment processing through a payment handler, e.g. Google Pay.

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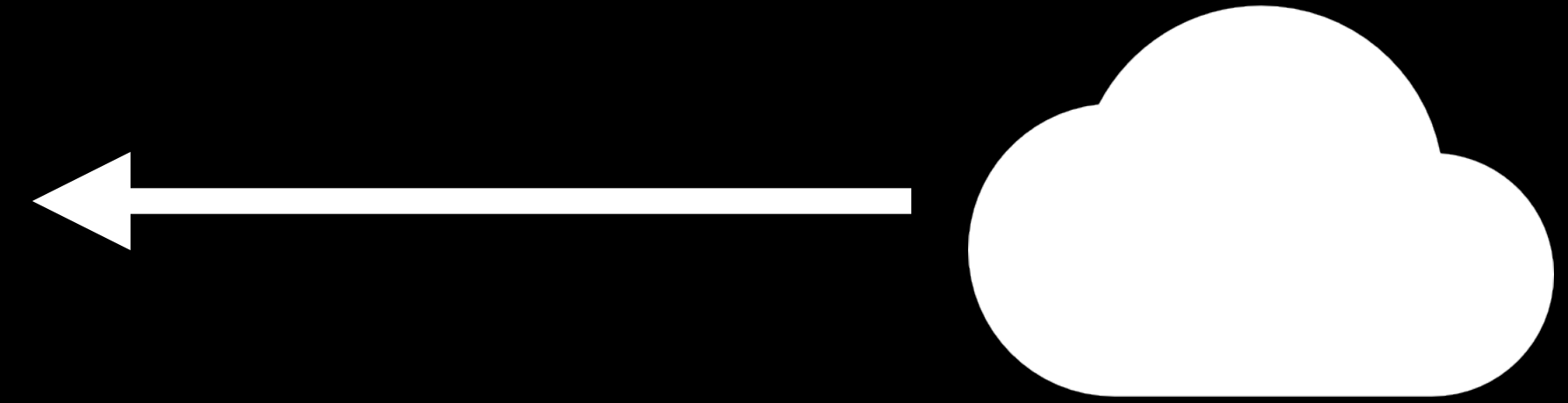
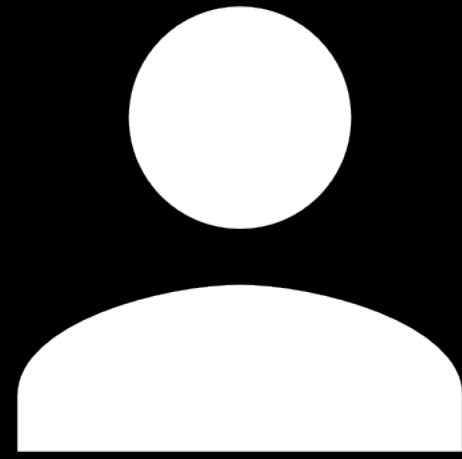


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5. Payment Service Provider returns outcome.



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To enable this flow, the Web Payment Ecosystem is built on top of multiple APIs.

Web Payment Ecosystem

- **Payment Request API** (native checkout flow)
- **Payment Handler API** (payment handling by 3rd parties)
- **Payment Method Identifiers** (e.g. `basic-card`)
- **Payment Method Manifest** (describes how payments are handled)

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IE	Edge *	Firefox	Chrome	Safari	iOS Safari *	Opera Mini *	Chrome for Android	UC Browser for Android	Samsung Internet
			72						
			73	5.1	11.4				
	7 17	8 66	7 74	7 12	7 12.1				4
11	7 18	8 67	7 75	12.1	12.2	all	5 74	11.8	7 9.2
	76	8 68	7 76	13	13				
		8 69	7 77	TP					
			7 78						

Basic Payment Request

```
if (!window.PaymentRequest) return;  
  
const paymentRequest = new PaymentRequest(  
    methodData,  
    details,  
    options  
);
```

Payment methods data

```
// new PaymentRequest(methodData, details, options)

const methodData = [
  {
    supportedMethods: 'basic-card',
    data: {
      supportedNetworks: ['visa', 'mastercard', 'amex'],
      supportedTypes: ['debit', 'credit']
    }
  },
  {
    supportedMethods: 'https://apple.com/apple-pay',
    data: { /* dictionary configuring ApplePay integration */ }
  }
]
```

Available payment method identifiers

- basic-card
- basic-card-transfer
- tokenized-card
- inter-ledger
- <https://google.com/pay>
- <https://apple.com/apple-pay>
- <https://spay.samsung.com>

see <https://w3c.github.io/payment-method-id>

Payment details

```
// new PaymentRequest(methodData, details, options)
```

```
const details = {  
  displayItems: [  
    {  
      label: 'seggsy shirt',  
      amount: { currency: 'EUR', value: '29.99' },  
    },  
    {  
      label: 'seggsy hat',  
      amount: { currency: 'EUR', value: '59.99' },  
    },  
  ],  
  total: {  
    label: 'Total',  
    amount: { currency: 'EUR', value: '89.98' },  
  },  
};
```


Payment methods data

```
// new PaymentRequest(methodData, details, options)

const options = {
  requestShipping: true,
  requestPayerEmail: true,
  requestPayerPhone: true,
  requestPayerName: true,
  shippingType: 'shipping', // or 'delivery' or 'pickup'
};
```

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Executing a payment request

```
try {  
  const paymentRequest = new PaymentRequest(/* ... */)  
  if (!await paymentRequest.canMakePayment()) {  
    // consider showing an alternative payment flow  
  }  
  
  const response = await paymentRequest.show()  
  
  // user accepted the payment, handle it  
  
  response.complete('success') // or 'fail'  
} catch(error) {  
  // handle error  
}
```

Live demonstration

Resources

<https://developers.google.com/web/fundamentals/payments/>

https://developer.mozilla.org/en-US/docs/Web/API/Payment_Request_API

<https://www.w3.org/Payments/WG/>

Thank you for listening.

Find a link to the slides on <https://christianost.de>.