

UPbank System Requirements

ID	Description	Attachment	Use cases
1	The system shall allow the creation of accounts, using the attached data provided by the user.	1. Email 2. Password 3. Full name 4. Birthday 5. Address 6. Tax number 7. ID number	1
1.1	When creating an account, the system shall ensure the user is at least 18 years old.		1
1.2	When creating an account, the system shall ensure the given email isn't already in use.		1
1.3	When creating an account, the system shall store the account creation date and time.		1
1.4	When creating an account, the system shall automatically create two debit cards, called "Physical Card" and "Virtual Card".		1
1.4.1	When creating an account and its' respective cards, the cards should be valid for two years counting from their creation.		1
2	The system shall be able to convert an account ID into the respective IBAN, using Banco de Portugal's specifications attached.	https://www.bportugal.pt/sites/default/files/anexos/documentos-relacionados/international_bank_account_number_vfinal_dpg_vr_20180226.pdf	9.1
2.1	The system shall use "00972890" as the first digits of internal BBANs.		9.1
3	The system shall be able to convert a card ID into the respective number.		8
3.1	The system shall use "436339" as the first digits of all cards.		8
3.2	The system shall use Luhn's formula to generate all cards' checksum, according to ISO/IEC 7812-1:2017.		8
3.3	The system shall ensure all card numbers have exactly 16 digits.		8
4	When closing an account, if the account's balance isn't 0, the system shall request an IBAN and transfer the remaining funds to the account that IBAN belongs to.		2
5	The system shall allow filtering transactions by starting month, ending month, type (expense/income) and sender/receiver.		4
5.1	The system shall ensure the starting month is less than or equal to the ending month.		4

ID	Description	Attachment	Use cases
6	The system shall process service payments, with an entity, reference and amount provided by the user.		5.2
6.1	The system shall ensure service entities have exactly 5 digits.		5.2
6.2	The system shall ensure service references have exactly 9 digits.		5.2
7	The system shall process government payments, with a reference and amount provided by the user.		5.3
7.1	The system shall ensure government references have exactly 15 digits.		5.3
8	The system shall process telco payments, with a provider, amount and phone number given by the user.		5.4
8.1	The system shall ensure telco providers are in the attached data.	<ul style="list-style-type: none"> • Lycamobile GT Mobile • MEO • MEO Card • MEO Card - PT Hello / PT Card • MEO Card - Telefone Hello • MEO Escola Digital • Moche • NOS • NOS - Escola Digital • SAPO • Sapo ADSL • UZO • Via Card • Vodafone • WTF 	5.4
8.2	The system shall ensure telco phone numbers have exactly 9 digits.		5.4
8.3	The system shall ensure telco phone numbers start with 91, 92, 93 or 96.		5.4
9	The system shall process bank transfers, with an IBAN, amount and optional note given by the user.		5.1
9.1	If the IBAN in a bank transfer belongs to one of the bank's accounts, the system shall process the payment immediately, by creating the respective income transaction in the receipient's account.		5.1
9.2	If the IBAN in a bank transfer belongs to an account outside the bank, the system shall use the respective external API to process the payment.		5.1
10	The system shall allow scheduling transfers, given an IBAN, date, amount and frequency.		6.1

ID	Description	Attachment	Use cases
10.1	The system shall allow the following values for scheduled transfers' frequency: Daily, weekly, monthly, yearly, applying the rules attached.	<p>The system shall process all repeating transfers at midnight.</p> <p>If a transfer is repeated weekly, the system shall process the transfers exactly 7 days apart, on the same week day.</p> <p>If a transfer is repeated monthly, the system shall process the transfers on the same day of the month. If the day doesn't exist in a given month, the last day of the month shall be used instead.</p> <p>If a transfer is repeated yearly, the system shall process transfers on the exact same day, If the given day is the 29th of February and a given year isn't a leap year, the payment shall be processed on the 28th of February that year.</p>	6.1
11	The system shall generate monthly account statements.		9.2
12	The system shall ensure all provided dates and datetimes are in conformity with the ISO 8601 standard.		1 6.1 6.2 9.2 10
13	The system shall ensure all provided addresses are in conformity with the attached format.	<ul style="list-style-type: none"> • Address line 1 • Address line 2 (optional) • Postal code (####-###) • City • District 	1 10
14	The system shall ensure all provided tax numbers are in conformity with article 1 of "Decreto-Lei n.º 14/2013, de 28 de janeiro".	https://info.portaldasfinancas.gov.pt/pt/informacao_fiscal/legislacao/diplomas_legislativos/Documents/Decreto-Lei_14-2013.pdf	1 10
14.1	The system shall use the procedure in 2.3.2 of the attached file to compute/verify the control number.	https://repositorio-aberto.up.pt/bitstream/10216/105401/2/200569.pdf	1 10

ID	Description	Attachment	Use cases
15	The system shall prevent any transaction from being made in case it would result in the account's balance being below 0.		5 5.1 5.2 5.3 5.4 6.1 6.2
17	For all transfers initiated by the user, the system shall ensure the amount is positive.		5 5.1 5.2 5.3 5.4 6.1 6.2
18	The system shall use euros (€) for all currency and balance expressions.		3 4 5 5.1 5.2 5.3 5.4 6 6.1 6.2 6.3 9.2 4.2
19	The system shall ensure all given IBANs conform to the ISO 13616 standard.		5.1 9.1
20	The system shall ensure all given PINs have exactly 4 digits.		8.3
21	The system shall ensure all user inserted strings do not exceed 80 characters, except where otherwise noted.		1 4.1 5.1 10