**Practical work assignments 4**

In this work, each student will have to complete two tasks according to their variant number. The variant number corresponds to the student's number in the journal.

**Task 1**

The following are examples of messages for the task of classifying spam using the naive Bayes method. For each example, there are two spam messages, three regular (non-spam) messages, and one test message that needs to be classified.

**Variants:**

**1.**

**Spam:** "You have won a prize! Call now to receive your gift."

"Incredible discount! Buy today and get a 50% discount on all items!"

**Not spam:** "Hello! How are you doing? It's been a long time."

"Reminder of the meeting tomorrow at 10 a.m."

"Here's the article I promised to send you."

**Test message:** "Great chance to win a new phone! Participate right now!"

**2.**

**Spam**: "A unique offer! Only today the price has been halved!"

"Get free access to our new service!"

**Not spam:** "How was your day? Is there any news?"

"Please confirm receipt of the email."

"Thank you for your help with the project. Everything turned out great!"

**Test messag**e: "Special offer! 70% discount on all programming courses!"

**3.**

**Spam:** "Your card is blocked. Follow the link to unlock."

"Open an account in our bank and receive a bonus of up to 1,000 rubles!"

**Not spam:** "Let's meet on Friday night. What do you think?"

"Do you remember that book we discussed? Here is the link to it."

"Confirm your participation in the conference."

**Test message:** "Offer of the day! Open an online account and receive 500 rubles cashback!"

**4.**

**Spam:** "A new way to make money! Earn money without investing!"

"An exclusive offer! Get a free monthly subscription!"

**Not spam:** "Look at this document, please. We need to make some changes."

"The meeting has been rescheduled for Thursday. Confirm if it is convenient."

"Congratulations on the successful completion of the project! Great job!"

**Test message:** "Become a participant in our contest and win a trip to the sea!"

**5.**

**Spam:** "Invest in cryptocurrency and earn income in a week!"

"Free shipping when ordering from 2000 rubles!"

**Not spam:** "What are your plans for the weekend? Maybe we should go to the movies?"

"Don't forget to bring the report to tomorrow's meeting."

"Here's an interesting article about new technologies in IT."

**Test message:** "Action! Order the product with a 90% discount! The offer is limited!"

**6.**

**Spam:** "Making money effortlessly! Become a partner of our company!"

"Have time to buy! There are only a few stock items left!"

**Not spam:** "We need to discuss the project. When will you have free time?"

"I sent you a presentation file. Check it out, please."

"Have a nice weekend! I hope you have a good rest."

**Test message:** "A chance to earn! Join our team and get bonuses!"

**7.**

**Spam:** "Your account has been hacked. Change the password immediately!"

"Just for today! 80% discount on all products!"

**Not spam:** "Let's discuss the test results. I have a few questions."

"I invite you to a webinar on artificial intelligence."

"Done! The project has been sent to the client. Well done, great job!"

**Test message:** "Get free investment advice!"

**8.**

**Spam:** "New earning opportunities! Work at home and earn!"

"Winner of the month! You've won an iPhone X!"

**Not spam:** "How are you doing with the new project? Is there any progress?"

"The report is ready. I'll send it to you tomorrow morning."

"An interesting conference will start soon. Do you want to go together?"

**Test message:** "Become a winner! Get a chance to win a laptop!"

**9.**

**Spam:** "Fast weight loss! Lose weight without dieting and exercising!"

"Limited Offer! Free shipping for the entire range!"

**Not spam:** "What do you say about the meeting on Monday? Is it convenient?"

"I sent you an email with the results of the analysis yesterday. Did you see it?"

"Happy birthday! I wish you good health and success!"

**Test message:** "Amazing opportunity! 60% discount on all sporting goods!"

**10.**

**Spam:** "Work from home and earn thousands of dollars every month!"

"Urgent! Your bank card is blocked!"

**Not spam:** "It's time to start preparing for the exam. What topics will we cover?"

"Here are the materials for preparing for the seminar. Read them, please."

"Today there will be a meeting of the programmers club. We will be glad to see you!"

**Test message:** "Work from home! Earn up to 3,000 rubles a day!"

**11.**

**Spam:** "Exclusive watches with a 75% discount! Hurry up, the number is limited!"

"Your account is temporarily blocked. Click on the link to restore access."

**Not spam:** "When can you see my code? I want to hear your opinion."

"We have a project presentation next week. Get ready!"

"Thanks for the help with the task. I couldn't have done it without you."

**Test message:** "Special offer! Rolex watches with an 85% discount!"

**12.**

**Spam:** "Increase the profit of your business! Use our unique tools!"

"Attention! Your account may be deleted! Confirm your details!"

**Not spam:** "How was your graduation? Tell me the details."

"Let's discuss the course work plan. I have some ideas."

"Don't forget to send your internship resume. The deadline is tomorrow."

**Test message:** "Increase the efficiency of your business! Our solutions will help you!"

**13.**

**Spam:** "Winning is guaranteed! Participate in the lottery and become a millionaire!"

"Get free concert tickets! Make sure to book your seats!"

**Not spam:** "What books do you recommend reading on programming?"

"Help me figure out this error in the code. I can't figure out where the problem is."

"Great news! Our project has received funding!"

**Test message:** "Contest! The winners will receive valuable prizes! Participate now!"

**14.**

**Spam:** "Earn millions with bitcoins! Start investing today!"

"Super promotion! Buy two items and get the third one for free!"

**Not spam:** "Do you need help with exam preparation? I can explain the difficult moments."

"A new version of the program has been released. Try to install it and tell me your impressions."

"Congratulations on passing the exam! You're doing great!"

**Test message:** "Start making money on cryptocurrencies! Invest today!"

**15.**

**Spam:** "Your account has been hacked! Change your password immediately!"

"Buy our courses and become an IT professional!"

**Not spam:** "I wanted to ask you how you manage to write code so quickly?"

"We need to discuss changes in the project. When is it convenient for you to meet?"

"Tell me which book to read on algorithms and data structures."

**Test message:** "Programming course! Become an expert in just one month!"

**16.**

**Spam:** "New! Super weight loss remedy! Weight loss is guaranteed!"

"Stop debiting funds from your card! Contact us urgently!"

**Not spam:** "Which programming language do you prefer to use in your projects?"

"I found an interesting article about new technologies in the field of machine learning. Will we watch it together?"

"Text me when you're free. We need to discuss plans for the next semester."

**Test message:** "Effective weight loss remedy! Try it and see for yourself!"

**17.**

**Spam:** "Investments with guaranteed income! Yield up to 20% per month!"

"Have time to order! There are only a few copies left!"

**Not spam:** "What topic should I choose for my term paper? It's hard for me to decide."

"I sent you a link to an interesting webinar. Shall we listen together?"

"Great news! We have received a grant for the development of our project!"

**Test message:** "High profitability! Invest and earn up to 25% per month!"

**18.**

**Spam:** "Forget about debts forever! We will help you get rid of loans!"

"Urgent sale! Prices are reduced by 90%!"

**Not spam:** "What advice can you give on preparing for a programmer interview?"

"Help me solve the problem of the search algorithm. I can't find the best option."

"Congratulations on graduating from university! The beginning of a new life!"

**Test message:** "The solution to all financial problems! Get rid of your debts easily!"

**19.**

**Spam:** "You've won the grand prize! Call us to find out more details!"

"An exclusive collection of watches! 95% discount!"

**Not spam:** "I need advice on choosing a laptop for programming. Which one do you recommend?"

"I sent you a sample code. Take a look, please, and write your comments."

"Done! The course project has been completed. Now you can relax!"

**Test message:** "The main prize is waiting for you! Find out more about the terms of participation!"

**20.**

**Spam:** "Earn money by selling our unique products! Income up to 10,000 rubles per day!"

"Attention! Your account has been hacked! Change your password immediately!"

**Not spam:** "Will you tell me how you became such a good programmer? Which way did you go?"

"I have an idea for a startup. I would like to discuss it with you."

"I'm defending my diploma today. Support me, please!"

**Test message:** "A unique earning opportunity! Sell our products and earn money!"

**21.**

**Spam:** "Your account is blocked! Restore access by clicking on the link!"

"There are only a few places left! Sign up for our training right now!"

**Not spam:** "I want to create a website. Which programming languages are better to use?"

"Please check my work. I want to know if I did everything right."

"Let's discuss the plans for the summer. Maybe we can go somewhere together?"

**Test message:** "Programming training! Hurry up to sign up while there are places!"

**22:**

**Spam:** "Order our products and get a 99% discount!"

"Urgent notification! Your card is blocked!"

**Not spam:** "Which math books should I read before applying to graduate school?"

"I wrote a program, but it works slowly. Can you tell me how to optimize?"

"Congratulations on winning the contest! Great job!"

**Test message:** "98% discount! Order now and save money!"

**23.**

**Spam:** "You have become a winner! Congratulations! Contact us to receive the prize!"

"Last chance! 90% discount on all products!"

**Not spam:** "What software do you use to develop mobile apps?"

"I came up with an idea for a new app. Do you think it's promising?"

"I sent you an invitation to the conference. If you're interested, sign up!"

**Test message:** "Bonus for the winner! Contact us to collect your prize!"

**24.**

**Spam:** "Invest in our startup and earn millions!"

"Exclusive content! Get access to all the materials for just 1 ruble!"

**Not spam:** "Help me figure out this code. I'm confused about the logic."

"Updates for the operating system have been released. Is it worth updating?"

"Congratulations on successfully defending your diploma! Great job!"

**Test message:** "A startup with great prospects! Invest and earn!"

**25.**

**Spam:** "Your account is temporarily blocked! Follow the link to restore access!"

"There are only a few days left! 80% discount on all courses!"

**Not spam:** "I want to learn how to work with databases. What resources do you recommend?"

"Done! The thesis has been submitted. Now you can relax!"

"A bug has been found in the program. Help me fix it, please!"

**Test message:** "Courses with 85% discount! Make an appointment while the offer is still valid!"

**26.**

**Spam:** "Get a loan without interest! Leave a request right now!"

"Buy our product and get a second one for free!"

**Not spam:** "What skills are needed to work in the field of data science?"

"Wrote an article about new trends in IT. Please take a look and give feedback."

"Congratulations on the promotion! You deserve it!"

**Test message:** "Credit without overpayments! Apply and receive the money instantly!"

**27.**

**Spam:** "You won a car! Call us to find out more details!"

"Urgent! Your account has been hacked!"

**Not spam:** "Which operating system do you prefer for software development?"

"We have come up with a new feature for our project. Do you think it's worth implementing?"

"Let's discuss the work plan for next week. I have some ideas."

**Test message:** "The prize is waiting for you! Call us to find out more information!"

**28.**

**Spam:** "Earn money on the affiliate program! Income up to 5,000 rubles a day!"

"Exclusive! 97% discount only today!"

Not spam: "What programming courses can you recommend for beginners?"

"The beta version of the application has been launched. Write your feedback, please!"

"Congratulations on the successful completion of the project! Great job!"

**Test message:** "A high-income affiliate program! Earn today!"

**29.**

**Spam:** "Your account has been hacked! Change your password immediately!"

"Hurry up to buy! There are only a few stock items left!"

**Not spam:** "Which book on algorithms do you like the most?"

"I sent you the source code of the project. Please check and give comments."

"Congratulations on receiving the scholarship! Great news!"

**Test message:** "There's not much time left! Have time to buy at a special price!"

**30.**

**Spam:** "Get a loan without checking your credit history! Leave a request right now!"

"Buy our product and get a second one for free!"

**Not spam:** "What skills are needed to work in the field of data science?"

"Wrote an article about new trends in IT. Please take a look and give feedback."

"Congratulations on the promotion! You deserve it!"

**Test message: "**Credit without overpayments! Apply and receive the money instantly!"

**Task 2**

You need to come up with a dataset consisting of 10 objects and 3 attributes, and put up marks. Next, you need to come up with 11 object and classify it using the Naive Bayes method.

An example of of such dataset is in a lecture № 4.